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Major destruction. When the looting and riots were at a peak in mid-May, more than 6,000 buildings were destroyed in Jakarta, most of them in the Chinese section of the city, Glodok. The police made frequent use of the Edacs private radio system delivered by Ericsson. Photo: THORD ANDERSSON

Flight from Jakarta – and the homecoming

Some 140 Ericsson employees and their families were evacuated from the upheaval in Jakarta. They were flown to safety in Singapore on a chartered Fokker F28, all thanks to an efficient crisis management system. Contact was present when the first Ericsson employees returned to the office in Jakarta. **4–5**

Bluetooth connects people cordlessly

Ericsson, Nokia and a few other companies recently launched a new solution for cordless communications between mobile products. Voice and data are transferred between different types of equipment quickly, easily and cordlessly, using a radio chip.

The solution, code-named "Bluetooth," generated great interest. Nearly 300 journalists attended the press conferences that were held on three continents. **6**

Ericssons B-share, 5/6

World standard status critical

The decision will soon be made whether or not the Ericsson-supported WCDMA technology will become a worldwide standard. Proposals to the International Telecommunications Union are due in June. Europe, Japan and the U.S. are expected to submit proposals. Intensive work is currently under way at Ericsson to provide a detailed description of the third-generation mobile telephony standard. **10–11**

New operators, new business

Ericsson's company in the U.K. is increasing its sales volumes to the many new British operators. Ericsson's cumulative sales to British operators total GBP 100 million. The company plans to sell twice as much by the year 2000. Contact portraits a market in which early deregulation means lucrative business prospects for Ericsson. **18–19**

Bright future for Poland

Even though Poland was late in building its mobile network, the country is striving to catch up with the rest of Europe. Economic growth is favorable and Poland has a good chance of becoming an EU member by 2003. Contact visited a nation installing radio base stations. **16–17**

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PUBLICATION FOR ERICSSON EMPLOYEES WORLD WIDE

Publisher
Lars A. Stålberg,
phone: +46 8 719 31 62

Corporate Editor
Lars-Göran Hedin,
phone: +46 8 719 98 68
fax +46 8 681 27 10
larsgoran.hedin@lme.ericsson.se
memo: LME.LMELGH

Editorial assistant
Lotta Muth,
phone: +46 8 719 51 71
lotta.muth@lme.ericsson.se
memo: LME.LMEMUTH

Editors
Patrik Lindén,
phone: +46 8 719 18 01
patrik.lindén@lme.ericsson.se
memo LME.LMEPALI

Mia Widell Örnung,
phone: +46 8 719 41 09
mia.widell@lme.ericsson.se
memo: LME.LMEWIDE

Editorial staff
Thord Andersson,
phone: +46 8 422 03 16
thord.andersson@ebc.ericsson.se
memo EBC.EBCTKAN

Anneli Krantz,
phone: +46 8 764 15 96
anneli.krantz@ecs.ericsson.se
memo ECS.ECSANKR

Gunilla Tamm,
phone: +46 8 757 20 38
gunilla.tamm@era.ericsson.se
memo ERA.ERAGT

Nils Sundström,
phone: +46 8 757 05 21
nils.sundstrom@era.ericsson.se
memo ERA.ERANISM

Lena Widegren,
phone: +46 8 719 69 43
lena.widegren@etx.ericsson.se
memo ETX.ETXLAWN

Niclas Henningsson,
phone: +46 31 747 01 40
niclas.henningsson@emw.ericsson.se
memo EMW.EMWNIHE

Address
Telefonaktiebolaget LM Ericsson,
HF/LME/I, S-126 25 Stockholm,
Sweden

Fax +46 8 681 27 10

Distribution
Solveig Sjölund,
phone: +46 8 719 41 11
solveig.sjolund@lme.ericsson.se
memo: LME.LMEKOCO

Layout
Paues Media in Stockholm AB,
phone: +46 8 665 80 72
kontakten@pauesmedia.se

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A cultural revolution is now in progress at Ericsson Data. Under the motto "DO IT," barricades are being torn down and doors opened between different areas of the company's operations. A global organization in which all units pursued their own closed-cell interests in the past will now be transformed to an open, network-construction company in every sense of the word.

Cultural revolution at Ericsson Data

This is the company – the new Ericsson Data – that will spearhead Ericsson's largest investment ever in Information Technology. On the corporate level, Ericsson is making IT investments valued in the billions with a partial view toward Year 2000 Compliance but also in efforts to achieve its goal to become the world's leading company in terms of internal IT utilization.

If you start complaining today about Ericsson Data, brace yourself for an immediate reaction from the company's employees. Very few Ericsson companies have been subjected through the years to so much internal criticism for poor service, lack of responsibility and data communication malfunctions. In many cases, the criticism was justified, but, at times, it was also unfair – it's not always Ericsson Data's fault when memo services do not function as designed, for example.

Göran Wågström was named President of Ericsson Data a little more than a year ago. And he was actually one of the persons not always satisfied with the company's internal data support.

"Elements in need of change"

"That's one of the reasons why I looked at my new place of work through the eyes of a somewhat dissatisfied customer," Mr. Wågström says. "And I saw several elements in the organization and its mode of internal operations that needed to be changed. I realized that the individual competence within Ericsson Data is very high. I also realized a completely new culture and esprit de corps were needed to break away from ingrained behavioral patterns."

"To be able to deliver high quality service Ericsson has to standardize and simplify its IT environment in a much higher degree. The user organizations also have to improve in professionalism and knowledge."

"There was a generally prevalent tendency to shy away from responsibility in critical situations, for example, by passing the problem to a higher level in the organization. In the new Ericsson Data, problems will be solved immediately at their source; they will no longer be referred to higher echelons in the hierarchy. To facilitate these efforts, we are making strong widespread investments in skills development. We shall also strive to utilize more efficiently the enormous amount of knowledge and expertise available in our company," Göran Wågström continues.

Göran Wågström, President of Ericsson Data has started a cultural revolution with the motto "DO IT". Ericsson Data has caught a lot of flak for poor service throughout the years, but this is about to end. Tearing down internal barricades and networking, Ericsson Data will transform into a world class information technology company.

Four important areas of expertise

Ericsson Data is truly at the hub of Ericsson's comprehensive IT investment. Four important areas of expertise have been identified for the company's future operations. In parallel, a series of highly tangible changes are being made in Ericsson Data's approach to its business pursuits.

In cooperation with corporate IT representatives, Göran Wågström and his management staff at Ericsson Data have reviewed the areas earmarked for future development of his company's skills. The four areas are now reflected throughout the company's entire organizational structure:

- Global infrastructure for infocommunications. On January 1, 1998, Ericsson Data assumed responsibility for ECN, the Ericsson Corporate Network. ECN is now being modernized in preparation for the introduction of a more efficient structure and conversion to standardized network components.
- LAN-support (in local data networks) for local infrastructures, extensive network operations, software support and other features.
- Consulting operations for Ericsson's business processes. Introduction of the SAP administrative support system is one example of several projects under management by Ericsson Data. Programming tools and Internet/intranet services comprise other important areas of expertise.
- Systems integration, defined as skills related to the IT-element in total solutions offered by Ericsson to external customers.

Large projects

The introduction of SAP/R3 as a corporate business support system is probably the largest single project of its kind ever implemented by Ericsson. Responsibility for adaptations to meet Ericsson's specific needs lies with Ericsson Data, including spin-offs of the system in different companies, training and other aspects of implementation.

The phase-out of Memo, which will be replaced by Microsoft Exchange, is another major improvement project under management by Ericsson Data. The gradual introduction of ESOE, Ericsson Standard Office Environment, is another. ESOE is a standard range of software used in everyday operations. It will replace a large number of solutions used by several different units of Ericsson.

Focus on helpdesk

LAN-support and Memo are the most common points of contact between Ericsson employees and Ericsson Data. They also offer the toughest challenge and the greatest exposure to internal criticism. Göran Wågström is well-aware that shortcomings in his company's support function – or helpdesk, as it's also called – can jeopardize the good reputation he hopes the company gains from its cultural revolution, its new strategy and its broad range of improvement activities.

"We intend to focus strongly, therefore, on higher helpdesk quality. With a higher status, incentives and rewards, we shall try to attract our most skilled employees to accept this challenge, since high skill levels in Helpdesk will enable us to process and correct malfunction complaints and realize substantial savings in time and money for us and our internal customers".

"Beginning in Stockholm, we also plan to introduce several new concepts in our internal IT structure. We intend to create a single "campus" for the entire Stockholm area, whereby all servers will be moved to one place. The new "server farm" in Älvsjö will be able to handle all maintenance work on machines, backups and other equipment much more effectively and reliably than our present structure.

"In parallel, we plan to outsource software support operations to contract suppliers in order to increase service and quality. With the introduction of ESOE, we will gain access to a standardized software package that will enable us to handle 95 percent of all malfunction complaints directly through the Helpdesk."

Obvious improvements

Göran Wågström promises that users in the Stockholm area will begin to see obvious results of Ericsson Data's renewed efforts by the beginning of 1999. Global implementation of the company's new data support methods will then be started. Regional operating centers, in addition to the Stockholm unit, will be developed in Dallas and Kuala Lumpur and assume a central role in Ericsson Data's support operations.

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"That's why it is important to tear down barricades, and to work in networks instead of closed cells. We will also learn to utilize our various skills in a more intelligent manner, partly through the construction of databases to store and capitalize on our skills and experience.

"We want Ericsson Data to be considered and serve as a world-class company in terms of IT skills and expertise.

Attitude adjustment

The entire company is now characterized by a program for change in company culture conducted under a very terse motto: DO IT. An attitude adjustment among Ericsson Data's employees is an important part of the program. Göran Wågström is pleased with results so far, and the DO IT campaign has been very favorably received after its recent introduction in all phases of Ericsson Data operations.

"The message we have tried to convey, which calls for stronger focus on service and much greater personal initiatives, seems to have created a new enthusiasm in the company. It's almost as if our employees have been waiting for somebody to place more clearly defined demands on each and every one of us. We have formulated a vision, the ideal picture of how Ericsson Data should function in the future, and it seems to have been eagerly accepted. Everybody is involved. Based on this ideal picture, we shall now establish goals for all employees, personal goals that everybody will strive to achieve.

"We have also appointed personal, individual coaches or guidance counselors for all management personnel in the company to help them become better leaders. And all our efforts will include full consideration for the individual qualifications of all employees.

"We don't want all employees to be cast in the same mold."

Ericsson Data's new vision and strategy, established nearly a year ago, will provide guidance in the company's transformation. The strategy identifies two main missions for the company, one for external and the other for internal operations.

New strategy

Internally, Ericsson Data will serve as a proactive force for IT changes that need to be implemented in all parts of Ericsson to achieve the objectives established in Wanted Position 2000. Among other goals, Wanted Position 2000 clearly states that Ericsson shall strive to become a world leader in terms of internal IT utilization.

Externally, Ericsson Data's IT expertise will be exploited in the new infocom market. Traditional and new operators, service companies and others are all potential customers when it comes to IT solutions for internal applications or as part of their proprietary business offerings.

"Our own Wanted Position for Ericsson Data is to establish strong external operations that will contribute significantly to corporate business growth," Göran Wågström explains.

Changes starting to show

As for the internal transformation of Ericsson Data, Göran Wågström says that changes are beginning to take effect within certain areas.

"We have for instance already delivered ESOE to more than 10,000 users, and our polls show that customer satisfaction has increased. Most customers confirm that ESOE has given them a computer environment dramatically advanced compared to what they used to have."

LARS-GÖRAN HEDIN

in brief

Large order in China

The Postal and Telecommunications Authority of Heilongjiang province in China has booked an order for GSM equipment valued at more than SEK 1.3 billion. The contract calls for a third expansion of the GSM network in Harbin, the capital of Heilongjiang province.

Combined with the first contract signed in April, the GSM order is valued at more than SEK 2.4 billion, the largest order ever booked by Ericsson in Heilongjiang province.

Telecel buys GSM network

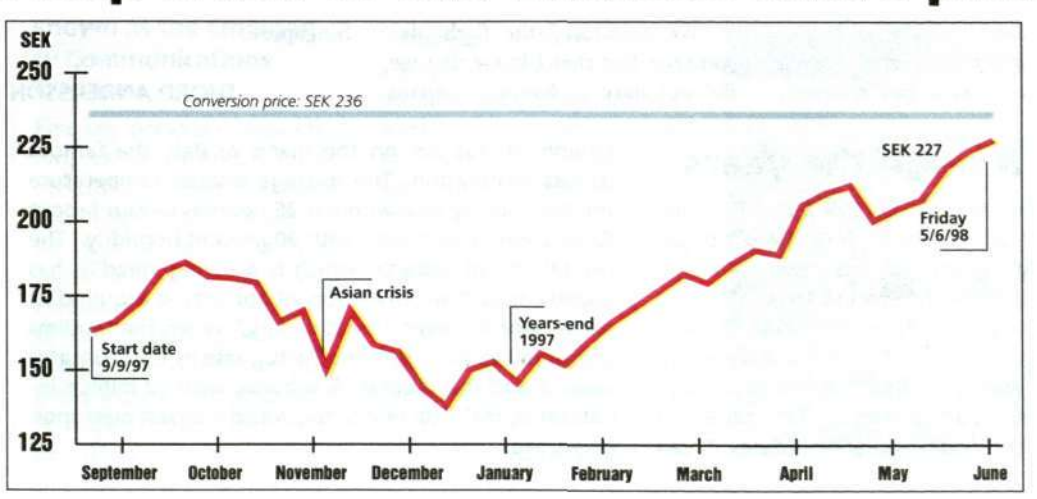
Ericsson has sold a GSM solution to Telecel, one of three mobile operators in Portugal. The network is an extension of Telecel's original GSM 900 network. The new contract also includes Enhanced Full Rate (EFR), a voice encrypting technology that increases voice transmission quality to a level virtually equal to voice quality over fixed network telephones.

New PC environment

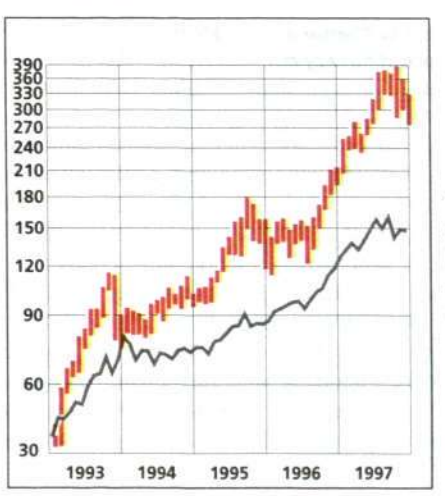
ESOE, Ericsson Standard Office Environment, is a new standardized desk environment for PCs that has now been installed in 10,000 employee machines. The installation rate corresponds with ESOE introduction plans, which call for 40,000 ESOE clients by year-end 1998.

"ESOE is important since it creates a simple and effective information environment for Ericsson's PC users. In addition, Windows Office 97 will become standard equipment within Ericsson on July 1, 1998. We have good reason, therefore, to accelerate efforts to introduce ESOE," says Rolf Skoglund, Senior Vice President, Corporate Information Systems and Technology.

Keep track of the Ericsson share price with Contact



On September 9, 1997 an extraordinary meeting of stockholders approved a proposal to issue convertible debentures to Ericsson employees. The conversion period extends through June 30, 2003.
For more info, see: http://inside.ericsson.se/converti.htm



The B share's highest and lowest monthly quotation on the Stockholm Stock Exchange.

Dramatic evacuation from turmoil in Jakarta

Thanks to good planning and rapid action, no one in the Ericsson Indonesia organization was harmed during the evacuation of the company's 140 employees and their families from crisis-stricken Jakarta.

Tuesday, May 12, when the tragic incident involving the deaths of six students occurred, was one of the most dramatic days. It was an event that has not as yet been explained and which everyone is discussing. Snipers are suspected of having committed the deed. In accordance with Muslim custom, the dead students were buried the next day. Large demonstrations were held in many places in the city. Toward evening, riots broke out all over the city.

"Getting to the airport was an adventure," Mats Olsson says. He and many other Ericsson employees in Jakarta were evacuated from the city during the riots. Photo: THORD ANDERSSON

Fires over Jakarta

"Thursday morning we could see from our office that a large number of fires had broken out. Cars, gasoline stations, banks and shopping centers were being attacked and the fires were coming closer to the office," says Krikor Tashadian, a Lebanese-American who manages the company's largest division, Operations.

While this was happening, Mats Olsson was participating in a Board of Directors' meeting in the office.

"I was forced to end the meeting in order to follow developments," Mats Olsson reports. "The police chief gave us instructions to empty the building as soon as possible since there were two banks in the building, and the building was owned by a Chinese conglomerate as well. The Chinese, in particular, were a vulnerable group during the riots."

Mats Olsson and his Chinese wife Choupin found safety on the island of Bali.

At lunch time, everyone left the building, supervised by Krikor Tashadian and personnel manager Victor Manoe, a native Indonesian. Some streets were already blocked, but all employees were able to get to their homes, and visitors reached their hotels safely. A number of stores next to Ericsson's office building were destroyed. During the afternoon two tanks were stationed outside the building.

On Friday everyone was told to stay home. But there was feverish activity all day on the part of those who were members of the group responsible for risk management. They were able to maintain contacts by means of mobile telephones.

Away from the city

Mats Olsson, his Chinese wife Choupin and their daughter, as well as several Board members, were able to escape by plane to Bali under dramatic circumstances Friday afternoon.

"Getting to the airport was a hair-raising experience," Mats Olsson says. "Without the help of Dalimin, my chauffeur, we would never have made it."

Dalimin, a former commando, was phenomenal in getting past road blocks.

"By noon on Saturday we had gotten about 70 persons on their way on flights of various types," Krikor Tashadian recalls.

The "refugees" flew to Singapore, Kuala Lumpur, Bangkok and Australia, among other destinations. There was only one fairly safe way to reach the Jakarta airport, but after the lunch hour this route was also closed. More than 80 persons still had to be evacuated.

In this situation, Magnus Ask, a member of the corporate staff in Stockholm, was instructed to arrange a charter flight. It was a matter of having an aircraft ready to leave Jakarta within 24 hours. Magnus Ask, incidentally, receives the unstinted praise of all in Ericsson's Indonesian organization. Through his contacts, he located a plane with 24 seats, but no pilot. Then Graeme McCusker got a tip on a Swedish aircraft broker by the name of Mats Eriksson in Indonesia.

Negotiations were begun and resulted in the promise of a Fokker F28 with seats for 81 persons for a flight to Singapore. Seventy-seven persons would be able to get away. This provided the margin that was needed for some additional passengers.

"Our communications chain functioned brilliantly the entire time," Krikor Tashadian says. "Within an hour or so the 77 persons who were waiting to be evacuated all knew exactly what was happening."

Two so-called safe havens where they could feel relatively safe had been arranged for the employees. Many of them lived in the most dangerous parts of the city and had to make their way out of them. The Hotel Kristal and the Country Woods Estate became the temporary residences of some employees.

Clear directives

In the meantime Mats Olsson had returned from Bali where he had left his wife and child and some Board members.

"The most important thing was to give clear directives and I accordingly organized the evacuation, together with the employees, as a military operation," says Mats Olsson, who is a reserve supply officer in the Swedish Army.

The situation was very critical during the Friday afternoon but became somewhat calmer on the Saturday.

"I decided that early Sunday would be the best time to evacuate but we had not yet agreed on all the terms for the charter plane. However, we decided that everyone should gather at the Hotel Kristal Saturday evening. Just getting there was an adventure," Mats emphasizes.

The negotiations over the aircraft continued. The owner wanted 33,000 American dollars in cash.

"We confirmed the flight despite the fact that I knew that we did not have a chance to obtain cash. I counted on the owner accepting a dollar check that we had in the office."

Getting to the office was not easy. The office building was surrounded by more than a hundred marines who were not letting anyone through. However, Mats succeeded in getting through under military escort, only to discover that there were no more dollar checks.

He would have to try to pay for the plane in rupiahs.

Ready for departure

During a session at the Hotel Kristal in the evening all the employees and their families were instructed to gather at 3:30 the following morning for transportation to the Halim military airport. The flight would leave at 7:00. Many were frightened, but remained calm.

Personnel Manager Victor Manoe and Krikor Tashadian had hired three buses for the trip to the airport.

They left on schedule, escorted by ten marines. They were at the airport an hour later.

"This was the most challenging project I have ever been involved in during my 25 years with Ericsson," says Krikor Tashadian. "The safety of our employees and their families was my primary concern every moment."

"Krikor is one of the strengths of our organization," Mats Olsson points out. "During 48 hours of work without a break, he got virtually no sleep."

The final dramatic aspects of the puzzle were played out 20 minutes before the plane's scheduled departure. Mats Olsson finally convinced the charter broker to accept a check in rupiahs as a deposit, with payment to be made in dollars the following week. However, with 77 persons on board, the Fokker had too much fuel in its tanks. After another hour's delay, and with an aircraft that was 1,500 liters lighter, one of the most eagerly sought flights in Ericsson's history in Southeast Asia finally took off.

At ten minutes of six, Central European Time, on Sunday morning, the aircraft landed in Singapore.

THORD ANDERSSON

Indonesia through the years

■ The Republic of Indonesia proclaimed its independence in August 1945, following the capitulation of Japan. It was not until after several years of war with the returning Dutch that the latter acknowledged the country's independence in 1949. The country consists of the world's largest archipelago, comprising 13,677 islands on both sides of the equator. Fewer than 1,000 are populated. The total surface amounts to 3.2 million square kilometers, including adjacent water. Java, the main island, accounts for seven percent of the country's surface but has 60 percent of Indonesia's population, which amounts to approximately 205 million inhabitants. Indonesia is thus the world's fourth most populous country. Ninety percent of the inhabitants are Muslims, making Indonesia the world's largest Muslim nation. Islam is not the state religion, however. Chinese, with three percent of the population, constitute an important and influential minority. They control more than 75 percent of the country's capital. Christians and Hindus account for other substantial minorities. Three million Hindus live on the island of Bali, the famous tourist destination. The average annual temperature for the country as a whole is 26 degrees Celsius (about 82 degrees Fahrenheit), with 90 percent humidity. The capital city of Jakarta, which is growing steadily, has slightly more than 10 million inhabitants. It acquired its name, which means "great victory," when the Muslims captured the port from the Portuguese in 1527. Greater Jakarta and the Jabotabek suburbs, with 22 million inhabitants, make up one of the world's largest metropolitan areas.

