



The Stockholm Stock Exchange skyrocketed after the recent announcement of the alliance between Ericsson and Microsoft. Ericsson's market value increased by SEK 100 billion after the news was released. Microsoft President Steve Ballmer and Ericsson President Kurt Hellström likened this cooperation to a "dream team."

Photo: Peter Nordahl

Handshake seals mobile Internet alliance

The first important application to be developed in the strategic cooperation between Ericsson and Microsoft will be sending and reading e-mail via a mobile telephone. A new web browser developed by Microsoft will be contained in future Ericsson phone models, to be known as "feature phones."

4-5



The new century will bring significant changes in China.

Great promise lights up Far East

A quiet revolution is under way in China. The number of mobile phone and Internet users is increasing rapidly in the world's most populous country. China's closer ties with the World Trade Organization (WTO)

are a sign of the change the country is now going through. At the same time, China's state-owned operators are preparing for increased competition. For Ericsson, the future looks very promising.

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NEWS

On the right track again

In addition to expanding into new markets, Ericsson has introduced several new products for both fixed and mobile data communications during 1999. Read Ericsson President Kurt Hellström's column at the threshold of the new millennium.

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IT support from Compaq

Ericsson's global IT support is to be outsourced to US-computer giant Compaq. The first stage of the development will affect more than 40,000 workstations in several countries, including Sweden and the UK.

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Wireline Systems turns the tide

The solution for the next generation of wireline networks will be able to manage both multimedia and high-speed Internet. Three contracts for Engine have led to a financial turnaround for the Wireline Systems business unit.

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Libya's potential telephony oasis

Libya has been hit hard by trade blockades for many years. The situation is now looking brighter. Håkan Johansson, head of Ericsson in Libya, sees great potential for mobile telephony, which is something new in the country.

20-21

New strategy to reach customers

All of the 9,500 employees within the Enterprise Solutions business segment will be affected by the new strategy to reach customers. A sales organization is being created that is independent of Ericsson. At the same time, the segment is making enormous investments in consulting operations.

8-9

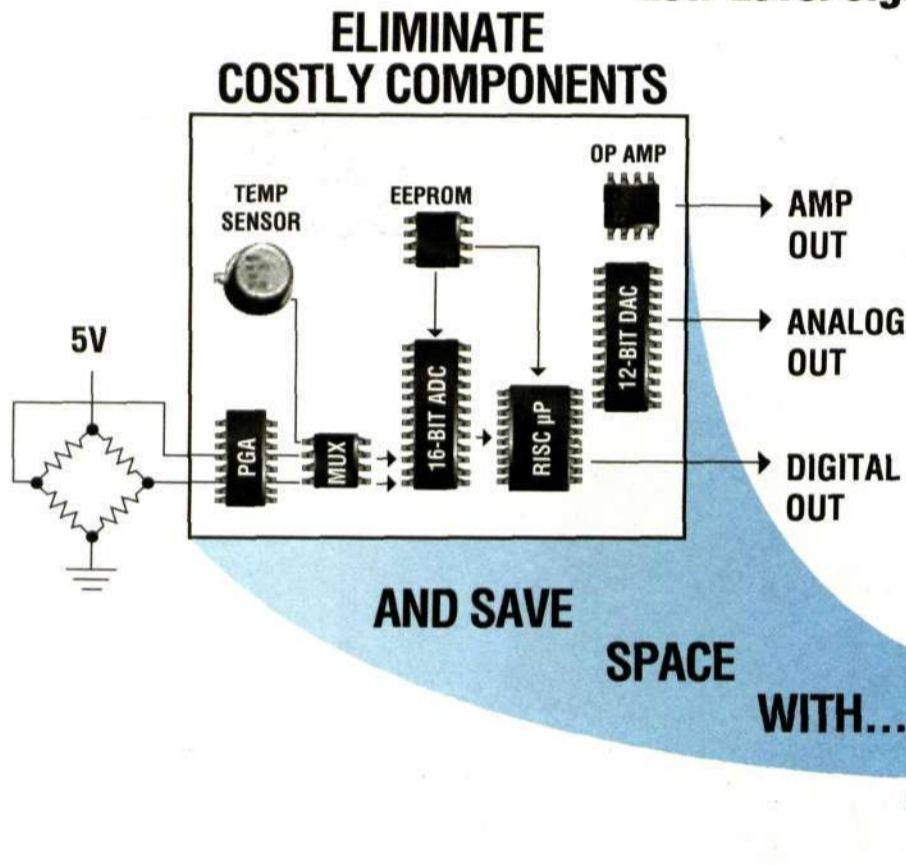
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MAX1457	0.1	3-bit	Current Source	—	✓	Analog	—	External	Internal DACs updated from EEPROM	✓
MAX1458	1	3-bit	Current Source	✓	—	Analog	—	Internal	Internal DACs updated from EEPROM	—

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Final push into 21st century is crucial

It is gratifying to be able to report that the market's earlier misgivings about Ericsson have turned around during the year's last two quarters. Share performance has been positive and it feels as though the entire organization is now moving in the right direction again.

Mobile phone systems continue to do very well and our customers have aggressive expansion plans for their systems during the coming year. Asian markets are rebounding, especially China. Developments in Europe remain stable and the number of subscribers in North America continues to grow.

On the telephone side, introduction of our new products has been a laborious task, but things are now starting to move in the right direction.

Wireline systems, after some necessary fine-tuning, have continued to grow in a positive direction. The market remains large, with no new competitors appearing on the horizon.

Enterprise Solutions has done an impressive job, which will lead to profitability during the coming year.

In addition to expanding into new markets,

the company has introduced several new products for both fixed and mobile data communications during the year. The development of the GPRS packet data technology has proceeded very successfully, and Ericsson now controls over 50 percent of the market.

Our recently announced joint venture with Microsoft strengthens our position for the future. It is important for us for several reasons – new products will be developed by the joint venture company, and our terminals will be more competitive with Microsoft's software. The growth of mobile Internet services will lead to increased traffic, resulting in further system expansions.

We are now at the threshold of a new millennium, and many employees will be working during the New Year holiday. Extensive preparations have been made and I am convinced that we will rise to meet any challenges that the millennium shift may bring. I will be personally visiting some of the control centers to see how things are progressing.

Ericsson is a large company and managers need to meet more frequently than has been the case in the past. Therefore, it has been decided that a managers' meeting will be held

annually, starting next February. We need to meet in order to discuss strategies and our overall message. No major changes to the present organizational structure are anticipated.

We have a new year ahead of us, full of opportunities. There are, however, a few weeks remaining in 1999, and we are now in a final flurry of activity. In order to continue these positive trends, it is essential that we retain the present work pace. Following the third quarter,

we promised that the final quarter of the year would be Ericsson's best ever. In order to keep that promise, we cannot relax