The first nine employees who returned voluntarily to Indonesia were greeted by colleagues at the Jakarta airport.

Back to work in Indonesia

With a delay of slightly more than an hour on Sunday evening, May 24, Garuda flight 851 took off from Singapore International Airport, headed toward Jakarta. On board were Mats Olsson, manager of PT Ericsson Indonesia, and eight other key persons who on the next day would resume Ericsson's operations in Indonesia following the disturbances there.

Seats on this last flight for the day were sold out long ago. All flights from Singapore to Jakarta are overbooked for weeks to come. Now, everyone wants to get back to Indonesia and begin working. Most of the travelers are ethnic Chinese who live in Indonesia. The Ericsson employees making the trip are an international group. All were selected from the group of 140 persons who were evacuated a week earlier. Henrik Schmidt is a Dane. David Sharp is English. Krikor Tashadian is a Lebanese-American. Alfred Ling is a Chinese from Malaysia. Derek Voight is a South African. Mats Olsson and Sam Persson are Swedes, and Graeme McCusker is Irish. McCusker is the project manager for Excelcomindo, a GSM customer. He has just recently completed two years with Ericsson. It was he who was responsible for the evacuated employees and their families during the week that they lived in the Sheraton Towers hotel in Singapore. He was also the one who "miraculously" was able to arrange for the tickets. The group, together with all the other Ericsson employees and their families who were involved, can look back on a number of dramatic days during the disturbances in Indonesia. According to official sources, the rioting cost the lives of more than 500 persons and created widespread havoc, with more than 6,000 buildings being burned or otherwise destroyed in Jakarta, a city of ten million inhabitants.

"It is extremely important that we now get going quickly," Mats Olsson says. "Every working day lost means additional losses for our customers and us."

Mats is careful to point out that all the "selected" employees are returning to Indonesia voluntarily. No one is being forced to go. However, based on the available information, the situation is now in the process of being stabilized since the new president, Habibie, has been appointed.

THORD ANDERSSON

Farsighted crisis plan

More than a year ago the Ericsson team in Indonesia developed a well-thought-out organization structure to handle risks in the event personnel might have to be evacuated. It is known as the Emergency Communications Structure.

Five key persons – Mats Olsson, Victor Manoe, Graeme McCusker, Trikor Tashadian and Vijay Gajria – constituted the core of this structure in connection with the recent evacuation. Each was responsible for contacting and maintaining a communications chain with a certain number of employees and their families if an emergency arose. Everything was based on all the persons involved having mobile telephones in addition to conventional telephones in their homes. When the situation in Indonesia became intolerable and the Emergency Communications Structure was activated, everything functioned perfectly, without a single incident. Of the half dozen mobile telephone networks in Jakarta, the one built by Ericsson for Excelcomindo functioned the best during the crisis days. Another fortunate circumstance was that the Indonesian company had continuous access to information available in the Edacs system that Ericsson had delivered to the police authorities last year.

THORD ANDERSSON

The riots started at the university in Jakarta and then spread rapidly throughout the city. A large number of fires broke out and the situation was chaotic.

Expensive crisis for Ericsson

■ Ericsson Indonesia had invoiced sales of SEK 1.9 billion in 1997 and as of April 1 this year had 470 employees, including 50 foreigners serving on a contract basis. Mats Olsson has been manager of the company since January 1, 1996.

As a consequence of the economic crisis in Indonesia, total invoicing will amount to less than one billion kronor. Indonesia is one of Ericsson's largest markets for the DRA 1900 system for cordless radio access in fixed-wire networks. The company has 25 percent of the market for mobile telephony infrastructure and is the leader – with a share in excess of 50 percent – in the market for mobile telephones. In addition to the head office in Jakarta there are branches in Semarang, Medan, Surabaya and Bandung.

Ericsson helps create cordless standard

Ericsson together with Nokia, Intel, IBM and Toshiba, has created a standard for cordless communications between mobile telephones, portable computers and other electronic equipment.

By means of the technology, which is known as Bluetooth, voice and data is transmitted rapidly and simply between a number of products that are close to each other without having to connect them with cords. The technology will gradually replace the infrared-link data-transmission system that is now on the market. With Bluetooth it will be possible to send voice, data and text from a portable computer via the instrument's mobile telephone, whether it is in one's pocket or briefcase.

The cordless communications will enable a person to surf the Internet on his or her portable computer and receive e-mail directly via the mobile telephone. At conferences, for example, participants who have portable computers will be able to send information to each other. Similarly, addresses and notes on important meetings can be downloaded from a notebook to one's PC completely automatically. It will also be possible to use cordless headsets.

Initially, Bluetooth will be an effective tool for business people. But Anders Edlund, who is responsible for marketing Bluetooth, thinks that the product will very soon have a broad spectrum of application areas. For example, it will be possible for vacationers to send holiday pictures to the folks back home without having to connect the camera to the computer with a lot of cords.

User-friendly

"Our guiding principle has been that it should be easy to use the function," Anders Edlund says. "In this area and others, Intel's and IBM's participation was important."

No cords are required. Bluetooth is a radio module, a 9x9mm microchip, with a transmission range of approximately 10 meters (100 meters with a power amplifier) and can quickly transmit both voice and data. Since it is small, requires a small amount of power and probably will not cost more than SEK 50 in the future, the companies participating in the project figure that it should be possible to install Bluetooth in many different types of electrical equipment.

The infrared link used for the transmission of data that is now on the market will continue to "hang on" for a while. Gradually, however, there will be a changeover to Bluetooth. Bluetooth will operate in the "free" 2.45 GHz ISM band which has a broad range of uses. It will be possible to use the technology during trips, but not yet in aircraft.

Global standard

Ericsson and Nokia had both developed similar technologies when they concluded that it would be more effective for companies as well as consumers to have a broad global standard. The technology that is now being developed conforms with Ericsson's basic concept. By attempting to establish an international standard and by not requiring royalties from the companies that were invited to participate, the "initiators" believe that Bluetooth will quickly gain wide acceptance. A number of companies – including 3Com, Compaq, Dell, Lucent and Motorola – have already signed up.

The first products incorporating Bluetooth are expected to be on the market during the autumn of 1999 and Bluetooth will gradually be installed as standard equipment in many products made by the participating companies.

GISELA ZEIME

■ For additional information on Bluetooth, visit the Web site: www.bluetooth.com

With the new Bluetooth technology it is possible to transmit data between products without connecting them with cords. For example, vacationers can send pictures from a digital camera directly to friends with a home computer.

Bluetooth a unique product launch on three continents

Ericsson Mobile Communications is accustomed to trying new approaches. But did the cooperation with its competitor Nokia and the launching of a new technology simultaneously in three parts of the world involve any problems?

The press relations and public relations planning for the introduction of Bluetooth were new to Ericsson. In order to get the most out of the introduction and to project the most important message to the media, Ericsson and the other companies named above arranged press conferences in London, Tokyo and San José (California) – all three of them within less than 24 hours. Even if news travels fast around the globe these days via news agencies, television chains and the Internet, personal communications is still hard to beat.

The crème de la crème of London society mingle with "wannabees" in the ultra-hip Mezzo restaurant in the British capital. On May 20, Johan Siberg stood among trendy Conran-designed aluminum chairs and a bright, mosaic-decorated bar and made himself heard during the European launch of Bluetooth.

Impact on media

More than 100 journalists asked questions and jotted notes diligently during the hour-long press conference that had an impact on the media and securities analysts only a few minutes later.

The objective of the initial stage of the public relations activities is to get more companies to adopt the Bluetooth standard. In this way Ericsson wants to quickly establish a standard that will benefit consumers by enabling their electronic machines to communicate with each other, regardless of the brand name on the products.

In San José later the same day, tired eyes were rubbed awake for a presentation of the same news at the exclusive Fairmont Hotel, with Intel supplying the main speakers.

No comment

The launch in Japan took place a few hours later in the Otemachi First Square West Tower in the center of Tokyo's most hectic business district. Mats Lundoff, from Ericsson Mobile Communications in Lund, carried the Bluetooth message there.

Hard work on the part of Ericsson, the Edelman public relations agency and the other Bluetooth companies preceded these press conferences.

Johan Siberg carried out the Bluetooth-message.

As soon as the invitations had been issued, the telephones began to ring in the various Ericsson information departments. Journalists wanted the "scoop" in advance. Financial analysts wanted to know how the news would affect the price of Ericsson's shares. All received the same answer: "No comment."

Because of stock exchange regulations, and also in order to maintain interest in the press conferences, no information could be released before the first meeting with the media. Despite precautions, there were leaks – and parts of the story could be read on the Internet pages of various newspapers. But no real damage was done and there was tremendous interest in the press conferences.

A lot of press

Plans for interviews were made several days before the introduction. News agencies such as Reuters and TT (Sweden) were able to join with publications such as Der Spiegel, Dagens Nyheter, PC Week and Financial Times, as well as such TV channels as BBC and Sky News.

One hundred journalists attended the Tokyo press conference and there were 70 at the conference in San José. In terms of PR, the conferences were highly successful. It is still too early to predict what the practical results of these major efforts will be. It is very difficult to evaluate public relations activities effectively. One can always measure column inches of space in publications, but this does not provide an accurate measure.

We will be able to say that we are pleased if the articles in the media are favorable and if the securities analysts and the industry view the technology positively.

Successful introduction

The introduction was successful thanks to cooperation, a new approach and a desire to make everything work.

And when the journalists left the press conferences, they carried with them a one-pound rune stone with an engraving showing Harald Bluetooth (a mythical Nordic character) holding a portable computer in one hand and a mobile telephone in the other.

PETER BODOR

New local company started in Sweden

Ericsson is forming a new local company in Sweden on July 1. The company will be responsible for dealings with Telia and other companies within the country.
"By establishing a Swedish company, we become a more identifiable and stronger supplier to the operators in Sweden," says Ingemar Nilsson, newly appointed manager of the new company, Ericsson Sverige AB.

Ingemar Nilsson will be the manager of the new company, Ericsson Sverige AB. He is currently manager of the Public Networks unit within the Infocom Systems Business Area.

"The new company will be able to offer total solutions for both fixed-wire and mobile telephony," he points out. "With the increasing competition, it is important to focus on customers and we can do this better if we tackle the Swedish market with a more sharply oriented organization. Sweden is one of the most deregulated and dynamic markets in the world."

Closer cooperation

In the initial stage personnel for the new company will come from the Ericsson Telecom and Ericsson Radio Systems units that are active in the Swedish market. With the new company, Ericsson hope to be able to strengthen its position not only in Sweden but throughout the Nordic region as a result of closer cooperation among the various local companies. Ingemar Nilsson is looking forward to his new assignment.

"It will be an exciting challenge to help increase Ericsson's business in Sweden," he says.

Very exciting

"Moreover, it will be stimulating to establish something new, especially when we have so many skilled employees from both Ericsson Radio Systems and Ericsson Telecom with whom to build."

The work of forming the new company is by no means complete.

A number of questions remain to be solved and this will be done jointly with the employees. Additional information will be released on a continuing basis and as quickly as possible.

MIA WIDELL ÖRNUNG

Datacom management to Boston

Michael Thurk of Boston, Massachusetts in the United States will be the new manager of the business unit in which the greater part of Ericsson's investments in Internet Protocol-based multimedia communications are being made. At the same time, the management of the Infocom Systems Business Area has decided to move the management of Data Networks and IP Services to Boston, on the northeastern coast of the U.S.

"For anyone who really wants to understand and succeed in the data communications field it is essential to have a presence in the U.S.," says Anders Igel, Executive Vice President, Infocom Systems.

"Moving the management functions of the business unit to Boston is a first step. We will take a closer look at the scope and timetable for this move during the summer."

Experience required

The search for the right persons to head the business unit has been under way for some time.

It was clear to Anders Igel at an early stage that a person with substantial experience in the U.S. and in the data communications industry was required for this position.

The fact that he has now hired an American thus does not come as any surprise.

"Michael Thurk has precisely the expertise and experience we want," Anders Igel says.

Happy with the choice

"I am delighted to be able to welcome him to Ericsson. Michael has solid background and experience in data communications that will be very valuable to us. This applies in particular to his combination of experience and knowledge with respect to both voice and data communications", says Anders Igel.

A strengthened position

With Michael Thurk in place, Data Networks and IP Services can now begin in earnest to strengthen its presence in the American market.

Michael Thurk has earlier held senior managerial positions with some of the leading data communications suppliers in the U.S. He was Executive Vice President – Marketing and Service at General Datacom for two years. Earlier he had been at Digital Equipment for 14 years, as manager of substantial parts of the company's operations in the telecommunications field, among other responsibilities. His most recent position was as manager of Xyplex Networks, an American company that develops and markets data network equipment.

LENA WIDEGREN

Rave reviews for Marie Antoinette

"One of the most fascinating musical theater presentations I have seen in a long time." "Overwhelming." "A highlight of the festival."

Enthusiastic critics heaped superlatives over the Stockholm Folk Opera's presentation of Marie Antoinette at the Brighton Festival in May. The performance is sponsored by Ericsson. Composer Daniel Börts was lauded for his musical score, which was described as intensively exciting and sensuous. Charismatic and convincing were the words of praise used to describe the performances of Olle Persson as Fersen and Katarina Nilsson as Marie Antoinette. Even the set was praised. "The Folk Opera's reputation as one of Europe's best operatic ensembles is very well-deserved," wrote one critic.

The performance played to 50 sell-out audiences in Stockholm before starting its European tour, which includes performances in Copenhagen and Lisbon as well as Brighton. Ericsson has sponsored the Stockholm Folk Opera for many years and is providing financial support for the Marie Antoinette tour.

in brief

New web site for insurance policies

■ Ericsson has opened a new web site on the intranet where employees can obtain the latest information on insurance policies. As an Ericsson employee in Sweden you are covered by a number of policies. There are those that the Company has provided for its employees – covering accidents on the job, for example, or offering special protection during trips on Ericsson business. There are also a number of coverages that you can purchase at a discount.

You can already get a discount on homeowners' comprehensive insurance offered by Skandia. Soon you will find in your mailbox an offer of a private pension insurance policy from the SPP Insurance Company. Ericsson and SPP have negotiated a favorable agreement.

On the web page dealing with insurance policies there are also direct links to the insurance companies' web sites, enabling you to check to be sure that all information is updated. The web site address is: www.lme.ericsson.se/lmet/forsakring.

Agreement with Rogers Cantel

■ Ericsson and Rogers Cantel Inc. in Canada have signed a new three-year supply agreement at an estimated value of SEK 1,600 million (USD 210 million). Within the framework of the agreement Ericsson will continue to be the primary supplier of infrastructure and services for the D-AMPS IS-136 wireless network operated by Rogers Cantel in Canada. Terms of the contract include a provision whereby it can be extended for a period of up to two years.

Breakthrough for AXE in Iran

■ Ericsson has been awarded its first AXE contract in Iran. The contract, valued at approximately SEK 346 million (USD 45 million), covers equipment purchased by Telecommunications Company of Iran (TCI) and which is to be installed in Teheran during 1998 and 1999.

In addition to AXE equipment, the contract covers training, the transfer of technology and the establishment of repair and support centers.

Large software company

■ A merger of Ericsson Software Technology in Karlskrona, Sweden and the Ericsson Application Center in Linköping, Sweden has created a new, leading-edge software company within the telecom industry. The new Ericsson Software Technology is an exciting company that will work with the latest software technology to develop products and services within mobile telephony, business communication, and software technology. For the mobile telephony area, the company will have comprehensive know-how in radio network control, switching, and value-added applications.

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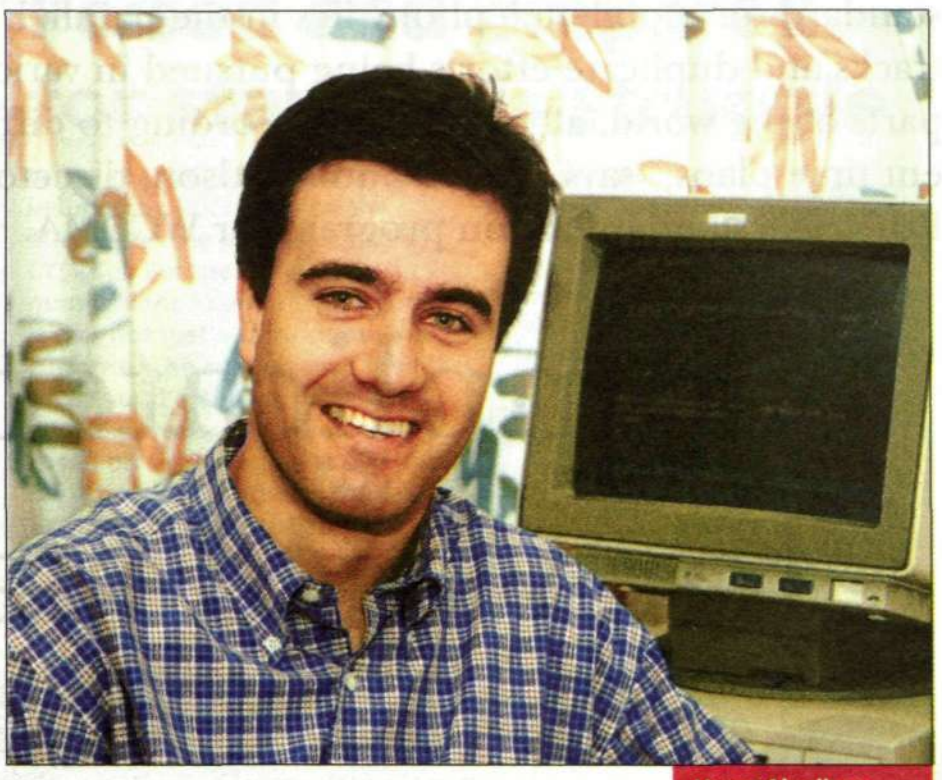
ERICSSON

portrait

"Ericsson is the place to be if you want to work with the latest technology." This is an opinion held by Vasco Alpalhao of Ericsson Telecomunicaçoes, Lda in Lisbon, Portugal, who works in the company's mobile telephony field support center.

Vasco helps customers night and day



Vasco Alpalhao works at the field support center for mobile telephony at Ericsson Telecomunicaçoes, Lda in Lisbon. He feels it's a very good job, especially if you're single.
Photo: GUNILLA TAMM

Vasco began working for Ericsson three years ago, having previously worked for a telecom operator.

"There are many young people and we work well together and form a good team," he says. Prior to his last work he was a student at the university and completed his military service.

"Here in Portugal, most people within the telecom industry know each other, and many of my fellow students started working for Ericsson right after they graduated. The company has also become well known to the general public through its highly popular mobile telephones. When friends of mine working at Ericsson encouraged me to apply for a job, I responded to a job ad, and have not regretted doing so," says Vasco with conviction.

Soon after he was hired, he went to Sweden for two months of training. "And that was in the middle of the winter," he adds.

His job with field support has involved a great deal of travel within Portugal. There have also been shorter business trips to Spain, Germany and the U.K.

When asked whether he would like to work abroad for a longer period of time, he responded by saying that he would like to learn more first, before he would feel ready for that.

"But," he said thoughtfully, "if I were to take an overseas job, it would probably be for a shorter period of time. We Portuguese enjoy traveling abroad, but we always like to return home. Look at the Portuguese explorers who ventured out to sea in order to discover new lands, they eventually came home."

On-call service

The field support center is open 24 hours a day, all year long, which means that sometimes Vasco is on-call. Should a problem arise during non-working hours, it is usually solved using a temporary solution and is permanently fixed during the week. Currently, there are ten people working in the field support center, although that number will increase to 15 this autumn.

Always a lot to do

Vasco works in the field support section that services the GSM operators, Telecel and TMN, and he works closely with the Telecel technicians. Like the competing GSM network at TMN (which is also an Ericsson customer), the network functions very well and the number of subscribers is rapidly increasing. That means a lot of work for Vasco and his colleagues.

"We work overtime quite a bit, especially when new releases come out," he explains. At the same time, he adds, he can envision working overtime for a few years. "That works out fine as long as I'm a bachelor."

He also thinks that he has an interesting job since he is able to work with the latest technology, and he always feels as though he is learning something new. The fact that there are opportunities to advance within Ericsson is also stimulating.

Vasco lives close to the Lisbon airport and drives a car to work. Even if the distance is not that far, the commute takes time since the construction of a new bridge has affected traffic. A few weeks ago, however, the new bridge was inaugurated and now his drive to work is faster thanks to Europe's longest bridge, Ponte Vasco da Gama.

Still time for leisure

Even though Vasco works overtime, he has time for some leisure activities. He plays soccer with his old school buddies and he also likes to read. He also makes time for cycling, his main hobby, although he does not have as much time for that now as he used to.

On weekends, he enjoys relaxing on the beach and during vacations he likes to travel around the country. "After having experienced a Swedish winter, I understand why Swedes enjoy the culture and the sun in Portugal," he laughs.

GUNILLA TAMM

Smart system will sell more enterprise networks

SolveIT is a new modular support system for simpler and more effective direct sales of products and solutions from the Enterprise Networks business unit.

"This solution has been eagerly awaited by local companies and our mega-distributors," says Lars Wennerholm, manager of the SolveIT development project.

"The entire sales process can now be handled in a single environment," he continues, citing Ericsson's subsidiary in the U.K. as a good example. "Until now, the company has used 13 different PC tools to configure a single solution. In one fell swoop, SolveIT replaces all of them."

Many possible combinations

The system consists of several sub-programs for configuration, pricing and currency management, offers, final pricing, customer data and product information – all completely integrated with a user-friendly Windows interface. In a normal situation, the user links with a central server, but parts of SolveIT can also be downloaded into portable computers for field work, for example, during visits to customer installations. The business unit's product portfolio offers a virtually unlimited number of possible combinations in a customer-adapted communication system, with particularly strong emphasis on the flagship MD 110. To meet specific customer requirements, a great deal of work and calculations have always been involved in proposals and pricing for solutions to MD 110 systems and other important components in an enterprise network, most of which was done manually.

SolveIT does all the work today. The salesperson only needs to punch in the customer's functionality requirements. Using basic functionality specifications, the system produces technical descriptions and price proposals. For all intents and purposes, the configuration unit is the same as the unit used by the Public Networks business area to configure AXE switching systems, and offers another simplification for local companies. SolveIT also features interface with the SAP R/3 business support system and several other systems at Enterprise Networks and other business units.

Demands from sales personnel

"Our unit and the entire business area has focused on the objective to streamline and enhance the efficiency of all our processes," explains Lars Wennerholm. "As part of ongoing Trim 98 efforts to reduce unnecessary costs, systems like SolveIT represent excellent tools now being made available to achieve desired results."

Its timing with Trim 98 notwithstanding, the finished version of SolveIT required a few years of hard work in the development stage before it was ready for flight. The project was started in 1995 after a meticulous analysis of what was actually needed. Sales personnel were questioned in all parts of the world. The guiding light was Ericsson's objective to base the system exclusively on specifications of user needs. And for that reason, SolveIT has all the prerequisites to function and perform as intended. One and the same environment means just that. The system unites users who were generally isolated from each other in the past. Sales personnel, engineers and marketing managers are all able to access the same information and, based on their respective roles in the sales process, produce offers for customers.

"SolveIT gives us the opportunity to do more in less time," Lars Wennerholm says. "But we also have to implement a true process of change in parallel with the creation of new operating conditions. We are now making comprehensive investments in skills and expertise, accordingly, in preparation for the introduction of SolveIT. Efforts are also being made to further improve system efficiency.

KARI MALMSTRÖM

"The biggest problem in our quest to create a world standard for mobile telephony lies in the parallel tracks and duplicate efforts being pursued in various parts of the world, all conducted according to different time plans," says Mikael Gudmundson, director of Ericsson's standardization program for WCDMA.

Complicated quest for world standard

Attempts by ITU, the International Telecommunications Union, to create a global standard for the next generation of mobile telephony have now entered a critical phase. In June, ITU will begin accepting proposals from Europe, the U.S. and Japan, among other world regions. The proposals are scheduled for evaluation in the autumn.

"We're not quite sure what happens after that," Mikael Gudmundson continues, "but an important element of ITU, a United Nations organization with members from different countries, is that it has set a deadline and established certain requirements that must be fulfilled. With a mandate limited to issuing recommendations, however, the ITU is not authorized to prescribe standards."

Favorable position for WCDMA

The broadband WCDMA solution for the next generation of mobile telephony now under development by Ericsson has widespread support in all parts of the world.

In the beginning of 1998, ETSI, the European Telecommunications Standards Institute, voted in favor of the WCDMA proposal submitted by Ericsson and Nokia. ETSI's decision also includes a TDD mode (Time Division Duplex) for DECT-related applications based on a proposal by Siemens. In all important aspects, however, WCDMA has prevailed.

Efforts started long ago

ARIB, the Japanese standardization authority for radio issues, has already endorsed WCDMA (which is basically the same as Ericsson's solution) as the access method for the next generation of broadband networks. Of the four American proposals expected to be submitted to ITU, two support WCDMA and one is a broadband variation of today's narrowband IS-95 system.

Efforts to formulate a world standard were started about 10 years ago. ETSI has worked with the European UMTS solution (Universal Mobile Telephone System) since 1990, and Ericsson has participated in a number of projects.

Various system solutions were presented in December 1996 at a workshop organized by SMG2, a standardization group that works with GSM and UMTS standardization. (SMG subgroups of SMG2 are responsible for radio issues.)

During the first half of 1997, five concept groups were formed: Alpha, Beta, Gamma, Delta and Epsilon. The strongest groups were Alpha, working with WCDMA supported by Ericsson, Nokia and Japanese manufacturers, and Delta, which endorses a TD-CDMA solution supported by Siemens, Nortel, Motorola, Sony and other companies. Gamma, with Nokia's broadband, 1.6 MHz TDMA solution, also advanced to the final ballot.

"At the end of June 1997, there were 4–5 different WCDMA concepts. In September, however, the Alpha Group held a critical meeting," explains Mikael Gudmundson, Chairman of the Group. After the meeting, the Alpha Group agreed on a single WCDMA solution. Shortly after the meeting, ARIB announced certain changes in its WCDMA proposal, which virtually unified the two WCDMA proposals.

Coordination required

Highly intensive work efforts are now being expended within the SMG groups. By yearend 1998, a finished and complete description of UTRA is scheduled for release. The report will not be restricted to radio, but will include all interfaces within UTRA and even the interface with the GSM core network, the Internet and others. The highly detailed description will then be upgraded and, one year later, in December 1999, it is scheduled for development into a full-fledged technical specification.

"The problem is that duplicate work is being conducted in different places," continues Mikael Gudmundson. "ARIB of Japan has set a deadline of March/April 1999 for completion of its finished specification, and a great deal of coordination will be required."

According to Mikael Gudmundson, the manufacturing equipment industry, spearheaded by Ericsson and Nokia, has assumed a highly active profile in the standardization work. Their efforts are in sharp contrast to the days when GSM was specified, and telecom operators exercised the most influence over development.

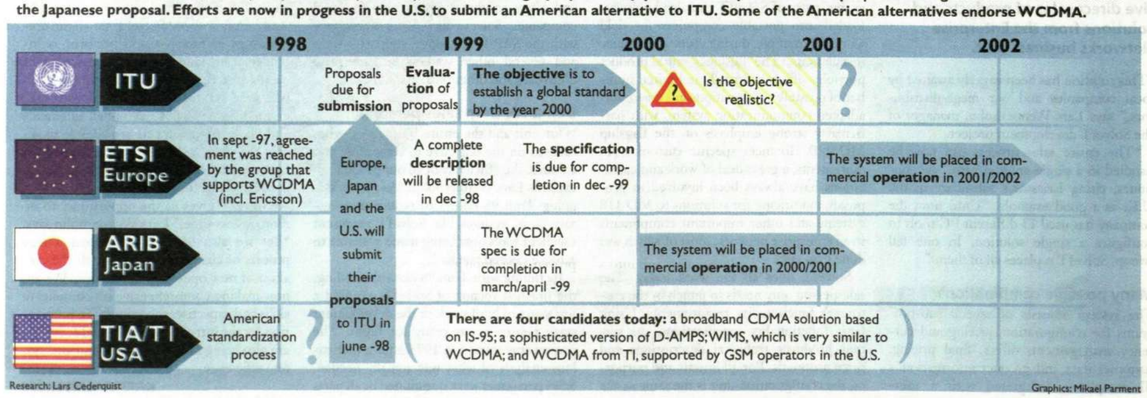
LARS CEDERQUIST

Work efforts to formulate the new WCDMA standard have now entered a highly intensive phase for Mikael Gudmundson, Ericsson's representative in the standardization group.

Photo: KURT JOHANSSON

Will WCDMA be adopted as the world standard for radio units of third-generation mobile telephony?

Progress toward the establishment of a world standard has taken different paths. ITU, the International Telecommunications Union of the United Nations, **is trying to create a global standard for the 2GHz band. ETSI,** the European Telecommunications Standards Institute, **is working on the development of a European standard and Japanese standardization authorities, ARIB** (radio) **and TTC** (networks), **are formulating a proposal for Japan. The European WCDMA proposal has a great deal in common with the Japanese proposal. Efforts are now in progress in the U.S. to submit an American alternative to ITU. Some of the American alternatives endorse WCDMA.**



Research: Lars Cederquist

Graphics: Mikael Parment

Poised and prepared for standards struggle

When the WCDMA solution developed by Ericsson won the European vote of confidence by ETSI, the European Telecommunications Standards Institute, it was not just a coincidental occurrence. The success was based on a sound technical solution and comprehensive research focused on assuming an active role in setting standards for third-generation mobile telephony.

Gustav Brismark.

RCUR, the central research and development unit of Ericsson's Mobile Systems business area, is a highly qualified source of new technology. With its staff of some 200 men and women, RCUR has access to sophisticated skills and expertise in all areas of radio systems, as well as total systems know-how, a unique combination in the mobile world. The research unit also makes determined efforts to establish new standards, with a record of particularly successful results in the field of digital mobile telephone standards.

"We have never lost a battle over new standards," says Gustav Brismark, who manages RCUR research in radio access and antenna systems. "Our success is based on early entry into new fields of endeavor, both in terms of various standardization authorities and international programs of research cooperation. As a result, we are very well-prepared when we reach the actual standardization process," Mr. Brismark continues.

Active participation in the establishment of new standards is a key issue today, and one of the most important tasks performed by RCUR. Successful standardization work provides a company with technological advantages that can be decisive when new business opportunities arise. Efforts to establish a new standard are conducted on two fronts, one of which is the external approach through participation in various standardization organizations and meetings, with the other involving active roles in projects that support Ericsson's efforts back home. A few key persons take part in the standardization meetings, which require a certain authoritative "presence," a sense that our representatives are knowledgeable and continuously monitor new development trends. On the home front, priority resources are allocated for various projects designed to provide the entire process with the right timing.

"Until now, we have worked mainly with large, digital mobile telephone systems, but we are now trying to depart from our strict-focus approach," Gustav Brismark continues, referring to two interesting new areas – Wireless Local Loop and Wireless LAN.

Compromise solution by ETSI

The solution chosen by ETSI, the European Telecommunications Standards Institute, for the next generation of mobile telephony is considered a compromise between proposals submitted by Ericsson/Nokia and Siemens.

"The standardization group has successfully harmonized parameters between the two solutions," says Erik Dahlman of RCUR, the research and development unit of Ericsson's Mobile Systems business area.

UMTS, Universal Mobile Telephone System, is the European designation for the next generation of mobile telephone systems, which will also accommodate multimedia and high-speed data transmissions. ETSI's decision at this point in the development process pertained to the UTRA radio interface (UMTS Terrestrial Radio Access, with Terrestrial indicating the exclusion of satellite communications) plus one part of the network, but not the actual switching equipment. The choice stood between Ericsson/Nokia's WCDMA proposal and the TD-CDMA proposal submitted by Siemens. The final decision was a compromise. WCDMA will be used in the paired band of the UMTS system, with TD-CDMA in the unpaired band.

Paired and unpaired bands

The "paired band" consists of two large and similar 60 MHz frequency bands (1920-1980 and 2110-2170) reserved by the International Telecommunications Union (ITU) for the next generation of mobile telephony. The bands will be used for traffic from mobile telephones to base stations and vice versa, that is, the uplink and the downlink. The technique is called Frequency Division Duplex (FDD).

The "unpaired band" comprises two small 20 and 15 MHz bands (1900-20 and 2010-25) reserved for DECT-related systems, whereby a frequency band can be divided into uplink and downlink time slots (TDD, Time Division Duplex). Bandwidth utilization can be adapted to specific requirements that may include several time slots, for example, or more capacity, for downlinks, which is more appropriate for Internet communications, for example, since most users download more information than they send.

Originally, Ericsson/Nokia and Siemens both proposed the FDD technique in their solutions, but the final result became the solutions described above. The key element now is to harmonize the solutions to facilitate development of a terminal that will accommodate both FDD and TDD.

The fundamental principle of CDMA is to distinguish between calls by assigning them different codes. A large number of users will be able to transmit simultaneously on the same frequency band within the same cell, without disturbing each other's call to any significant degree. Since the receiver's code will filter and strengthen his/her own call, all other calls are heard as a form of background noise. The more simultaneous calls, the stronger the noise.

CDMA operators will be able to use a single frequency in all cells, thereby eliminating the need for frequency planning in their networks, a requirement for TDMA operators that divide their spectrum into a large number of frequency channels at appropriate distances from each other in the network. As a result, a CDMA system operating at normal 2x15 MHz is able to use a single frequency band, f1, at 2x5 MHz (to and from the radio base) in all cells and then add additional 2x5 MHz, f2, as required. Alternatively, a hierarchical system can be built with f1 in all microcells and f2 in a larger macrocell to which covers all microcells without disturbing communication in the cells.

Facilitates transmission

The main advantage of a broader channel (5 MHz in WCDMA) is that it facilitates transmission of more information per second. The broader channel also reduces fading, since the fading factor is distributed over the entire frequency band, which also reduces the risk of poor quality over the entire carrier wave. Cost is another advantage of broadband, since it's cheaper for more users to share the same radio equipment.

Some of the main questions surrounding UTRA deal with the creation of high capacity and quality as well as effective handover solutions (mobile transfers between two radio base stations or two frequencies). The capacity question is a matter of establishing acceptable quality for as many users as possible. Theoretically, about 250 voice calls can be accommodated in a single cell, but slightly more than 100 is more realistic. When the users in a CDMA system are widely dispersed within and between the cells, they create minimal disturbances to each other's calls. Sophisticated control algorithms are required to determine if the system should allow access to more users within a given sector, and development work is continuing in efforts to achieve improved utilization of the frequency spectrum. As opposed to the narrowband IS-95, which deals mainly with voice services, UTRA will also offer multimedia, a service that requires more capacity per user.

The WCDMA system uses so-called soft handover, whereby the mobile is transferred from one base station to another while connected to both stations, which eliminates the risk of interruption. Users might also have to change between different frequency bands, interfrequency handover, when they move around in a hierarchic system, for example. The CDMA system, however, transmits uninterrupted signals without any time slots, as in GSM, which allows scanning of other frequencies during seven-eighths of the time.

"To resolve the situation, we have introduced what we call a slotted mode in our system," Erik Dahlman explains. "Normally, we use 10 m/sec-frames, but they can be pressed together in compressed mode to about 5 m/sec-frames, which allows us to make interfrequency measurements in the available slots created by compressed mode. The idea was originally spawned during the CODIT project we conducted in the beginning of our WCDMA research, and we now have a patent on the concept."

The technique can also be used for measurements in comparison with GSM, which makes it possible to migrate WCDMA in GSM networks.

LARS CEDERQUIST

CDMA and TDMA

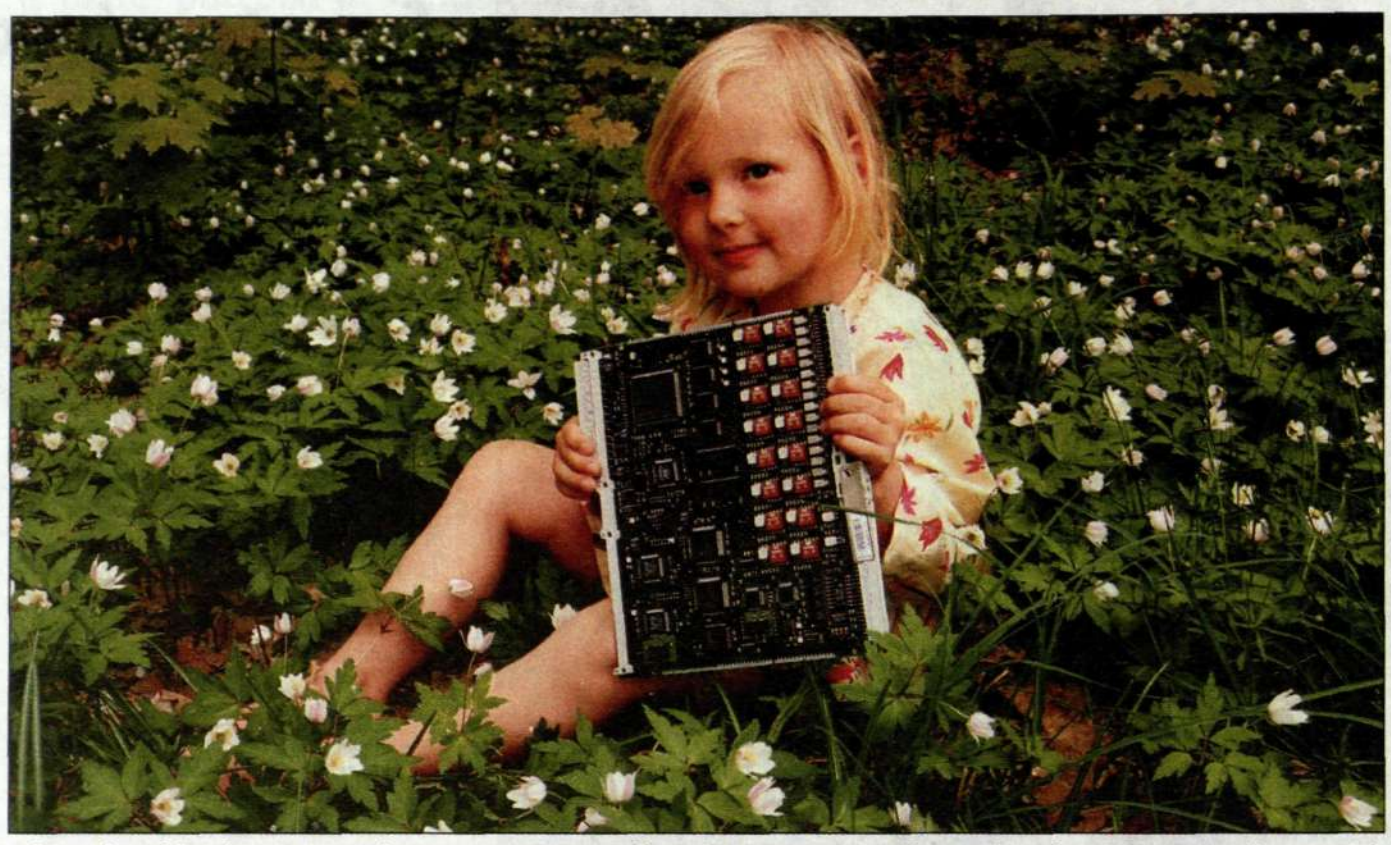
■ CDMA stands for Code Division Multiple Access, and TDMA is the acronym for Time Division Multiple Access. They are both access methods for radio transmissions between local networks and individual mobile telephone users. WCDMA stands for Wideband-CDMA, which uses a broader channel. TD-CDMA is a hybrid of CDMA and TDMA.

Even greener exchange developed

Efforts are continuing to make Ericsson's MD 110 business exchange more environmentally compatible. By year-end 1999, the company's goal is to reduce the exchange's environmental impact by 50 percent, compared with 1996.

The work involves much more than reducing the amount of scrap materials. Called the Factor 2 project, it is based on a concept referred to as "from the mine to the graveyard". Every constituent element of the MD 110 – from raw materials extraction to processing, supplier and proprietary production processes, the user phase and final handling – will be subject to Life Cycle Analyses (LCA).

"If we want to market our environmental work in an acceptable manner, we have to quantify our efforts. Life Cycle Analyses provide us with the facts we need to implement required environmental measures," says Lars Lenell, who is managing the Factor 2 project, which is a part of the R&D work by the Enterprise Networks business unit.



Ericsson is making the MD 110 exchange a "greener" product. The company's goal is to reduce the exchange's environmental impact by 50 percent.
Photo: THORD ANDERSSON

Bar at the right level

"During the course of this project, we have no intentions of comparing our efforts with other companies; instead, we shall make comparisons with ourselves. We want to position the bar at a level over which we are able to jump, quite simply. The most concrete aspects of our efforts, and the area in which we stand to make our greatest environmental gains, are focused on reducing materials, mass and power output, thereby reducing energy consumption during operations," Mr. Lenell continues, adding that comparisons of PBX models between 1996 and 1999 are not truly relevant.

The model introduced in 1996 was a wired standard switch that required peripheral equipment connections to provide mobility, for example.

Three years later, Ericsson believes a standard switch will consist of about 50 percent cordless connections from its inception. New solutions have made it possible to integrate more functionality on circuit boards, leading to a sharp decline in materials consumption.

The holistic perspective of Factor 2 will make Ericsson a bona fide pioneer in its environmental pursuits.

Several of the planned Life Cycle Analyses under development in cooperation with Chalmers Industrial Technology in Gothenburg are embarking on virtually uncharted courses of virgin research.

Substantial amounts of data are available for studies of raw materials recovery and recycling, but what happens to the raw materials when they arrive at a components factory? What liquids, chemicals and processes are used to produce an integrated circuit board, for example? How much energy is consumed and what sort of waste products are left behind?

Although the finished circuit board may be environmentally compatible, perhaps the road to completion is littered with waste. In a mechanical component, on the other hand, such as profiled sheet, the environmental impact lies in the material, while the production process has only negligible effects on the environment.

Clearly defined requirements

"A major challenge is to close 'the life cycle loop,' without overlooking the final handling phase," Lars Lenell explains. He also points to producer liability, whereby the party that sells the product must also assume responsibility for handling discarded products, a concept that is gaining more widespread acceptance today after a rather shaky start. Within the next two years, producer liability will be endorsed as an EU requirement. It would behoove all manufacturers to be prepared.

"It's an important plus to work with clearly defined requirements. We already have new solutions for circuit boards without brominated flame retardants, as well as PVC-free alternatives in our cable production operations. They are still more expensive than traditional materials, but it's actually a question of volume. If the authorities and our customers demand more environmentally compatible alternatives, volumes will rise and prices will fall," Lars Lenell explains.

In parallel with the Factor 2 project, he is also working full-time to spread the environmental philosophy through his business unit. Present efforts to make the MD 110 exchange a "greener" product will eventually generate similar effects on other Ericsson products.

KARI MALMSTRÖM

Support center helps customers round the clock

"Working here takes a desire to find the solution, no matter how many calls or how much time it takes. It's satisfying customers whatever and wherever they may be."

Meet Robert Preston, a Texan from the United States, currently on duty at the Global Response Center (GRC) in Rijen, the Netherlands. Robert and the group he works with are among Ericsson's elite in the world of customer support for Ericsson Telecom. As Ericsson's product portfolio grows, support centers have an increasingly important function. Operations are now being expanded and more personnel is needed.

On the front lines

Today, Robert is working in the front office where calls for support first come in from Ericsson's local markets all over the world. Here most problems are handled within half an hour. If that is not possible, then the problem is sent to the back office to the technical experts.

"In the front office, a broad knowledge of Ericsson's products is required as we have to know what the customer is talking about when he calls" says Robert. "If we cannot handle the situation ourselves, then we find someone who can."

Robert, who has been five months in Rijen, thinks that working at the GRC fits perfectly with his skills and personality.

"It's no doubt a challenge. Today's switching systems are so complex that one really needs to know Ericsson to be able to work here. This type of job is perfect for me as I personally like to do research and to search for solutions to problems. In addition, the GRC is definitely a fast-moving area and one where the same problem is seldom presents itself twice in a given month."

Robert deals with the Ericsson local support organizations. The three GRC hubs in Rijen, the Netherlands; Melbourne, Australia; and Dallas, Texas are on a "follow-the-sun operation" – as one closes down, and the other opens. So sometimes people are surprised they end up in the Netherlands when they thought they were calling somewhere else. In this case, Robert is referring to a caller from Malaysia who he spoke with during our interview. She thought she was dialing Australia.

Robert Preston is among Ericsson's elite in customer support.
Photo: MICHAEL NOTRICA

"We get the chance to speak with customers all over the globe, since we provide after-hours support for the rest of the world outside Europe. We also catch a bit of the overlap from the Far East here in the Netherlands. Because we have three hubs, we can work during daytime hours which is nice."

Solitary endeavor

While working as a trouble shooter is a fairly solitary endeavor, Robert says teamwork really comes into play during an emergency. "If you have a situation in which you need an immediate resolution, then the team can come together and do that."

He continues: "You meet a lot of people in this job and if someone has the knowledge or is more experienced in an area then I like to know that myself. Conversely if you have extra knowledge yourself then it is good to be able to share it with others."

This includes being at the forefront of Ericsson's global activities, though Robert says that as support, one is always slightly reactive since one is not involved at the beginning of any technology. But he says with a laugh, "But you are introduced to it quite rapidly and once it is released it can be quite exciting."

The Rijen Netherlands GRC day comes to a close and the lines are handed over to Dallas Texas. Robert still sits at the telephone working on a "call echo canceling" problem. He has been trying to solve this for quite a while, making calls to find the right persons to assist him – not an easy task on May 1st, when much of Europe is on holiday. But with calm determination he makes call after call, searching for the missing piece of the puzzle. Even as the day ends and this reporter is leaving, Robert is still on the phone not giving up.

MICHAEL NOTRICA

Yovka Tepavicharova and Yassen Nikolov are two of the twenty Bulgarians working in Ericsson's Sofia office. The two young Bulgarians epitomize the policy of establishing a local presence and are living examples of the popular slogan "Think globally, act locally." That is exactly what they are doing.

Yovka Tepavicharova and Yassen Nikolov are two of the 20 Bulgarians working at Ericsson's office in Sofia. Photo: GERHARD JÖRÉN

Acting locally in Bulgaria

Ericsson in Bulgaria

■ Ericsson opened an office in Sofia, the capital of Bulgaria, in 1993. The office has a staff of 30, of whom 20 were recruited in Bulgaria.

Yassen, a warm, charming young man, is 28 years old and a customer support engineer. He studied at the Technical University in Sofia, where he specialized in switching technology. His multifaceted role at Ericsson includes customer relations, installations, testing and support.

"I enjoy the flexible operating environment. Because there are only three of us working in this office, we must be able to solve all kinds of problems, which means the hours are flexible and the job is never boring," says Yassen Nikolav.

Integration important

Yovka Tepavicharova studied at the College of Trade, Export and Marketing in Sofia and works in the department for import/export operations. The dynamic 25 year-old has worked for Ericsson for three and a half years. Her main tasks include logistics and coordinating hardware distribution.

"The work I do here is very challenging because we have no local repair facilities, which means equipment must be sent abroad. However, the customers always want everything fixed immediately," she says.

Assimilation important

Establishing a local presence means more than employing one or two local people to answer the phones and run errands. Recruiting local personnel enables an office to assimilate with the society and culture in which it is located. This is important for conducting business.

"It is important to recruit local personnel and build up a knowledge base within the country, both through training and through cooperation with the technical university in Sofia," says Roland Engman, manager of Ericsson in Bulgaria.

Like their jobs

Both Yovka and Yassen enjoy working for Ericsson and want to seize the opportunities that working for a leading multinational telecommunications company offers. They have both visited Stockholm to attend training courses and Yassen completed his basic training in Ireland. They are both keen to learn more and eagerly await new challenges.

"Working in a relatively small market like Bulgaria means that I am not exposed to the types of problems and situations that will challenge me and build confidence. I would like to work outside Bulgaria to develop my expertise in a larger telecommunications environment," Yassen says.

His sentiments are echoed by Yovka, who adds, "I would like to work for Ericsson abroad in order to gain experience and see how things work elsewhere."

NICHOLAS CLAUDE

Knowing a country's culture is important for conducting business. Therefore Ericsson in Bulgaria recruite local personnel.

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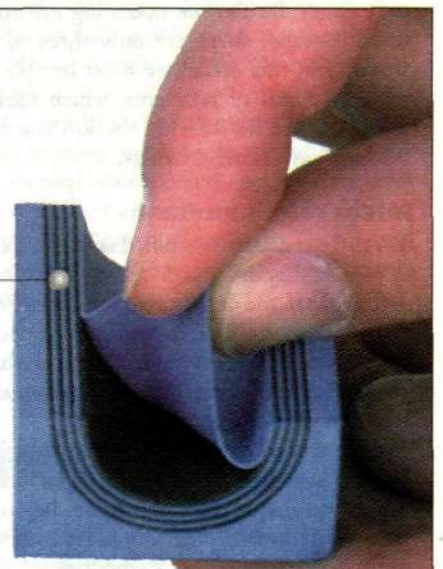

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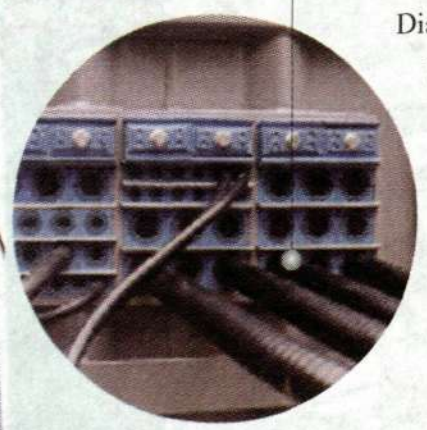

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The objective is to exercise influence. The method is based on comprehensive networks in both EU and Ericsson.

Torbjörn Ihre is the head of Ericsson's EU lobbying office in Brussels.

Ericsson's man in the EU

Ericsson's lobbying office in Brussels is located within walking distance of the European Parliament, shown in the photo above.
Photo: PATRIK LINDÉN

The office is within walking distance of the European Parliament and the EU Commission. It is centrally located in the heart of EU country, the section of Brussels that houses most of the general directorates and EU institutions.

"It's important to maintain a strong presence in Brussels; to breathe the air and live the EU life. A great deal of our work is based on personal contacts. The job simply cannot be done from a distance. Our presence here also allows entry at earlier stages of various processes. Official information channels are by no means lacking, but there is a time lag. In many cases, decisions have already been made and are difficult to influence or, at best, there is precious little time to adapt," explains Torbjörn Ihre.

He has been in Brussels since the autumn of 1996, but Ericsson has been represented in the "European capital," since 1990, long before Sweden became a member nation.

"For the most part, I deal with the EU Commission, the source of initiatives behind most decisions, although the European Parliament has become more powerful in recent years. Especially when time is a vital factor. Parliament has a tendency to take more time in reaching decisions. If you want to be positive that a bill passes without incident, it's important to know the atmosphere, the mood, that prevails in Parliament at all times."

Intimate contacts are essential for effective job performance in Brussels.

Lobbying refers to exerting organized influence on decision-makers. This lobby at the EU Commission, however, does not contain any lobbyists at the moment.

"You have to be socially outgoing, like to meet people; otherwise, it would be a difficult and boring job. You have to be able to take the initiative and not be afraid to establish and nurture contacts between people with common interests."

Torbjörn Ihre spends no more than half his working hours at the office. The rest of his time is spent nurturing contacts with people and attending meetings.

"Compared with Washington, one of my previous assignments, there is very little golf played here in Brussels. In the U.S., a golf course is considered an effective venue for establishing contacts and discussing current issues. In this respect, the culture here in Brussels is completely different."

Instead, luncheon engagements are an important forum for business discussions. The tone of conversation is often less formal, and you seldom meet with more than two or three persons. Although the tone is informal, the topic of conversation is almost always business.

Reinforced staff

"English is almost the exclusive language of EU discussions. The same is true of virtually the entire EU. Only the French have different language pursuits in certain circles."

"The language we use to communicate is not merely a matter of national pride. Everybody also wants to communicate in a language in which they are proficient, thereby not allowing themselves to be put at a disadvantage. Especially in various forms of negotiations."

An outgoing personality and a natural gift for establishing contact with other people is one thing. But it's not altogether adequate per se. Of equal importance is the need for secretaries to know each other and to get along. If secretaries are on good terms with each other, there is a greater chance that a written telephone message will be placed on top of the pile of other messages, or that your call will be connected immediately. In the past, Torbjörn Ihre was the sole occupant of Ericsson's EU office. The staff has now been reinforced to include three persons. Göran Pagels Fick, who works with research and development as well as defense and telematic issues, was added to the staff a few months ago. And in May, Marie-Christine Bracquemont moved to the Brussels office to protect Ericsson's interests in project financing and other areas. In addition to the employees, considerable demands are also placed on their spouses. Torbjörn Ihre entertains guests at home frequently, and the cooperation and assistance of his wife is extremely important.

"There is a completely different atmosphere when we entertain guests at home. Social barriers are broken more quickly and you get to know each other more personally. This was the norm in Washington, so it's probably something I picked up there," he says.

Have to know Ericsson

If the work done by Torbjörn Ihre and his colleagues' work is to be worthwhile for Ericsson, it's important that they have well-established networks within Ericsson. It helps to learn what is important in terms of business, but it also provides an effective channel for dissemination of information from the EU office.

"I travel to Stockholm twice a month, sometimes even more often. In my opinion, there is generally widespread understanding within Ericsson for our work, but it still takes time to explain clearly how the company uses the office to serve its best interests. There are many political aspects to a wide range of issues, and it would be unreasonable to expect every business area or every business unit to station its own personnel in Brussels. Some of the most politically charged issues we are dealing with right now include third-generation mobile telephony (UMTS), implementation of the liberalized market for telecommunication services and consumer guarantees.

"We are part of the Public Affairs unit, which is represented in Stockholm, Brussels and Washington, thereby providing Ericsson with three centers of power in the world," Torbjörn Ihre explains.

He regards himself as a practical diplomat. A diplomat with clearly defined objectives and stringent demands on rapid results. Ultimately, his office should contribute to Ericsson's business activities. Before joining Ericsson, Torbjörn Ihre worked as a consultant, a job that taught him to be customer-oriented; to remember who he is working for.

PATRIK LINDÉN

■ For additional information about Public Affairs, visit: http://eee.lme.ericsson.se/LMED/965073.htm. Information about EU can be accessed at: http://europa.eu.int

Ways to exercise influence

■ Placing a telephone call to a commissioner or a general director to pass on some information or ask a question is probably the most obvious example of direct lobbying. But that's not always the norm.

"My job often involves getting the right person from Ericsson to come to Brussels. I cannot be expected to serve as 'the' expert in all questions and issues. However, I am familiar with EU functionality, the ins and outs, and I can make sure the right person from Ericsson comes in contact with the right person within EU," explains Torbjörn Ihre.

There are many points of attack, many avenues. The EU Commission can be contacted directly, for example. Swedes who are employed by the Commission, however, do not look to Sweden's best interest, but rather the best interests of EU. It may be more prudent, therefore, to contact the Swedish delegation in Brussels, which is established to work on behalf of Sweden. There are also several telecom industry associations, or so-called ad hoc groups, that work with certain issues. Ericsson's status as a well-known international company also creates other opportunities. The company, on the strength of its size and name, also exercises considerable influence over other member nations, including Italy, Spain, the U.K., France and the Netherlands. Efforts in this sphere have recently begun.

Poland is striving to expand its GSM network and catch up with the rest of Europe. Today, about two percent of the population has a mobile phone, but by the year 2000, that figure is expected to have increased to ten percent. Ericsson got a late start in Poland; a local company wasn't started until year-end 1996. The Polish company is now growing rapidly and focusing on long-term goals.

High-altitude installation work for Ericsson in Poland

Pawel Pabiniak and Grzegorz Tomczyk are working hard to install radio antennas for the GSM network in Poland.
Photo: PATRIK LINDÉN

The transmission network is not large enough in Poland, which is why radio links are often used for GSM network expansion. Shown above is Dariusz Drogosiewicz on a tower with a MINI-LINK.

Sixty meters above the ground, Pawel Pabiniak and Grzegorz Tomczyk adjust antennas some 20 kilometers outside Warsaw. The two men make sure all of the drawing-board plans and calculations actually function in reality as Ericsson continues to expand the GSM network in Poland.

They wear harnesses and climbing equipment. Watching these two men, it's easy to understand why some installation workers are recruited from the ranks of alpine mountain climbers.

Rooftops and antenna towers are not the only sites for base station installations. Some are also mounted on old industrial chimneys, which the daredevil installation workers climb up and down to assemble equipment suspended on cables.

Summer is the best time

"Summer is the best time for this type of installation work. The days are longer, of course, and it's not so cold. During the winter months, the wind blows hard up there and the ladders are often covered with ice," says Kazimierz Kamionek, installation manager at Ericsson in Poland.

Kazimierz Kamionek.

In the first phase, focus was placed on city centers earmarked for expanded coverage. Installation work in metropolitan areas is relatively easy, usually involving rooftops and similar sites. Now, however, as Ericsson expands the network, the installation work stretches along highways, country roads and throughout rural areas. There are no tall buildings out here, and the work requires towers like the one pictured above. One advantage of working in Poland is the country's relatively flat countryside, which enables towers to offer greater coverage.

"Although it's easy to cover a large area with one tower, there are problems involved with access to electricity and transmitting calls over the network. Poland is not particularly well-developed in terms of infrastructure. As a result, we are using a large number of radio links," Mr. Kamionek explains.

Poland started to construct its GSM network relatively late, compared with other countries in the region, but strong efforts are now being made to catch up with the rest of Europe. Only about two percent of the Polish population have mobile telephones today, but telecom operators in the country expect that number to increase to 10 percent by the year 2000.

"Telecom operators in Poland actually have an advantage by being late out of the starting blocks. They are getting a great deal for their money. Prices for networks have declined, and there is a pent-up demand among the people of Poland that enables operators to recruit new subscribers quickly," says Jan Sjöberg, manager of Ericsson mobile systems in Poland.

New GSM era

Ericsson's telecom customer markets its services under the ERA-GSM name, which is not connected in any way to the ERA abbreviation used by Ericsson Radio Systems. The reference, instead, is to era, as in a new age. A new GSM era!

Poland has three mobile operators with a combined capacity to offer NMT and GSM for the 900 and 1800 band. In addition to Ericsson's customer for GSM 900 services, ERA-GSM, Polkomtel has a GSM 900 network and Centertel has both an NMT and a GSM 1800 network. The Polish government owns 60 percent of Centertel, and France-Telecom owns 34 percent. The other two operators are owned mainly by Polish private interests, in parallel with strong ownership shares held by large international operators.

Jan Sjöberg.

Nokia is the dominant mobile network supplier in the Polish market, accounting for about 50 percent of all network expansion, with Siemens and Ericsson dividing the other 50 percent fairly evenly.

Most analysts regard Poland as a telecom market of the future.

All major operators and suppliers are represented in the Polish market. Nokia's emergence as the dominant player is attributable to the Finnish company's long-standing presence in Poland and Finland's history of commerce and trade with member nations of the former Eastern Bloc.

PATRIK LINDÉN

Europe's largest market for private radio

Private radio with the EDACS system has been one of Ericsson's greatest successes in Poland, the largest market in Europe for private radio.

Ericsson was the first player to enter the private radio sector in the Polish market back in 1989, winning a contract with police authorities that later created opportunities for continued growth.

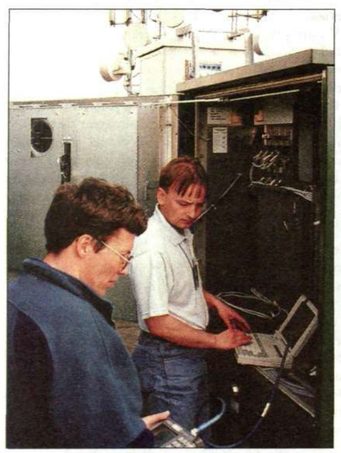
Poland's private radio sector has been managed since 1993 from Warsaw, and the company's EDACS centers of expertise for the Middle East and all of Eastern Europe are now situated in Poland.

Ericsson boasts many other prestigious customers, in addition to the Polish police authorities, including gas and energy supply companies as well as Warsaw's airport, where air traffic control is also managed with an Ericsson system.

During the serious floods that afflicted Poland last year, the EDACS system attracted considerable attention during a period when it was the only functional communication network in the country's flooded areas.

Russia is also becoming a large market for EDACS private radio systems from Ericsson.

Installations led by Ericsson in Poland are also in progress today in Slovakia.



Ericsson is expanding in Poland. Today there are 470 employees. Test engineers Tadeusz Cecinski and Marek Rutkowski are two of them.

Late start gave competition unnecessary lead

In retrospect, it's obvious that Ericsson should have focused its attention on the Polish market more strongly after the country's transition to a market economy in 1989/1990. It was not until year-end 1996 that Ericsson established a wholly owned subsidiary in Poland, and, by that time, many competing companies had established business contacts in the country.

Ericsson, it should be noted, has conducted business in Poland since 1902, when the first telephone exchange was installed in Warsaw, but its representation was restricted to an agency for many years.

"It will take time before we capture the sort of market shares we are accustomed to in other countries," says Björn Magnusson, manager of Ericsson in Poland. "Today, our market share is less than 10 percent, and we shall have to work hard to strengthen our position. We don't have any old, established relations with the country's telecommunications authority, like we have in many other countries."

"There is a strong, emerging market here in Poland, and our local company is growing rapidly. We have 470 employees today. For a while, during one of the most dynamic growth periods, we were hiring 35 new employees every month," Mr. Magnusson continues.

Alcatel, Lucent and Siemens have a virtual monopoly in the telephone exchange sector of the market. They won a bidding competition and have already started production operations in Poland. Their exclusive rights extend through year-end 1999, when Ericsson will be free to compete on equal terms.

"We are now looking to the long-term perspective. A few months ago, we moved into new offices just outside central Warsaw, and we have plenty of room to grow."

Poland's annual investment in telecommunications amounts to USD 2.5 – 3.0 billion, and there are no signs of change in projected expenditures in the foreseeable future. Optimism is widespread, and the country's economic growth leaves other nations green with envy. Poland has already been accepted as a member of NATO and, by the year 2003, many observers believe the country will join the EU.

Many people in Poland want telephones and, today, only one in five have access to conventional telephony. The country's underdimensioned and out-of-date telephone network has created strong demand for mobile telephony.

On a modest scale, Poland has become Europe's answer to the tiger economies of Southeast Asia. Economic development is strong but inconsistent. Half of the country's population still depends on agriculture for their livelihood. Major metropolitan areas account for the strongest economic growth. Warsaw has an overheated labor market among the well-educated. Ericsson's business growth in the Polish market is primarily attributable to expansion of the country's mobile networks. The company is now working on a turnkey project, whereby Ericsson is managing everything from supplies of equipment to network planning and seeking suitable rooftops for the assembly of antennas. Turnkey deliveries are making serious inroads in the telecom industry, since today's operators lack telecommunication experience and need help in areas that traditional operators have always handled themselves.

Although Ericsson entered the Polish market at a relatively late stage of development, sales of mobile telephones started even later. In June of last year, two persons began working with telephone sales. The first campaign focused on Ericsson's low-price GSM 628 model, which began to sell during the fourth quarter of 1997.

"The Polish market is highly aware in terms of price. We can talk about image and brand name but, in the end, price is the critical factor for Polish consumers," says Piotr Kwiecien, manager of Mobile Telephone and Terminals in Poland.

Ericsson's subsidiary in Poland recently launched a major campaign to promote the company's image, highlighted by "Make Yourself Heard" posters and other advertising materials on display in all parts of Warsaw. The company is starting to become better known among the general public, particularly in areas with more expansive telephone coverage.

"Almost all mobile telephones sold in Poland today are marketed in conjunction with campaigns, and telecom operators are the country's major distributors. The different networks are in a battle for customers, and they subsidize telephone purchases to recruit more subscribers. Prices are falling rapidly," says Piotr Kwiecien.

Selling telecom services is a lucrative business in most parts of the world. Thus, many companies are attracted to new markets as they are deregulated and opened to freer competition.

From zero to hundred in only five years

Ericsson's British company is one of the most successful in terms of sales to new operators. In five years, cumulative sales have increased from zero to GBP 100 million. About 100 people are currently working to double that figure by the year 2000.

Primus Communications is one of the many new operators in the British market. The company is one of Ericsson's new customers in the completely deregulated market.

Some time ago, Primus approached Flemming Andersen, group account manager at Ericsson Ltd., with an almost impossible order.

"Primus wanted a new AXE installed in less than two weeks – a completely unexpected order that we never could have predicted. Situations such as these require ability, innovativeness and enthusiasm on the part of Ericsson. Because we were determined to always comply with the customer's wishes, we promised to deliver the installation. Ten days later it was finished. The following month, we received new orders for GBP 3.5 million from Primus."

A new exciting world

This story from real life shows what reality is like for the newly established division at Ericsson Ltd. for new operators. The division currently has about 100 employees. Their common efforts have resulted in 14 customers with total sales of nearly GBP 100 million.

Edvin Ruud with his sector's management team: Flemming Andersen, Stephen Hall, Anthony Housden and Peter Leach. A young, ambitious and enthusiastic team with an exciting and challenging job.

Photo: MICHEL FOCARDE DE FONTEFIGUIERES

The goal is to double this figure by the year 2000.

"We have always had very ambitious goals," concedes John Robbins, managing director of the division. "It may be impossible to reach GBP 200 million as early as the year 2000, but we'll definitely give it our best shot!"

A winning spirit

A winning spirit prevails with John and his team at the old Stoke Mill in Guildford, less than one hour southeast of London. During the past five years, John Robbins has learned a great deal about the new type of customer his division works with. Thus, he is certain about what is required from Ericsson in order to do business successfully with them.

"It demands a business culture that is as similar to the customer's business culture as possible. Our employees must be just as creative and innovative as the customer. We must be able to think quickly and not be afraid to take the initiative. We support our account managers one hundred percent and give them an open mandate to make their own on-the-spot decisions when meeting with customers.

Basic technical expertise

"Some measure of humor is also required here at the mill. We work hard and put all we've got into what we do, but we have fun. This also applies to our time spent at the customer's site."

There are many international telecom operators that have entered the British telecom market since it was deregulated, either alone or jointly with other foreign or domestic interests. Many of these companies require strong support from Ericsson.

"This is why we recruit people with solid technical backgrounds as account managers," explains Edvin Ruud, director of the Emerging Operations Sector and responsible for 12 customers.

"But," he adds, "technical expertise is not enough. We naturally want competent salespeople and people with excellent communication skills, both with the customer and internally within Ericsson."

Fast-growing customers

Edwin says, "The typical operator begins purchasing from us on a small scale, but starts growing rapidly. A monthly growth rate of between 10 and 20 percent is not unusual among our customers. Their needs grow at the same pace as their business. At first, they only want one or a few AXE switches, then they often ask for intelligent network solutions, which is followed by discussions about building their own transport networks."

Springboard to Europe

"So far, the market has been favorable for the new operators in Britain. All of them, with only a few exceptions, have performed much better than expected financially. This is why it hasn't been difficult to obtain risk capital, either in the U.K. or abroad, once the operator has set up the network and begun invoicing customers."

According to John Robbins, there are many reasons why the U.K. has attracted so many new telecom operators. Deregulation came early to Britain and the market is large, with many multinational corporations as potential customers.

Great opportunities

"And this market is a springboard to Europe. Operators from the other side of the Atlantic establish a foothold in Britain before expanding further onto the European continent."

Edvin Ruud sees this phenomenon as one of Ericsson's greatest opportunities.

"We are currently working hard to establish cooperation with Ericsson companies in Germany and France. In the long term, we want to establish a natural way for Ericsson in the U.K. to work with the companies in other European countries which may interest a new operator."

John Robbins.

Anthony Housden, group account manager, looks for new customers on the other side of the Atlantic. He and his colleagues find out which U.S. companies are applying for operator licenses with OFTEL in the U.K. or the FCC in the U.S.

"We identify and contact the ones we feel have the most potential. The next step is to help them realize what a strong supplier Ericsson is in Europe, before they have a chance to place an order with one of our North American competitors," Anthony explains.

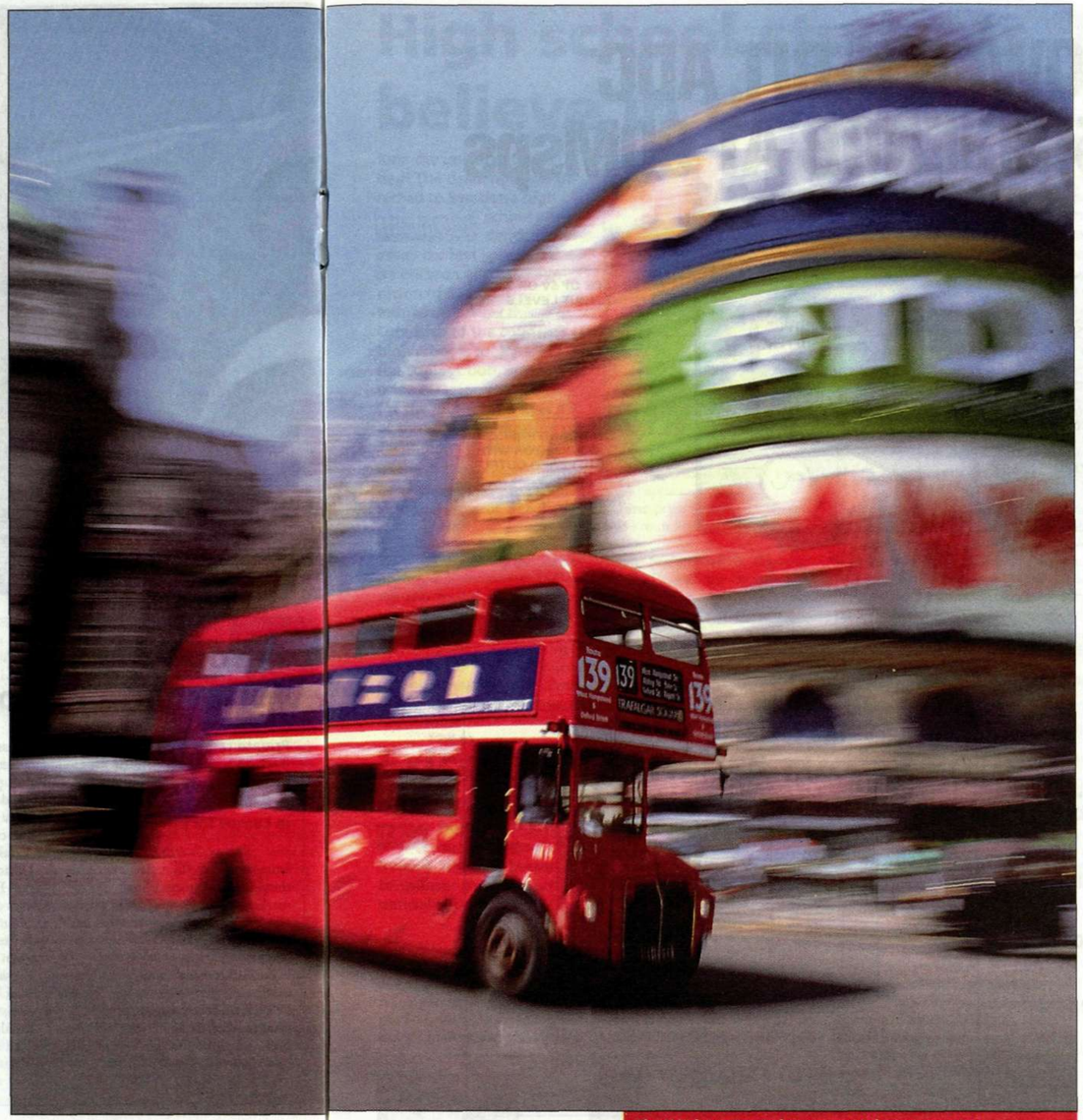
Making Ericsson known among new operators is much easier today than it was a few years ago. John Robbins believes that much of his division's success depends on the strength of the Ericsson brand name.

Strong brand name

"We have the best brand name in the industry today, thanks to our friends within mobile telephony. They have made a fantastic contribution with their branding investments.

"Nor should we forget that AXE Translocal is a fantastic product to offer this type of customer. This is another industry segment in which we are outstanding," John Robbins concludes.

LARS-GÖRAN HEDIN



The U.K. has attracted many new telecom operators. Deregulation came early and the country has served as a springboard for North American operators who want to enter the European market.

Photo: PETER CHRISTOPHER

chronicle

The era of deregulation is here and practically all of Europe is now open for competition. Senior analyst Raitis Sedlenieks gives his perspectives on future market developments.

The next Klondike

After years as a slumbering giant the European telecommunications market is now characterized by sweeping and accelerating change. From a couple of hundred telecom operators in all of Europe in the mid-1990s to more than 1,000 within the next few years. This can truly be called "The Big Bang." In our capacity as a supplier of telecom equipment and products, the current process of change offers almost unbelievable potential for new business; more than 900 new customers, all of whom want the very latest technology and services, and they want them delivered now, often supported by financing assistance. A tough challenge, but what a great challenge! Germany alone has more than 100 new operators in the starting blocks, featuring the full gamut from specialized Internet service providers to full-service telecom operators. What should we expect in the wake of this virtual "gold rush?"

Price wars! Price wars will probably become the most prominent competitive weapon. As consumers, we will be overwhelmed by newspaper ads, TV commercials and direct advertising with offers from new telecom operators that will promise lower prices and the very highest performance standards. An equation that will soon prove to be indefensible. How will operators be able to deliver inexpensive communication services with high quality and a high level of service?

It will be difficult, extremely difficult.

In England, where deregulation has made the most progress, studies have shown that enterprise customers are highly receptive to offers by new operators, but they usually do not allocate more than 15 – 20 percent of their communications budget for services offered by new operators. As for private individuals, people are either extremely loyal to their traditional operators or they accept virtually every offer by new operators and change providers often.

So what will happen to the new operators?

Few will survive on their own for more than two or three years. They will either be acquired by larger players or their operations will be terminated by impatient owners who cannot wait any longer for profitable returns on their investment. When customers feel they have finished testing the waters of new operators, and the owners grow impatient with the lack of revenues, the consolidation phase will begin: a massive elimination of substandard players through bankruptcy or acquisition by larger companies looking to expand their operations. The major pan-European players will increase their efforts to buy out national telecom companies to establish a stronger market presence, and the number of choices available to customers will be reduced.

With nearly 1,000 potential customers, the market has also become a sort of Klondike for telecom equipment manufacturers such as Ericsson. The question quickly arises: which ones should Ericsson work with in partnerships or alliances? Everybody loves a winner, but how will we choose among 1,000 potential winners and losers? One good tip in the selection process would be to carefully study the owners and their long-term outlook in terms of capital investment in the operator. Another would be to ask Ericsson's analysts and, perhaps most important, always remember: "To succeed, be daring, be first and be different"!

Raitis Sedlenieks is a senior analyst the European, Middle Eastern and African regions.

■ Ericsson Business Intelligence Network (EBIN) is responsible for various aspects of Ericsson's market surveillance operations. Additional information is available on the Business Information Center's Web site (BIC): http://bic.ericsson.se or via e-mail at the following address: ebin@lme.ericsson. se.

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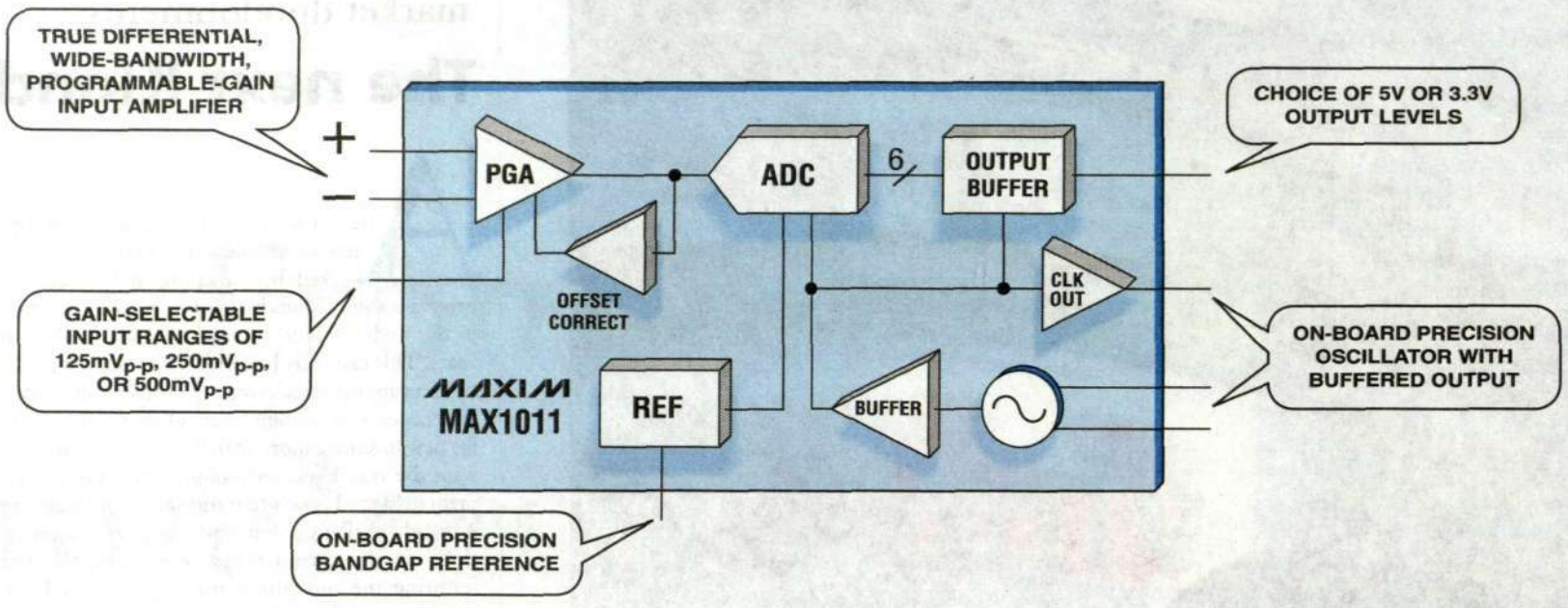

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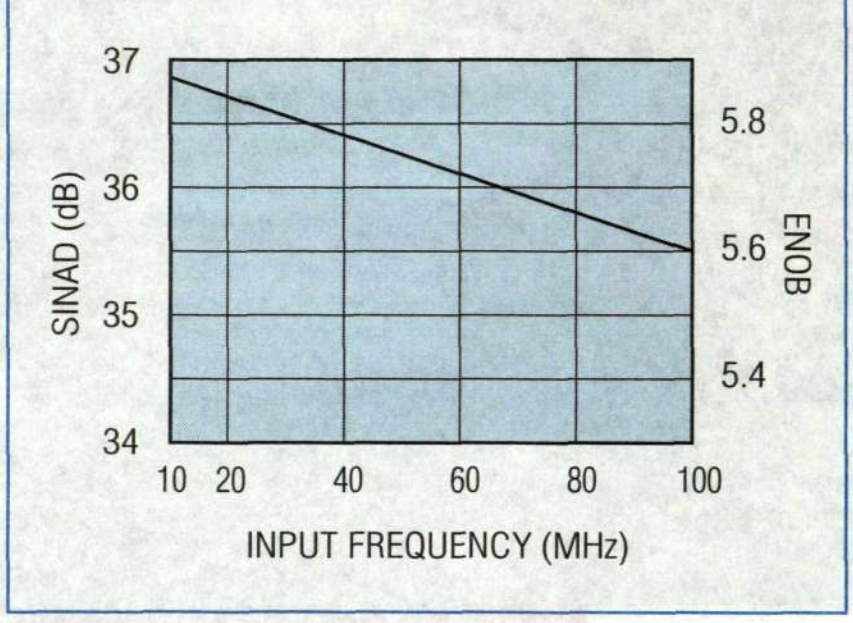

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High school students believe in the future

Rule the universe for a day! The challenge was directed to Sweden's high school students in an essay contest sponsored by Ericsson and the Federation of Swedish Industries earlier this year. One-fifth of the country's high schools took part in the competition, and a prize ceremony was held for the winners on May 15 at the Swedish Museum of Technology in Stockholm.

stockholm

Four of the winners in the essay contest are pictured here (from left): Elisabeth Frisendahl, Fredrik Backman, Anna Björkerud and Ylva Björklund; the fifth winner, Mikael Pettersson, was unable to attend the prize ceremony.

Photo: FREDRIK HJERLING

The competition was conducted under a theme focused on technological development, with the objective of stimulating discussions concerning technology and the future. By sponsoring the competition, the Federation of Industries also wanted to change present-day opinions about industrial work as dirty and heavy labor.

"We wanted to shed new light on the dark side of development that many young people share. We believe there is good reason to look with optimism toward the future," says Olle Wikström of the Public Affairs unit of Ericsson's parent company.

First prize in the competition was a round-trip ticket to the U.S. in June.

The first stop will be Washington D.C. and the Smithsonian Institute. The winners will then visit the Raleigh-Durham region of North Carolina, where Ericsson's research center for mobile telephony is situated.

The trip will end with a visit to New York City, with a tour of the UN Building and Ericsson's new CyberLab, where R&D activities are focused on Internet applications.

Most of the five winners are students of natural sciences.

In reply to a question concerning their outlook on future development, they expressed more concern for humanity in general than for themselves.

"But I'm sure things will work out," said Fredrik Backman, one of the winners, who wants to be a writer when he finishes school.

LOTTA MUTH

Telia Center offers in-house solutions

Telia's new IT-Center at Nacka Strand was officially inaugurated on May 6. The new facility is intended primarily as a display center to show business customers the benefits they can derive from Telia's investment in communications solutions.

sweden

Telia Center offers something for everybody, large and small companies alike. Visitors can participate in and test solutions in several different demonstration environments. The business environment was developed as a local network with several workstations based on different platforms.

The display features a variety of functions and applications such as business systems, video communications, Internet/intranet/extranet and other services. There is also a home environment for demonstrations of remote office work, Internet applications, digital TV and cordless telephony for private homes. Cordless communications, mobile services, a new service called "Unified Messaging" and new broadband services can also be seen in an outdoor environment. The MC 116 handheld computer, Ericsson's mobile marvel, is also on display at Telia's IT-Center.

Customers decide which communications solutions they want to see at Telia's new IT-Center.

Photo: CARL-AXEL FRIDOLF

Before visiting the new IT-Center, Telia also customizes communications solutions to meet the needs of individual business clients. Telia's new IT-Center also includes an auditorium that offers the latest and best audio and video quality, a highly attractive venue for seminars and presentations. The design of the new facility was inspired to a considerable extent by Ericsson Telecom Studios at Telefonplan.

Telia IT-Center was constructed with some cooperative assistance from Ericsson, as reflected in a complete platform for the small BusinessPhone enterprise network. Ericsson's infrastructure can also be found in the background for many other solutions based on AXE and the MD 110.

Sven Rydell of Ericsson Telecom Sweden was Telia's primary contact for advice and assistance.

For more information on the IT-Center, contact Martin Ottosson, Telia's project manager, telephone +46 70-582 66 77 or local manager Carl-Olof Landgren, telephone +46 40-27 21 72. Or pay a visit to www.it-center.telia.se.

THORD ANDERSSON

Ericsson sponsors rugby tour

During a few weeks in April and May, 20 girls and boys from South Africa got the chance to play rugby against school children in Great Britain and Ireland. The Mini League South Africa took the initiative to sponsor the Meerkats Tour, as it was called, with financial support from Ericsson's subsidiary in the U.K.

U.K.

The children came from townships and metropolitan areas of South Africa, with age groups ranging from 10 to 13. Mini League SA is an organization founded in 1993 to work with children and sports in schools to generate greater interest in sports among students.

The tour began in Oxford on April 26 and ended in Widnes on May 11. The students from South Africa met several well-known English rugby players during the tour.

"We were very happy to support this unique experience for the children. It goes well with Ericsson's philosophy to encourage and promote communications between people regardless of where they are located. We were also very pleased to facilitate greater cultural understanding between South African and British young people," says Paula Wagstaff, head of corporate communications at Ericsson in the U.K.

"It's really great that Ericsson has made it possible for South African children to realize this wonderful experience. In addition to the opportunity to play their favorite sport, they also were able to improve their skills through meetings with professional players in England. It also provided them an opportunity to experience a different culture and a different lifestyle," says David Souther, the organizing director of Mini League SA.

Meerkats set their sights high. Twenty children and teenagers from South Africa took part in the Meerkats Rugby Tour of England and Ireland recently. The tour was organized by Mini League South Africa with financial support provided by Ericsson in the U.K.

Nils Grimso, managing director of Ericsson in the U.K., is surrounded by some of the 20 girls and boys from South Africa who took part in the tour.

Famous actress attends charity ball

Ornella Muti, the famous Italian actress, attended the 1998 Aids Life Ball hosted by Ericsson in Austria.

austria

This year's gala evening took place in Vienna's City Hall. Revenues from the ball are used in the struggle against AIDS. Funds raised this year totaled more than ATS 7 million. About one thousand guests from Austria and other countries attended the ball. A fashion show by Jean-Charles Castelbajac, with a host of celebrities serving as models, was one of the evening's many highlights.

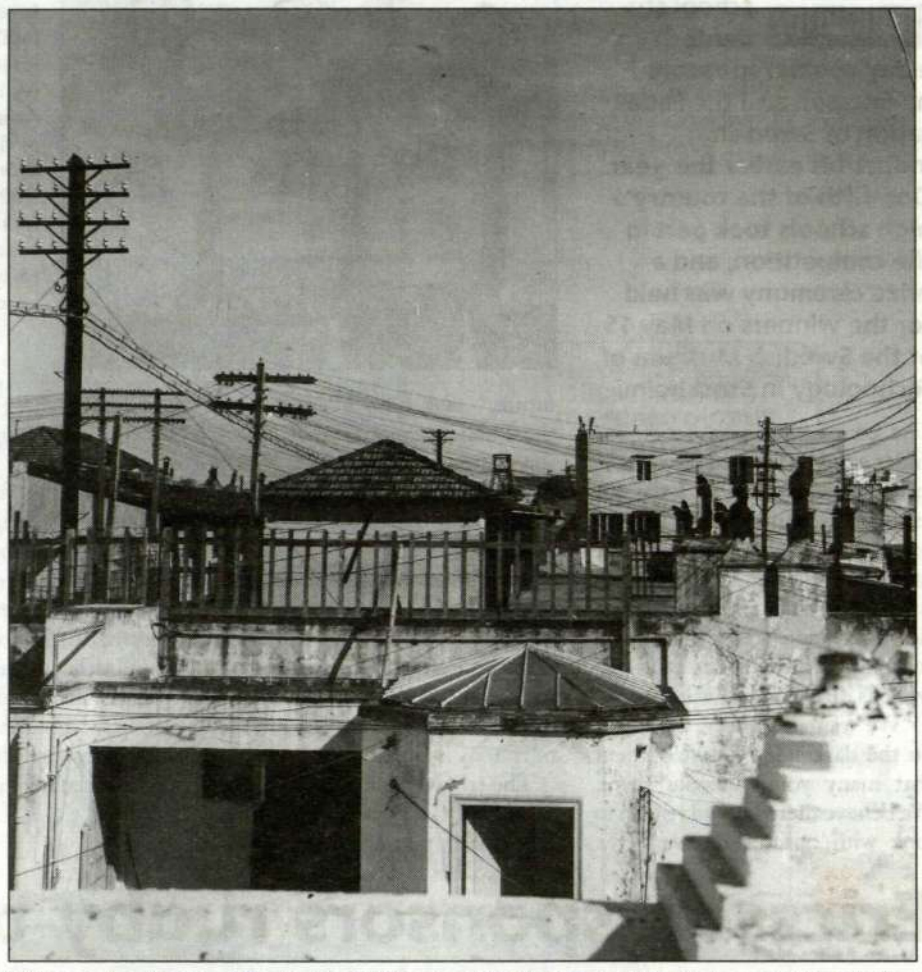
"The ball is arranged to support a very worthy cause, and I am proud to take part in the battle against this dreaded disease. I also have some very pleasant memories of Vienna, and I always feel welcome when I visit this city," Ornella Muti said.

Ericsson's business area for Mobile Telephones and Terminals in Austria has sponsored the Aids Life Ball and its work to combat AIDS for many years. Through its sponsorship support of the Aids Life Ball, the company strives to eliminate prejudicial barriers and help people afflicted by the AIDS disease. Ericsson was aware of the renowned Italian actress Ornella Muti's attitude on this issue, and invited to her attend this year's gala fund-raising event.

Actress Ornella Muti attended this year's Aids Life Ball in Vienna as Ericsson's guest. She is pictured here with Manfred Jahn, head of Mobile Telephones and Terminals at Ericsson in Austria.

The International Telecommunications Union is publishing a book about telecommunications in Africa in conjunction with the Africa Telecom exhibition recently held in Johannesburg, South Africa. Ericsson is one of the sponsors of the book, which is entitled From Tam-Tam to Internet. Ericsson has also contributed a chapter. The articles on pages 22, 23 and 25 are excerpted from the book.

Present for a decade



Ericsson has been active in the African market for more than 100 years. The photo from 1923 depicts a telephone network in Tangiers, Morocco.

Ericsson established business operations in Africa more than 100 years ago. In 1894, LM Ericsson started selling telephones in Ethiopia, a venture that was followed by the installation of a manual exchange in Cape Town, South Africa in 1896 and another in the Egyptian city of Alexandria in 1897.

The fact that Africa was largely a colonized continent has naturally had an effect on Ericsson's business operations in the region. The company's relations and business dealings with colonial powers often created ripple effects in the African colonies. In 1911, for example, Ericsson in France was assigned total responsibility for markets in French-speaking Africa, while markets in Portuguese-speaking Angola and Mozambique were cultivated from Portugal.

Even after the end of colonial times, Ericsson companies in countries other than Sweden have often been the main liaison with African markets, either for language or cultural reasons. As recently as 1990, for example, Ericsson's newly formed company in France sold telephone equipment to Togo. And Ericsson in Brazil, a large company with both production and sales operations, completed several transactions with Angola during the mid-1970s before political unrest in the country put an end to contacts with the outside world.

As increasing numbers of African nations gained independence, a wave of modernization efforts swept over the continent. High priority was assigned to infrastructure investments, with particularly strong emphasis on telephony and telecommunications. Telephone authorities of several countries, especially in northern Africa, chose Ericsson as the main supplier of fixed telecom networks during the early 1960s.

Ericsson's AXE switching system for fixed networks is now installed in 21 African countries, and cellular networks have been delivered by Ericsson to 12 other countries. The new democratic Republic of South Africa quickly became a major market for Ericsson, particularly in the field of mobile telephony. Several countries in northern Africa are also important telecom markets for Ericsson, both historically and on the strength of new business during recent years.

KARI MALMSTRÖM

Swedish companies play new roles

With a population of nearly 700 million and average telephone density estimated at about one percent, Africa offers enormous potential, both for Ericsson and competing telecom companies.

In Nigeria Ericsson is represented by Ericsson Nigeria Ltd. The company is locally owned by 60 percent. Presently there are AXE projects going on in Kaduna, an international station, and in Jos. Ericsson also has delivered mobile networks and total telecom solutions to the oil and gas companies in Nigeria.

Interest and awareness of Africa's potential as a continent of the future are growing in all parts of the world today. As a nation, Sweden is developing a new approach to its Africa commitment as the 21st century looms larger on the horizon, with strong emphasis on African nations south of the Sahara.

Although the need for foreign aid will remain strong in the foreseeable future, greater focus will be placed on active efforts to promote industry and commerce. Sweden's objective is to offer more support in processes of change initiated and managed in Africa, and to broaden all contact points between Sweden and the countries of Africa. Partnerships and exchanges of knowledge, technologies and trade will highlight future cooperation, with Swedish industry assuming a natural role in these areas.

Throughout its history of business operations in Africa, Ericsson has faced competition from suppliers based in countries that, for historical and cultural reasons, have closer relations with emerging African nations. Financing problems have always been and remain a stumbling block in efforts by African countries to improve their infrastructures. Long-term financing has been and remains a critical factor in Ericsson's ability to intensify business endeavors.

Africa's potential and Ericsson's

Overall, African markets pose certain difficulties, but they also offer substantial business potential.

The potential lies in growing democratization movements, rich natural resources, ample labor and a glaring need for infrastructure and modern technology. Problems with poverty, climate conditions, low educational standards and political instability are a reality, of course, but these factors can be countered through expanded infrastructure and communication channels.

With many years of experience in a broad variety of cultural environments, Ericsson is able to assume total control over projects, cooperate with business partners and transfer knowledge and expertise, and the company believes Africa holds a wealth of tomorrow's business opportunities. The will and ability to grow is considered strong in many African countries, and Ericsson is working actively to expand its participation in construction of infrastructural and communication channels.

Own companies

Having a local presence in markets cultivated actively by the company has always been a key element in Ericsson's business strategy. The company has a long tradition of developing companies and offices staffed through local recruitment and characterized by active transfers of knowledge and, in many cases, mergers with local interests, which have played important roles in business development.

Ericsson is represented today in 25 African countries through wholly owned operating companies, branch offices and production plants. Mobile telephones and solutions for business communications are sold through cooperation agreements with independent distributors in most of these markets, as well as a number of other markets in Africa.

In parallel with increased volumes, additional business establishments will be considered.

With respect to sales of mobile telephones, Ericsson works actively – in pace with the expansion of the mobile networks – to establish cooperation with other distributors in several new markets. Preferred partners are dynamic companies which are close to their customers and knowledgeable about the consumer market.

Continued growth a large possibility

Algeria

Ericsson has been established here for more than 10 years and is the dominant supplier of fixed telecom, with a market share of more than 90 percent. The company has a branch office and conducts manufacturing operations in a joint-venture company, Sitel, which is 35 percent Ericsson-owned. The remaining 65 percent is locally owned. Sitel, in Tlemcen near the border with Morocco, has about 250 employees. The plant was established in the late 1980s and today produces between 200,000 and 300,000 AXE lines annually. In addition to those produced in the country, Ericsson supplies and installs a further 50,000 to 100,000 lines annually. Despite the internal disturbances in the country, Ericsson's operations function without any major problems, both with respect to know-how transfers to the local employees and to undertakings vis-à-vis the PTT customer. The sale of solutions for business communications is also conducted in the country.

Morocco

Ericsson has a local company here and a market share on the fixed network side of about 30 percent. Ericsson recently obtained an order for GSM radio base stations and had previously delivered the country's analog mobile telephone network. In addition, sales of business communications and mobile telephones are conducted via independent distributors.

Ethiopia

Ericsson has long been established in Ethiopia. The beginning can be traced back to the sale of telephone sets in 1894. Ericsson is the country's main supplier of fixed telecom, with a market share of about 90 percent. During 1997, a representation office was opened in the country in connection with the initiation of Ericsson's installation of 280,000 AXE lines in a major project, partly financed through Sweden's aid organization, SIDA. Ericsson recently landed yet another AXE contract encompassing an additional 90,000 lines.

Libya

Ericsson is one of two main suppliers of fixed telephony, with a market share of about 50 percent. Ericsson has also delivered the country's GSM network. In addition, Ericsson has total responsibility for delivering and installing specially adapted communications and supervisory networks to the Great Man Made River Project, an irrigation project being implemented in the Sahara desert. By drilling down to subterranean lakes of fossil water and laying pipelines to the coast, it is anticipated that the whole of northern Libya can be supplied with water when the project is completed.

According to the plan, Ericsson's part of the project will be completed in July 1999. Then, Ericsson's undertaking calls for placing in operation and supervising the operation and maintenance of the communications and supervisory network during a period of one year. The system will be turned over, in its entirety, to the customer in July 2000. Ericsson is also successfully conducting sales of business communications in the country and sells mobile telephones via the country's GSM operator. Ericsson is in compliance with UN's embargo regulations.

Zimbabwe

Ericsson is one of the suppliers for the fixed network, and recently made a breakthrough in the mobile telephony area by virtue of an order from privately owned Econet, the country's second GSM operator. This is a network encompassing some 40,000 subscribers. Ericsson also has an office in the country and is also represented via Ericom Communications, a company which sells solutions for business communications, including MD110 and Business Phone, and also handles sales of mobile telephones.

Nigeria

This is Africa's most populous country and one of Ericsson's largest African markets. Ericsson is represented via the local company, Ericsson Nigeria Ltd., which is 60 percent locally owned. At present, AXE projects are under way in Kaduna in preparation for an international station, and in Jos. Ericsson has also delivered mobile networks, and several total solutions for the country's oil and gas companies. Among other undertakings, Ericsson has built one of Africa's largest private telecom networks for the state-owned oil company NNPC. The fiber-optic network links together a number of digital MD110 exchanges and extends from Kaduna in the north, via Aboudo, Warri and Benin to Lagos. Elsewhere, Ericsson Nigeria successfully conducts sales of business communications equipment.

Egypt

In many respects, Egypt has been a forerunner, with early ambitions to implement new technology and with excellent access to know-how and manpower. Ericsson has, over a long period of time, accounted for a considerable share of the country's investments in telecom. The first automatic exchange was installed in Suez in 1951. In 1959, Ericsson received such a large order from state-owned network operator that, as a result, it established a branch office in the country. In the early 1960s, several coordinate-selection exchanges were installed, based on technology which Ericsson was early in introducing. Over a long period, the Egyptian Telephone Company license-manufactured Ericsson's public exchanges, company exchanges and telephone sets. During the 1980s, the telecom network was digitalized with several AXE stations. Ericsson proceeded from being the country's leading telecom supplier to a position today of being one of five suppliers with an installed base of about 10 percent of the country's total with respect to fixed networks. Egypt plans to procure a million fixed telecom lines annually during the next five years. Ericsson is presently working very actively to increase its market share, and to participate in a several bid processes in connection with this effort.

in brief

Many inhabitants, few telephones

■ Africa has approximately 12 percent of the world's population, but less than two percent of the world's telephones. That means that there are about as many telephones on the entire African continent as there are in the Tokyo region. In other words, there are great opportunities for growth.

Africa is rich in natural resources. As these resources are converted into wealth, telecommunications will play a key role. Many of the current telephone networks date back to colonial times and are in acute need of updating.

The shaded countries on the map are those that have mobile telephone systems from Ericsson. They include the GSM, NMT, TACS and D-AMPS systems.

Botswana a new GSM country

■ By the end of May, Botswana's first GSM network, delivered by Ericsson, will be in operation. The operator Vista Cellular is starting up the GSM 900 network. The contract is worth approximately SEK 54 million (USD 7 million). During 1998, the network is expected to cover the larger cities and certain areas trafficked by tourists. In addition to infrastructure and transport network equipment, the deal also encompasses equipment for additional services.

Ethiopia´s first mobile network

■ Ericsson has secured the first GSM contract in Ethiopia. To begin with, the network will be able to handle 36,000 subscribers around the capital city Addis Abeba. The deal includes exchange equipment, base stations and microwave equipment for a transport network. At the end of 1998, the network will be ready for commercial operation. Ericsson has been in Ethiopia since 1894.

Expansion in South Africa

■ A framework agreement has been signed with the South African operator Mobile Telephone Networks for the expansion of the GSM network. The contract is worth SEK 1.5 billion (USD 200 million). The deal includes radio base stations, exchange equipment and Intelligent network services.

Optimism prevailed at Africa Telecom 98. Ericsson was well-represented and showed its preparedness to play a part in the expansion of African telecom networks.

Africa Telecom 98 – the largest telecommunications expo ever held on the continent – was held in May in Johannesburg, South Africa. More than 400 exhibitors from 83 countries used Africa Telecom as an opportunity to showcase new products, sign contracts and indicate commitments to the development of African telecommunications.

Renaissance theme for expo

Ericsson's impressive presence at the exhibition was indicative of the potential that Africa offers. This expression of optimism fitted nicely into the theme for Africa Telecom 98, which was African Renaissance.

"Holding Africa Telecom 98 in Johannesburg is a great achievement by South Africa and it has inspired people not only in Africa, but around the world. We at Ericsson are determined to play our part in the African Renaissance," says Christer Hohenthal, managing director of Ericsson in South Africa.

Ericsson has been operating in Africa since 1894 and has supplied AXE and GSM networks to more than twenty-five countries on the continent. It was therefore quite appropriate that one of the contracts announced by Ericsson at Africa Telecom 98 was to offer turnkey solutions for a GSM network in Ethiopia, where Ericsson's African operations began at the turn of the century. Ericsson already has a major market share in Ethiopia with 370,000 AXE lines in place.

"Our long history of operating in Africa has served us well. In this context it is important to establish good relations with a customer. As in the rest of the world very few people do business with a stranger," says Dan Ekman, Corporate Director, Africa.

"There is also renewed international interest in Africa sparked by President Clinton's recent visit and a realization by governments and investors of Africa's growth potential," he adds.

Barely one percent of Africa's 700 million people has access to a telephone. The growth potential is significant and this has been realized by governments, operators and suppliers alike. President Mandela, in his opening speech, alluded to the continuing disparity between industrialized and developing nations and the daunting task that lies ahead if one is to bridge the gap between the information haves and the information have-nots. Whatever the outcome, Ericsson is certain to be part of this massive process.

South African President Nelson Mandela and Pekka Tarjanne, General Secretary of the ITU, inaugurated the expo. Photo: LARS ÅSTRÖM

NICHOLAS CLAUDE

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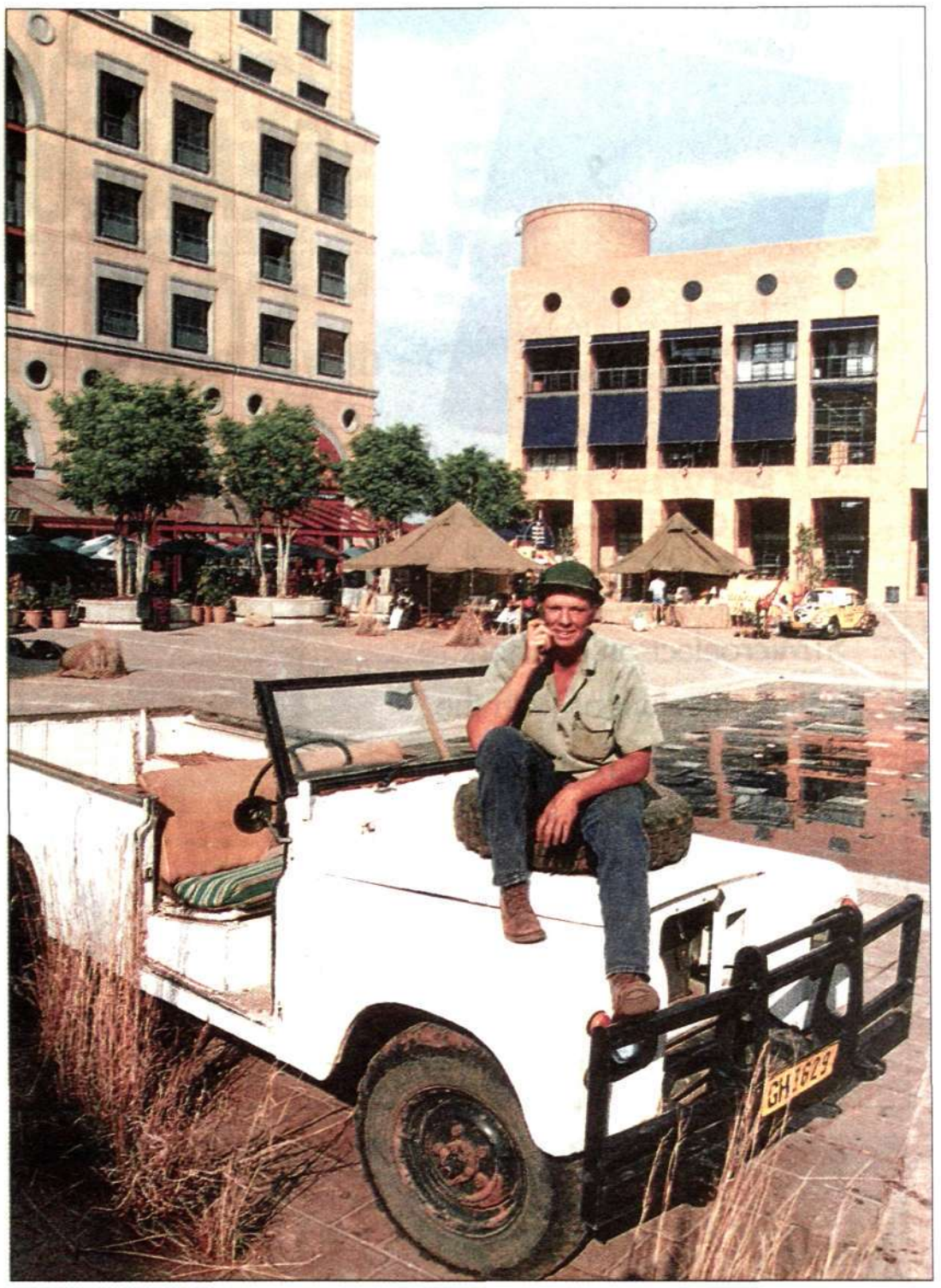
South Africa is Ericsson's largest market in Africa today. Ericsson's local company in South Africa has nearly 350 employees and is active in all of the company's business areas. The company was established in 1995. Ericsson began its re-establishment in the South African market as early as 1993 – 94, when the company was exempted from the sanctions against South Africa.

Growing resources in the south

Today businessmen aren't the only ones who utilize mobile telephony.



South Africa is full of contrasts. Netty Williamson is a hunter and parked on a square in Johannesburg to make a phone call. Photo: TORBJÖRN SELANDER

Ericsson's involvement in the country began when two GSM licenses were awarded to the operators MTN and Vodacom in October 1993. Since then, Ericsson has established and maintained a strategic partnership with MTN.

A large portion of Ericsson South Africa's rapid growth can be attributed to the relationship with MTN, whose entire cellphone infrastructure is built on Ericsson technology, serving about 800,000 subscribers. MTN is steadily gaining ground on Vodacom as it approaches a 50-percent market share.

The competition between the mobile operators in the South African market has intensified considerably and is increasingly focused on offering added-value services.

Ericsson South Africa is presently gearing up to become a local partner in the southern Africa region. In addition to the business with MTN, which is the company's single largest customer, Ericsson South Africa also conducts extensive mobile telephone sales in the country, with a steadily increasing market share.

Ericsson is also a supplier to the fixed network operator Telkom.

The MINI-LINK microwave radio link is sold in large quantities and is an important component in Telkom's transmission connections, serving both fixed and mobile applications.

Ericsson believes that South Africa can accommodate one more supplier in the fixed network area for switches and other equipment, and is working actively to establish a foothold.

Ericsson South Africa has signed a strategic partnership agreement with the Department of Trade and Industry, highlighting Ericsson's active commitment to the economic and industrial development of South Africa. Ericsson has identified energy products as an area in which South Africa has the expertise to compete internationally. Products for this market are being developed and manufactured by Automatic Systems Manufacturing (ASM), a company acquired by Ericsson in 1995.

In the business communications arena, Ericsson has captured a large market share in a very short time through close cooperation with Plessey as a distributor.

KARI MALMSTRÖM

Opening telecom markets

As in other parts of the world, telephone monopolies are now starting to break down in African countries. In the medium-term perspective, deregulation of African telecom markets is expected to open the arena for more players and increased competition.

In most cases, partial or total privatization has generated increased resources for telecom investments, created greater flexibility and contributed to faster decision-making processes and less bureaucracy.

Ericsson looks favorably on current market trends. A greater number of new financing avenues will almost certainly be opened in the wake of deregulation.

In mobile telephony, a sector never subjected to strict regulation, the trend is clearly discernible. New operators, many of them backed by owners with global operations, and established international operators are showing greater interest in African telecom markets. Ericsson believes new opportunities for prepayment as an alternative to fixed subscription rates will further increase the interest of mobile operators to establish business activities in Africa. Prepayment plans reduce the need for billing systems and increase flexibility in terms of network capacity. GSM is the dominant standard for mobile telephony in Africa.

As the system assumes greater technological maturity, prices have started to decline in parallel with increased operating reliability and implementation potential.

Global operators are also showing increased interest in Africa's fixed network sector, establishing activities as the second operator in several markets.

Tomorrow's technology today

Technological conditions for expansion of communication infrastructure now facing the African continent are considered highly promising. Tomorrow's technologies are already available.

Mobile telephony is a competitive alternative to fixed networks in many areas. Cordless access and transmissions create new opportunities for rapid, cost-efficient establishment of new operations in rural areas. In terms of systems technology, the "analog epoch" is history, and today's investors are able to implement modern, new technology directly in their networks.

Within just a few short years, telecom has emerged as a concept that covers a much broader range of communications than voice transmission.

New trends are exemplified most clearly by the rapid expansion of Internet applications.

As Web technologies progress, user-friendliness and ensuing demand have also increased sharply. A telephone subscription offers no longer just the possibility to establish voice communications; it now paves the way towards completely new multimedia applications. Mobility will not exclude adequate broadband in the systems of tomorrow.

Fixed telecom networks, computer networks and various mobile solutions will be fully integrated and supplement each other.

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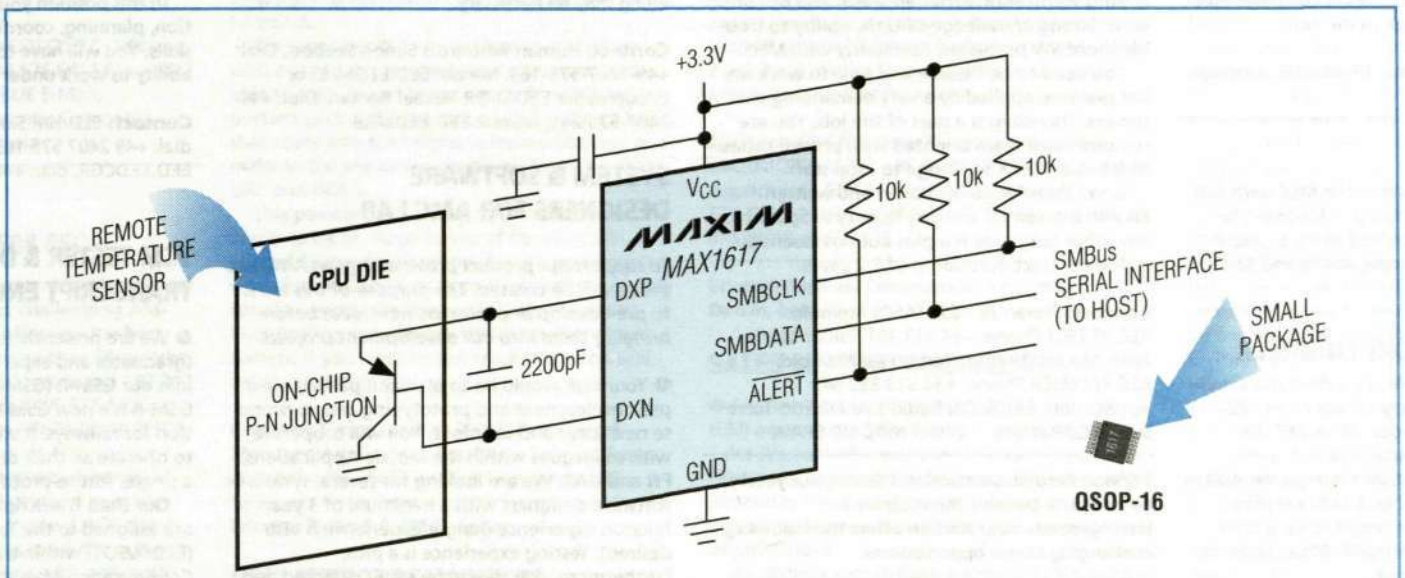
Prevent your ultra-fast, ultra-hot CPUs from going into thermal meltdown by monitoring die temperatures directly—with the MAX1617! The MAX1617 eliminates the guesswork in compensating for thermal mass and thermal gradients, preventing inaccuracies caused by improper heatsink mounting and variability in CPU die attachment. You can measure die temperature directly via an on-chip CPU thermal diode and eliminate the guardbanding required by conventional solutions. This allows the highest possible clock rates while keeping within the CPU thermal envelope.



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- **Small 16-Pin QSOP Package**

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vacancies AT ERICSSON

This is a selection of vacancies within the Ericsson corporation. They are published in the electronic News system, which is being updated once a week.

For further information about advertising here, send a memo to LME.LMEJOB.

Contact No. 9 1998 **Updated June 2**

Ericsson Ltd, UK

FSC MANAGER 020

● - to work within Business Operations, Cellular Division in the UK. An FSC Manager is required to manage and motiviate a technical team resolving TRs, to monitor ISP of customer networks, liaise with PU's and customer unit to ensure satisfactory attention is received by the customer. Presentation of technical issues at customer meetings is an important factor in this role.

Contact: Monica Winstone, ETLMAWE quoting job ref. CN335.

Ericsson Radio, S.A.(REE)

Ericsson Radio in Spain part of the MLC with 800 persons employed and located in Madrid. The ASO in Spain (REE/O), Responsible for Support and Supply of GSM to Europe, Africa and Middle East.

MSC SENIOR SUPPORT ENGINEER

● Main Responsibilities: Trouble-shooting activities on/off site. HW/SW upgrades such as APZ-IOG11 upgrades/ AS-changes/ AC-A's/ EC-A's. Participate in the on-call schedule to handle emergency situations. Test/Demo/Implementation of new features and services. Trouble report handling. Transfer of knowledge to local staff. Prepare and participate in FOA's. Other tasks connected to support and supply.

Competence Requirements: A solid AXE experience preferable GSM or TACS with a minimum of three years of working, if possible in Customer Support but applicants with testing/verification experience will also be considered. Strong knowledge of Test System, ability to trouble shoot SW problems. Experience of APZ stoppage handling. Familiarity with MHS.

You need to be flexible and able to work under pressure applied by a very demanding customers. Travelling is a part of the job. You are customer and team oriented with proven capabilities to transfer knowledge to local staff.

Good knowledge of spoken and written English is essential and any fluency in Spanish or any other language is a plus but not essential.

The contract duration is of 1-2 years.

INTELLIGENT NETWORK SENIOR SUPPORT ENGINEER

● Main Responsibilities: Trouble-shooting activities on/off site. HW/SW upgrades. Participate in the on-call schedule to handle emergency situations. Test/Demo/Implementation of new features and services. Trouble report handling. Transfer of knowledge to local staff. Prepare and participate in FOA's. Other tasks connected to support and supply.

Competence Requirements: A solid AXE / Unix experience in the area of Intelligent Network a minimum of three years of working, preferably in Customer Support but applicants with testing/verification experience will also be considered. Strong knowledge of Unix, ability to trouble shoot SW problems. Familiarity with MHS.

You need to be flexible and able to work under pressure applied by a very demanding customers. Travelling is a part of the job. You are customer and team oriented with proven capabilities to transfer knowledge to local staff.

Good knowledge of spoken and written English is essential and any fluency in Spanish or any other language is a plus but not essential.

The contract duration is of 1-2 years.

Contact: Stefan Jansson (ASO) Memoid: REE.REESDJ Phone: +34 913 391 548 or Maria Jesus Macias (Human Resources) Memoid: REE.REEMJCR Phone: +34 913 393 649 Application: ERICSSON Radio S.A. Edificio Torre Suecia C./ Retama, 1 28045 MADRID SPAIN

Ericsson Eurolab Deutschland GmbH, our young Reasearch & Develop ment centre in Herzogenrath, near Aachen offers the following challenging career opportunities.

AXE MOBILE CORE, THE PLATFORM FOR ALL DIGITAL MOBILE SYSTEMS

AXE Mobile Core System Management is responsible for the system development of the core products used commonly by all Ericsson's digital mobile systems i.e. CME20 (GSM), CMS30 (PDC), CMS40 (PCS) and CMS88 (D-AMPS).

AMC 6 TECHNICAL COORDINATOR

AMC System activities are steadily growing. To meet this challenge we need to expand.

One of the responsibilities of the Systems Group is the Technical Coordination on AMC main level. The AMC Technical Coordinator coordinates technical issues involving several subprojects, the related mobile applications projects and associated projects. The AMC main Technical Coordinator also supports the subproject technical coordinators.

● To strengthen our capabilities on Technical Coordination, we are looking for an experienced system designer with more than 3 years of Ericsson experience in AXE10 design.

We are particularly interested in someone who can provide significant competence in one or more of the following areas: AM System development, Signalling, Data Communication, O&M, Resource Module Platform, IN Development, Hardware Modernization, GSM system, PDC system, PCS system, D-AMPS system. Furthermore good communication skills and organisational talent is requested.

Due to the art of work performed, some travelling may be necessary.

Contact: Human Resources Simon Seebass, Dial: +49-2407-575-163, Memo: EED.EEDSIMS or Groupleader EED/U/OR Mikael Boman, Dial: +49-2407-575-241, Memo: EED.EEDMRB

SYSTEM & SOFTWARE DESIGNERS FOR AMC LAB

To support our product provisioning, an AMC Lab group will be created. The purpose of this lab is to pre-develop or prototype new ideas before bringing them into our development projects.

● Your task would be to plan and participate in pre-development and prototyping and to propose new ideas and solutions. You will cooperate with colleagues within the Mobile Applications, PN and UAB. We are looking for several system or software designers with a minimum of 3 years of Ericsson experience (longer experience is also desired). Testing experience is a plus. Furthermore, you should be result oriented and creative.

Contact: Human Resources Simon Seebass, Dial: +49-2407-575-163, Memo: EED.EEDSIMS or Groupleader EED/U/OR Mikael Boman, Dial: +49-2407-575-241, Memo: EED.EEDMRB

The Test and Support Department (EED/X/S) within our CSS system house is responsible for system test, industrialization and support of the CME20 SS Product line at EED. It includes CME20 SS product line configuration management, system test and industrialization of the CME20 Switching System releases, as well as product line maintenance and customer support for the CME20 SS product line. CME20 SS Product Line Configuration Management includes overall Test Configuration Management (TCM) responsibility for CSS and AMC development projects from MS7 up to GA of the CME20 SS releases.

Our Product Line Configuration Management Section (EED/X/SO) is presently looking for candidates to support GSM-R TCM in the position of:

TCM PROJECT MANAGER

● We are presently seeking a qualified candidate to take the TCM Project Management role for the GSM-R (GSM-Railway) TCM activities. GSM-R is a new GSM-based communication solution for railways. It will enable railway companies to operate all their different communications on a single, future-proof platform.

You will work in a leading position within the Product Line Configuration Management Section.- a motivated and experienced section comprised of 38 people responsible for all activities required to execute TCM projects. The TCM organization is responsible for integration of products designed within t5hree related design projects executed by the AMC, CSS and PA-SC organizations. The main tasks are the planning execution and control of TCM activities in accordance with existing EED and project directives.

A good candidate is an Ericsson employee with AXE competence in the are of AXE design, testing or TCM. Previous experience in project or line management and a good understanding of TCM and verification/INDUS processes is desirable. TCMÕs activities include program production, AS specification, parameter administration, library specification, data transcript design, dump assembly, and MHO administration. As project manager youÕll be coordinating closely with the Function Test and INDUS project management.

In this position you will need strong organization, planning, coordination, and communication skills. You will have to be flexible and have the ability to work under time pressure.

Contact: EED/H/R Simon Seebass, EED.EEDSIMS, dial: +49 2407 575 163 EED/X/SOC Dan Grinstead, EED.EEDCGR, dial: +40 2407 575 341

TCM TESTER & DATA TRANSCRIPT ENGINEER

● We are presently seeking qualified candidates (graduates and experienced Ericsson testers) to join our GSM-R (GSM-Railway) TCM activities. GSM-R is a new GSM-based communication solution for railways. It will enable railway companies to operate all their different communications on a single, future-proof platform.

Our Data Transcript Engineers and TCM Testers are assigned to the Test Bed Integration Group (EED/X/SOT) within the Product Line Configuration Management Section.

As a Data Transcript Engineer you will develop a broad knowledge of GSM/GSM-R functionality in both MSC and BSC and use that knowledge to define our test network with MML commands. You will be among the first to work with the implementation of new functionality in Ericsson GSM systems to a total test environment, and your expertise will be essential to the successful implementation in our customers networks.

The TCM TesterÕs tasks will center on assembling reference dumps and function change of working dumps for CME20 (GSM and GSM-R) test projects. Loading and documentation of change messages (CMÕs) during verification, integration, and type acceptance project phases is required. You will perform CME20 operations and maintenance duties related to support of the local test plant at EED, as well as trouble shooting of hardware and software faults detected during dump assembly or function change.

A suitable candidate should have experience in CME20 or AMC AXE design or testing. Knowledge of Intelligent Network Services is a significant plus. Graduates in Electrical or

Communications Engineering are also sought. You will need good interpersonal and organizational skills to work as an effective member of a project team.

Contact: EED/H/R Simon Seebass, EED.EEDSIMS, dial: +49 2407 575 163 EED/X/SOTC Stefan Poesch, EED.EEDSTP, dial: +49 2407 575 347

Compañia Anónima Ericsson, Caracas, Venezuela

FIELD SUPPORT ENGINEER

● We are looking for a support engineer with a minimum of 1 years D-AMPS experience, specialised in IOG11/APZ (no less than 3 years of experience)and Adjunt Processor knowledge desired. We are ready to offer a 2-years contract to the right persons, starting as soon as possible.

The successful candidate will be working with a young team in the unit 'Field Support Center', FSC.

The main responsabilities of the post are: Handling (analysis and solution when possible) of trouble reports. Software upgrades and updates. To be part of the 24 hours emergency line support team.

Spanish knowledge desired. Experience from customer interface is a benefit. We presume that you are open-minded, outgoing and that you can easily adapt to a culturally diverse working environment.

Application: Rafael Bueno CEV/OS/RC Office + 58 2 273 0293 Mobile + 58 16 625 6411 Fax + 58 2 238 5162 Memoid: CEV.CEVBUE E-Mail: cev.cevbue@mesmtpse.ericsson.se Compañía Anónima Ericsson de Venezuela

Ericsson Argentina

RESOURCES FOR CMS88 FSC

● Do you wish to become a member of a successful team to support the most challenging AMPS/DAMPS market? We can offer you the best scenario. Three customers, more than 60 switches -APZ 212 20, 212 11 and 211 11 now and APZ 212 25 soon-, more than 1400 RBS (400 RBS 882D, 1000 RBS 884), 4 Stand alone ERICSSON HLR/SCP.

We have been the world wide FOA site for Pack C3 (AS142) The market is very dynamic, always demanding the introduction of new features and services (like SMS, Prepaid, SCP standalone, etc.) Our team includes specialist in the switch and radio fields, dealing with a diversity of interesting problems.

The base site is Buenos Aires, where you can enjoy life and huge tender steaks. You will probably have the chance to travel to some of the most exciting places in South America, as Iguazu Falls, Ushuaia -the southernmost city in the world-, the glaciers, Bariloche ski resort, etc.

SPECIFICATION OF RESOURCES FIELD SUPPORT CENTER

● Length of Assignment: 1 (or 2) year(s) contract

Main assignments: Trouble-shooting activities on/off sites. HW/SW upgrades such as APZ upgrades and AS-changes. Participate in the On-call roll to handle emergency situations (APZ, IOG, billing, traffic restrictions) Introduction of new features and services.

Competence requirements: We are looking for a person with a solid technical education (BS Eng., engineering technology or equivalent work experience) You have to be an Ericsson employee with AXE competence in the support area. You are experienced in mobile telephony (AMPS/DAMPS). You are very familiar with trouble-shooting activities (Test system) etc. APZ knowledge is highly desirable.

The job requires a calm and a methodical approach to solving customer's problems. You will have to be flexible and have the ability to work under pressure.

The candidate should be able to transfer knowledge to newer members of the team. Good knowledge of spoken and written English and Spanish is highly desirable.

Contact: Jorge Lanfredi, phone +54 (1) 3195584 memoid : CEA.CEALAN FAX : +54 (1) 3195603

Ericsson Australia Pty. Ltd

HELPDESK ENGINEER EPA

● The Global Response Centre (GRC) in Australia needs a driving person for the GRC/Regional Centre Helpdesk.

The Regional Centre Helpdesk is a service through which technical and administrative support information is provided to Ericsson support organisations and external customers worldwide. The Regional Centre Helpdesk is expanding to now take on the GCSO and ASO helpdesk functions along with expanding it's responsibility within the GRC. There is a need for two more Engineers to assist with the running of the helpdesk.

The work needs to be in close co-operation with our internal and external customers, to be able to understand and meet their needs. An important part of the job will be to handle all issues that come into the helpdesk from customers and make initial analysis of problems from the ASO, GRC and GCSO.

This position will appeal to someone who wants to be involved in one of the most advanced Ericsson support organisations, someone who likes to be at the 'front line' and responsible for all support into the organisation and who likes dealing constantly with international customers. If you want to fast track your technical development, please

Contact: Simon Lardner (EPASLR) Helpdesk Manager. Application: Employee Services Susan Zeimbekis (EPASUZ) by COB 12th June 1998.

Ericsson Radio S.A. (REE), Spain

GSM SUPPORT ENGINEERS

● We are looking for two SS and one BSS Support Engineers with a minimum of 3 years AXE/GSM experience for the Field Support Centre.

Main Tasks: Implementation of new releases, Help desk,TR analysis, first line emergency support, advanced trouble shooting (SW/HW), identify, investigate and solve problems of a complex nature. One of the main important tasks is to transfer competence to local staff.

You should have advanced AXE experience, good knowledge of GSM systems and trouble shooting skills, providing emergency and day to day support to the customers as well as answering their querys and visiting sites.

Good knowledge of English is a must, Spanish knowledge would be appreciate.

We are offering a long term contract (1-2 years) starting in July-August.

Application latest 980619: Jose M. Callejo, memo id:REE.REEJMCG E-mail: reejmcg @niepce.ericsson.se Phone: +34 1 339 3110.

Guangdong Ericsson Telecom Engineering Co. Ltd

TAKE THE CHALLENGES IN CHINA

Latest news: China becomes Ericsson's largest market in the world! Guangdong Ericsson Telecom Engineering Co. Ltd (GUC) is a joint venture company based in Guangzhou and offers its professional service to Region South, the most dynamic part of our business in China. Why not take the challenge to grow with us? Now at GUC we have the following openings for you:

BN SUPPORT MANAGER

● You will work as a support manager for FSO/BN in South China. The main responsibility is to provide support for international and local switches, coach and lead the organisation and build up local competence. We expect you to have 5 years experience in support or relevant field and 2 years experience in management in Ericsson. You should have good communication skills which enables you to transfer your competence to others in a smooth way.

BR SUPPORT MANAGER

● You will work as a support manager for GSM/TACS/AMPS FSO for South China. You are responsible for the support to Southern China and for the resource of SSC Guangzhou Branch. We expect you to be a customer-oriented person with 10 years of Telecom background and at least 3 years experience in management. Good communication and interpersonal skills is a must.

Contact: GUC/NC Peter Karlsson (Memoid: ETC.GUCPEKA) Tel: +86 20 8553 8868 ext. 20510 Application: GUC/H Jasmin Xu (Memoid: ETC.GUCJAXU) Fax: +86 20 8553 6191 Tel: +86 20 85538868 ext. 20813

Ericsson Business Communications Limited, Dublin, Ireland

SALES SUPPORT ENGINEERS

● Ericsson Business Communications Limited (EBI) are seeking Sales Support Engineers to assist Sales Account Managers in the design and specification of voice and data communications infrastructures for our customers, who are Irish-based, industrial, service, manufacturing and semi-state organisations.

Applicants should have a strong background in local and wide area networks and should have a working knowledge of Windows-NT SQL-server.

Experience in the area of computer telephony integration would be an advantage.

Application: Donal Fitzgerald, Ericsson Business Communications Limited, Beech Hill, Clonskeagh, Dublin 4. Memo: EBI.EBIDF or Email: ebi.ebidf@mesmtpse.ericsson.se

Ericsson Research Canada, Montreal

SYSTEMS DEPLOYMENT ENGINEER

● We are currently looking for a Systems Deployment Engineer who will be responsible for the deployment of new application systems and CN-A's in the North American, Puerto Rico and Hong Kong market.

You main activities will be to take care of the Software Installation Process. You will prepare and coordinate software deployment activities, rotate to the CSO and participate in on-site FOA activities.

You will act as Ericsson's representative during deployment activities at customer premises. Sharing of knowledge and experience with other Ericsson business units will form an important part of the role.

The successful candidate must have a University degree in Computer Science or Electrical Engineering. He also has a broad knowledge of Ericsson AXE products and services such as APZ, IOG, APT as well as good knowledge of Ericsson processes and procedures related to deployment activities.

The ability to perform under pressure, an excellent customer handling skills and excellent communication skills (written and oral) are required.

Contact: Hélène Schwelb (Imchesc) in Human Resources or François Lapierre (Imcfrla).

LMF Ericsson, Jorvas, Finland

The FSC for the SONERA (Telecom Finland) and EMT (=Estonian Mobile Telephone) in Finland has a vacancy for a

BSS&SS SUPPORT ENGINEER

● Main responsibilities: Trouble-shooting activities on/off sites. HW/SW upgrades such as APZ upgrades/AS-changes/AC-A's/EC-A's. Participate in the on-call schedule to handle emergency situations.

Test/demo/implementation of new features and services. Trouble Reporthandling. Competence equirements: CME20 experience with a minimum of two years working on the BSS and/or SS subsystem preferably in Customer Support but applicants with testing/verification experience will also be considered.

Strong knowledge of test system, ability to trouble shoot s/w problems. Familiarity with RBS 200/2000 handling. Experience of APZ stoppage handling. Familiarity with MHS. You need to be flexible and able to work under pressure applied by a very demanding customer.

Travel at short notice is an integral part of the job. Good knowledge of spoken and written English is essential. The contract duration is between half to one year.

Application: Ilkka Koisti, FSC Manager Tel +358 9 299 3318 (ECN: 848 3318)

Ericsson Toshiba Telecommunication Systems K.K., Japan - ERJ

MARKETING & SALES OF SERVICE SOLUTIONS IN JAPAN

The business for Ericsson in Japan is growing. At present we are 700 employees, approximately one third is expatriates. Presently there is three companies established, Nippon Ericsson NRJ (MLC) 230 employees, Ericsson Toshiba Telecommunication Systems ERJ (JV) 460 employees and Ericsson Mobile Communication EMJ (JV) 15 employees.

Our mission is to identify new business opportunities for Customer Services for our existing and new CMS 30 customers. This involves a business mentality and an aptitude to create and seize opportunities in a very fast and dynamic environment.

● Your role is to develop new business opportunities and carry out marketing activities to our customers. This includes product offering, customer negotiation and creation of commercial

contracts. These activities shall be conducted in harmony with the cultural bounds and be consistent with our business processes.

The position requires co-operation between different organisational units throughout RMOJ, where our HQ in Sweden is an essential counter part.

Skills & abilities required: You are positive, independent and self-motivated with a very strong interpersonal and communications skills. You have a university degree, preferably M.Sc. or MBA, with a minimum of three years experience in the telecom, service or consulting business. Fluency in English is required and Japanese is a plus.

Contact: Jaime Cordova, phone +81 45 475 6293, fax +81 45 475 0451 or Anders Lindström, phone +46 8 757 3388, e-mail: anders.lindstrom@eraj.ericsson.se Application: Ericsson Radio Systems AB J/HPS Ann Beer, 164 80 STOCKHOLM

Ericsson Toshiba Telecommunication Systems K.K., Japan - ERJ

NETWORK EVALUATION ENGINEERS

● We have now some vacant positions for experienced Network Evaluation Engineers at our head office in Shin-Yokohama.

We expect that you are an engineer with an MBA, or have similar experience from the field of telecommunication engineering. You shall have experience in performing Network Evaluation or similar services.

We are currently on our way to offer Network Evaluation as a service to our customers. Your job will be to develop and improve the service Network Evaluation. You will also help us to develop and perform similar services within the Network Design area.

You need to transfer your knowledge and skills

Do you want to work for a company where change is constant?

In 1876, Lars Magnus Ericsson made his dream come true and opened his own little repair shop for telegraph equipment. Today Ericsson is a world leader in telecommunications. About 100,000 people work for Ericsson in 137 countries, but we still need some more.

If you are interested in any of the possibilities offered below, we would like you to know that Ericssons very advanced technologies have only one objective: to make it easier for people to communicate.

Wherever they are, whenever they want.

Telecom Management Solutions (TMS) was formed in 1997 as part of Ericsson's strategic focus on services. Working within Ericsson Mobile Systems, we offer consultancy services to all Ericsson customers within the mobile communications industry, specialising in Customer Management, Network Management and Management Consulting.

To meet the challenge of growth within our solution areas the department Business Operations Support within TMS, need more of the right kind of people. People with varying backgrounds and interests, but most of all the drive to reach our high targets. We work in a team-based organisation where different roles interact closely.

Business Operations Support assists Ericsson Local Companies in providing Customer Management solutions which consist of both IT-systems and consulting services. The Customer Management are:

- Billing Solutions
- Prepaid Solutions
- Fraud Management Solutions
- Customer Care Solutions
- SIM Card Management Solutions

We now have the following openings:

Senior Implementation Project Managers

Senior Implementation Project Managers should have a minimum of 4 years experience of leading projects.

As a Senior Implementation Project Manager, in addition to the general requirements, you will:

- Be prepared to work abroad on short-term assignments
- Have experience and general knowledge of how a mobile operator works
- Have experience of working with suppliers in an international environment
- Understand commercial issues such as proposals, agreements, Request For Quotations (RFQ), technical specifications, and requirement specifications
- Have experience of working with IT solutions in the Customer Management.

Senior Business Consultants

We are looking for people with several years consultancy experience, preferably with a mobile operator, with in-depth knowledge of business processes, organisational issues, and IT solutions in the area of Customer Management with focus on Marketing and Sales, Customer Care, and Billing.

As a Business Consultant, in addition to the general requirements, you will:

- Analyse and define business processes and procedures
- Analyse and define requirements for optimal integration between process organisation and IT solutions
- Manage projects to implement new services and business processes

Senior Product Managers – Billing/Prepaid

As a product manager working within the Billing, Customer Care and Prepaid areas, you will evaluate systems and solutions, liaise with and manage Ericsson partners, create total solutions for operators, provide technical sales support and give customer presentations. You will also be responsible for providing Ericsson sales channels with marketing information and materials.

You should have a background in Billing, Customer Care, telecom, IT project management or IT systems development, in addition to the general requirements.

Marketing Managers

As a marketing manager you will be responsible for initiating and following through sales within defined geographical regions.

You will need to establish an internal Ericsson confidence in the Customer Management portfolio of the local sales teams. Thereafter you will also be required to ensure Customer buy-in for our services together with our local account teams. You will have overall responsibility for the tender process through to signed contracts. You will work closely with Ericsson partners, account managers, and management of the customer. You must be able to travel extensively.

As a marketing manager, in addition to the general requirements, you will have:

- Knowledge in the specific areas of the Customer Management portfolio
- A proven, creative, consultative conceptual sales approach
- Experience in handling contract negotiations and in outlining proposals
- International marketing experience

What's in it for you?

- Opportunities for advancement
- Responsibility – personal development
- New, service-minded organisation
- Dynamic working environment
- International contacts
- Travel
- Positions available in Kista, with opportunities in the near future for Sao Paolo and Kuala Lumpur

Your profile

To be a part of our future success, we believe that you are the type of person who:

- Can prioritise
- Is motivated by responsibility
- Enjoys working both independently and as part of a team
- Can not only recognise opportunities, but also create and act upon them
- Is culturally aware
- Is goal oriented, yet flexible
- Has strong management and organisational skills
- Has strong communication skills, both oral and written, including English (Spanish is a merit)
- Has experience in budgetary and economic planning
- Has administrative and report writing skills

For further information, please contact:

For Senior Implementation Project Managers:
John Ericsson, phone 08-404 36 20

For Senior Business Consultants:
Peter Ödegaard, phone 08-404 55 73

For Senior Product Managers-Billing/Prepaid:
Bo Strand, phone 08-764 18 43
Magnus Flyg, phone 08-404 78 72

For Marketing Managers:
Lennart Neujd, phone 08-404 65 41

Please send your application with a CV, no later than June 26, 1998 to:

Ericsson Radio Systems AB
NHS Towa Raak
164 80 Stockholm

Make yourself heard.

ERICSSON

to our local staff by training them and working with them. You have to be fluent in spoken as well as in written English. Good knowledge of our company and a good network within Ericsson is required. Experience from customer interface is a benefit. We presume that you are open-minded, outgoing and that you can easily adapt to a culturally diverse working environment.

We are ready to offer a 1-year contract to the right persons and starting date is negotiable.

Application: Peter Nilsson ERJ/VH Office + 81 45 475 6761 Mobile + 81 80 492 7646 Fax + 81 45 475 0035 Memoid: NRJ.ERJPENS E-mail: nrj.erjpens@memo.ericsson.se

Ericsson Communications PVT. Ltd, India - ECI

DESIGN MANAGER GSM-OSS

A design centre for OSS (Operations and Support System) development was established by RMOG in Bangalore, India in1997. The design centre today has about 30 employees and will grow to approximately 40 during 1998. It is likely that the design centre will in the future be asked to carry out design work also for other units within Ericsson.

● We are now looking for a manager for the design centre. The most important tasks are: long term strategy for the centre. recruiting and competence management. infrastructure issues. finance and other general management tasks.

Qualifications: We are looking for a person with a genuine Ericsson background and a good understanding of the cultural differences that exist. It is also required that the person applying for this position has a good knowledge about software design and running development projects.

Contact: Ann Nordenstam, KI/ERA/LV/HC, phone +46 8 757 2287 Stig Rune Johansson, KI/ERA/LVC, phone +46 8 757 2448 Lars Knutsson, ERA/Z/BC, phone +46 13 28 4714 Application: KI/ERA/LV/HS Kerstin Almblad 164 80 Stockholm Sweden

Ericsson GmbH, Dusseldorf

GSM SENIOR SUPPORT ENGINEER / SUPPORT SPECIALIST

● We are looking for support engineers with a minimum of 3 years AXE/GSM experience, specialised in either the BSS or the SS area. The successful candidates will be working with a young team in the unit 'Service Supply Center', SSC.

Our unit is responsible for all support and supply activities to our customer service centers, CSC. This involves TR analysis, help desk handling, first and second line emergency support, advanced trouble shooting and emergency correction development.

We are also responsible for the acceptance test with the customer and the FOA implementations of new software releases.

Our customers are running one of the biggest GSM network in the world as well as rapid growing fix networks.

Being the world-FOA for most of the new releases, we have a very close contact to the new development projects within Ericsson, such as GPRS, UMTS/W-CDMA and GSM-R. This will give the successful candidate a great opportunity for personal and technical development and work with the latest GSM technique.

You should have a good knowledge of support/supply activities. You will play an active role in providing support/supply and you will advice our local engineers to build up local competence.

The position can be either expatriate or local employment.

Contact: Mikael Strandberg for the job in the support area, phone +49 211 5342359, memo id EDD.EDDMIST and Stefan Wannhoff for the Supply jobs, phone +49 211 5342289, memo id EDD.EDDWANN.

Ericsson Toshiba Telecommunication Systems K.K., Japan - ERJ

SERVICE RELIABILITY REVIEW, SRR, ENGINEER

● We now have a position available for an experienced SRR Engineer to work with CMS30 (PDC standard). Your work location will be at our head-office in Shin-Yokohama.

The candidate shall have experience in performing SRR service as a certified SRR engineer. The position also involves working with O&M support towards regional O&M engineers working at our customers network centers.

The candidate shall be fluent in spoken as well as in written English. Transfer of competence to local staff is one of the most important tasks. Proven skills in this area is required.

A SRR Certificate is mandatory. Previous experience with customer interface is a must.

We presume that you are open-minded, outgoing and that you can easily adapt to a culturally diverse working environment. We are ready to offer a long-term contract to the right person and starting date as well as length of the contract is negotiable.

Application: Peter Nilsson, ERJ/VH Office + 81 45 475 6761 Mobile + 81 80 492 7646 Fax + 81 45 475 0035 Memoid: NRJ.ERJPENS E-mail: nrj.erjpens@memo.ericsson.se

Ericsson Communication Ltd, New Zealand

SWITCH PERFORMANCE ENGINEER

● A vacancy has arisen for an OSS Product Manager within ENZ Cellular Systems Group, based in Wellington, New Zealand.

Ericsson New Zealand has a close working relationship with its main customer Telecom New Zealand, who is very focused on network quality improvement and the implementation of new features and services within its CMS8800 D-AMPS cellular network to gain competitive advantage.

Telecom New Zealand has just implemented a CMOS network management system for its Cellular Network with the basic alarm handling and command handling applications. We are looking to grow the range of network management applications that are sold to Telecom, so this position offers an exciting opportunity to grow the business.

The OSS product manager is responsible for managing: product profitability, product life-cycle issues, technical development issues, and overall customer satisfaction with all network management products for both fixed and cellular networks.

Applicants MUST have previous experience with Ericsson's OSS network management products.

I am particularily interested in people who have: experience in using Ericsson's OSS network management products. an understanding of Ericsson's product management processes. excellent English verbal and written communication skills. the ability to work both independently and as a member of a team.

Application: Ericsson Communications Ltd. Attention: John Kliffen, P.O. Box 11-745, 204-206 Thorndon Quay, Wellington, New Zealand, MEMO-ID ENZ.ENZJNKN

Ericsson Eurolab Deutschland GmbH, Aachen

The EED/X/ST section takes the responsibility of the new and challenging GSM-R (GSM-Railway) which is a GSM-based communication solution for railways using the IN-applications of the GSM-network. It will enable railway companies to operate all their different communications on a single, future-proof platform. EED/X/ST is looking for four candidates to fill the positions of:

GSM-R SYSTEM TESTERS

● We are presently seeking qualified candidates (graduates and experienced Ericsson testers) to join our GSM-R testing activities.

The GSM-R System Tester is mainly responsible for Test Design and Test execution needed to industrialize the new functionality. His main activities are the definition of the prerequisites to perform the system verification,the performance of the Test Execution mainly in target environment, issue and follow up requirements for test configuration and simulation tools and to build up core competence for GSM-R Industrialization.

A suitable candidate should have experience in CME20 or AMC AXE design or testing. Knowledge of Intelligent Network Services as well as BSS competence is a significant plus. Graduates in Electrical or Communications Engineering are also sought.

You will need good interpersonal and organizational skills to work as an effective member of a project team.

If you have questions and/or are interested in this task please refer to your colleagues.

Contact: simon seebass, eed/h/r, +49 2407 575 163, eed.eedsims or klaus boeckers, eed/x/stc, +49 2407 575 181, eed.eedklb

Ericsson Radio Systems AB, Kista

Cellular Systems - American Standards is 1998 strongly increasing the efforts in the Asia Pacific region. As a central and vital part of this effort a regional office has been established since February in Singapore.

The main objective is to actively find new opportunities and work focused to secure D-AMPS/IS-136 as the standard of choice for existing and future operators having access to frequencies in the American Standards band We are expanding the unit and are looking for experienced personnel for the following positions to be stationed in Singapore:

TECHNICAL LOBBYIST

● Responsibilities: Ensure that operators that have access to 800 or 1900 MHz frequencies; as well as government bodies, in the Asia-Pacific region. Have a good understanding how IS-136/IS-41 applications can increase their competitiveness on the market. Have a good understanding of the future development of IS-136/IS-41.

Tasks: Plan, and perform presentations, discussions and other lobbying activities towards operators, government bodies, media, and telecomm analysts in the region. Maintain up-to-date information on the latest developments within IS-136/IS-41 and its future developments. To actively and aggressively, when required, participate and drive the efforts of getting a customer from prospect to contract.

Qualifications: M.Sc. in Electrical Engineering or in Physics or equivalent education. Extensive experience from customer meetings and presentations to executive management of customers and government bodies. Experience of media relations. Knowledge of IMT 2000 and W-CDMA. Experience of IS-95 markets. Exceptional presentation and marketing skills.

BUSINESS CONSULTANT

● Tasks and responsibilities: Develop business cases and market plans to be presented to potential customers based on general and specific information for the individual mobile operator. In close co-operation with customer, Ericsson and third party expertise further develop and adapt these business propositions in order to prove that our solution will deliver superior value to the customer. Utilize and adapt available tools for creating business cases. Work as an interface for internal and external specialists in marketing, market segmentation and financing. Ensure that the sales force targets and convince the executive decision makers based on relevant commercial and market information.

Qualifications: At least 5 years of work with cellular systems sales and financing. At least 3 years experience working for an operator. Masters Degree in Business/Economics.

MARKET COMMUNICATOR

● Responsibilities: Strengthen the worldwide D-AMPS position by working with LCs to implement global marketing and communication programs and activities at the local level on a regional basis. Support the LCs in Asia with marketing and communication competence and serve as a catalyst to strengthen the local marketing and communication competence areas. Provide enhanced market input to global marketing and communication programs and activities.

Tasks: Work with BU marketing and communication experts to transfer global programs and activities to the LCs and their local markets within the region. Work with LCs and ERA/A to gather market input to global marketing and communication programs. Develop activities focused at media and analysts on a regional basis with the aim of building relationships and promoting D-AMPS as a superior solution for Asia Pacific. Provide support to and develop a range of activities including conferences, road shows and workshops.

Qualifications and experience: Bachelors degree in marketing/business. Knowledge of Ericsson and Cellular Systems American Standards' customers and products. Excellent presentation skills. Strong negotiation skills. Creative personality.

Contact: Tobjörn Sandberg, +65 3504 770, memoid ERA.ERATSAG, e-mail: torbjorn.sandberg@era.ericsson.se Application latest 980615: Ericsson Radio Systems AB ERA/AH/H Birgitta Stavenow 164 80 STOCKHOLM

contact

Ericsson, HF/LME/I, Room 811023, S-126 25 Stockholm

If you are on a limited assignment in Sweden you may have Contact sent to your home address. Send us your name, home address, and the date you will leave your assignment in Sweden to: LME.LMEKOCO.

During your stay in Sweden, you will continue to receive Contact.
If you move, and inform the personnel department of your new address. Contact will automatically be sent to your new address.

To notify us of a change in address, or to extend your subscription for Contact, please send us a memo with your new address, together with the old one, to LME.LMEKOCO.

As the recent rioting and unrest continued to rage in Jakarta, Ericsson employees evacuated from the Indonesian capital were lodged in a Singapore hotel. Facilities were provided for recreation, social gatherings and discussions of recent events in Jakarta.

Singapore hotel for a second home

It is Sunday morning, May 24, 1998. Tropical rains in Singapore have delayed all incoming flights. After flying through heavy turbulence and circling above the city for what seemed like an eternity, Lufthansa flight LH 788 was finally cleared for landing. I made my way to the Sheraton Towers, where more than 80 Ericsson employees evacuated from Jakarta, many of them accompanied by their families, were staying.

It's a beautiful hotel with featuring fantastic floral arrangements. A small tropical garden replete with a mini-waterfall enhances the creature comforts of a luxury hotel.

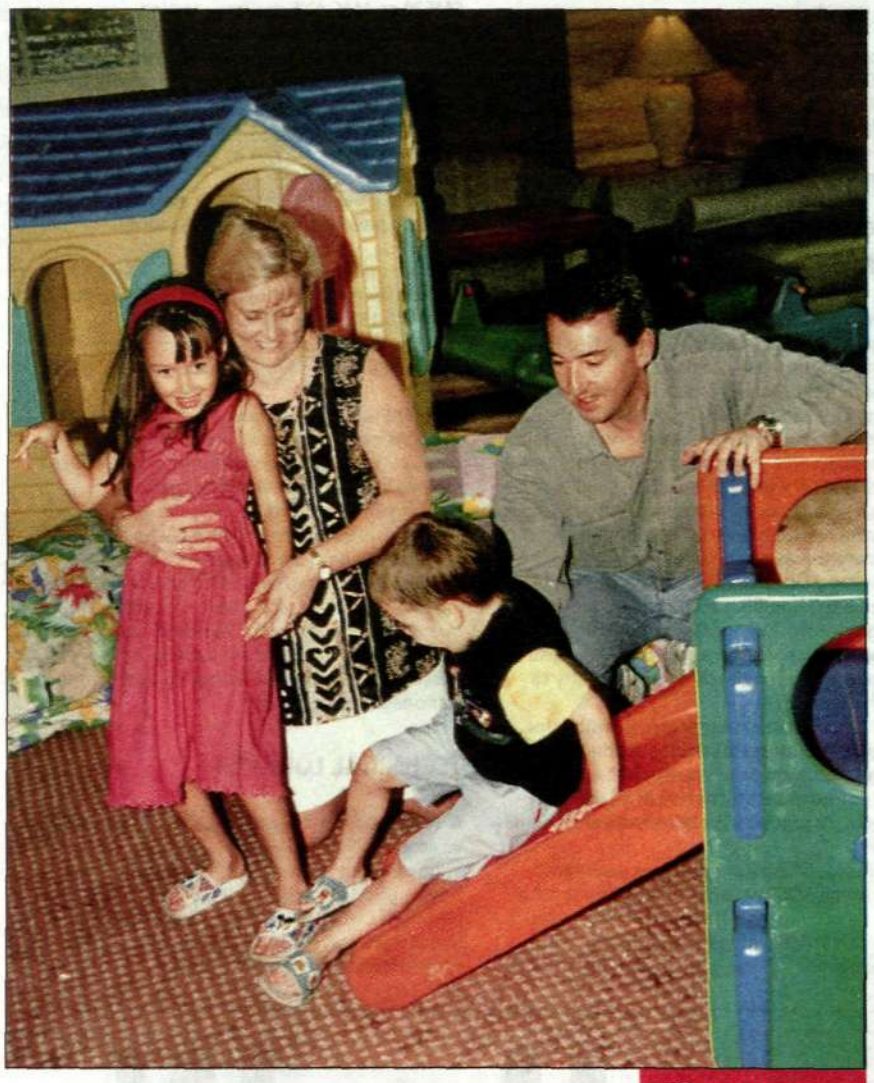
"It's exactly what we need after the experience we just had," says Gail McCusker, who is there with her husband Graeme and two children, three-year old William and five-year old Alexandra.

Gail McCusker describes the drama of Thursday, May 14, when shopping centers were stormed by looters and cars were set ablaze.

"I received a call from the English school at 11:00 AM asking me to fetch the children. Fires were burning in several sections of the city. What is usually a 15-minute drive took nearly an hour, since many streets had already been barricaded. At first, they didn't want to let the children go, but we finally persuaded them and eventually returned home unharmed. Several other families were forced to leave their children at the school overnight.

"My husband didn't get home until nightfall, and we were ordered to remain indoors all day on Friday. Graeme and I established a small control center with our two mobile telephones and the fixed line, which also remained functional. Graeme is one of five persons at the office who works with chain calls in times of emergency."

Sam and Britt Persson needed some rest and relaxation in Singapore after the drama of civil unrest and rioting in Jakarta.



After evacuation from Jakarta, Gail McCusker and her husband Graeme are in Singapore with their two children, William and Alexandra, who think the family is on vacation.

Photo: THORD ANDERSSON

Gail McCusker was glad to be at the Sheraton Towers. The hotel even has a well-equipped playroom for the children.

"William and Alexandra think we're on vacation. We all hope to return home soon, but we are certainly not lacking anything in terms of comfort here at the hotel."

I had breakfast with Sam and Britt Persson. Sam Persson is a project manager who joined Ericsson 24 years ago. He recently completed a large GSM project valued at USD 150 million. His wife, Britt, used to work for Ericsson at Kungens Kurva in Stockholm.

Sam and Britt Persson enjoy life in Indonesia, its pleasant people and the easy lifestyle. Sam Persson has worked on projects in virtually all parts of the world, and he was one of the men held hostage for three months in Baghdad in 1989. He was recently asked if he wanted to manage another huge multimillion dollar contract in Brazil. He was in Brazil on a business trip when the trouble in Jakarta started. He returned to Indonesia on that fateful Thursday, just in time to be evacuated.

"Although I've been through quite a bit in my days with Ericsson, I was surprised by what happened in Jakarta," Sam Persson says. "I could see fires burning all around the city from the airplane and, after landing, I was stuck at the airport for five hours before I finally got home to Britt, making my way through a city in flames. It's a welcome relief to relax here in Singapore."

THORD ANDERSSON

end line

Top notch crisis management

Relative calm seems to have returned to Jakarta, the capital of Indonesia. After a few dramatic weeks, life is slowly returning to normal. As you read this column, Ericsson has resumed business operations in the city. This edition of Contact includes an exciting story of the days when large sections of Jakarta were ablaze, marauding gangs of looters took to the streets and life as a foreigner assumed an element of genuine danger.

Even as we approach our Second Millennium, it is truly a shame that our world is still encumbered by such dramatic events. Those of us who live in more peaceful areas of the planet find it difficult to imagine the angst and torment that many fellow human beings are forced to live with day after day, year in and year out. There are still far too many trouble spots festering, exploding or just beginning to burn. For a global enterprise like Ericsson, the company – and especially its foreign employees – are exposed to considerable risk in countries still plagued by political instability.

Our story from Indonesia illustrates yet again that a well-developed safety net and functional routines are available to provide guidance on how Ericsson should react in situations like the one that arose recently in Jakarta. We recognize the same patterns we witnessed in the Iraqi crises a few years ago. Routines for crisis management are set in motion as soon as Ericsson employees are exposed to danger. No corners are cut in efforts to protect or evacuate employees and their families, transport them to safe havens and meet their personal needs in difficult times of crisis. I am not aware of any other company that so consistently, professionally, compassionately and faithfully comes to the aid of its employees in crisis situations. Ericsson applies a policy that should be emulated by many others as a paragon for employee safety and protection.

It's worth it to stand behind employees in all situations. In crass PR terms, it's pure gold for the company and creates volumes of favorable publicity. Mats H. Olsson, President of Ericsson in Indonesia, was portrayed as a genuine hero by the Swedish media for his impartiality in matter-of-fact reports of evacuation transports organized and carried out from Jakarta.

Considering how important it is for Ericsson to recruit expertise to work on new and often urgent projects in all parts of the world, the company's actions in crisis management situations are not only carefully and deftly contrived, they are also a dire necessity. Every person who signs the dotted line on a foreign contract can rest assured that he/she will receive complete support whenever needed, and not only in emergency situations like the upheaval in Jakarta. Tremendous efforts are made in the wings to make life a little easier and more comfortable for all foreign-contract employees, even in terms of minor problems in their everyday lives, such as living in cultural surroundings much different from their own countries.

LARS-GÖRAN HEDIN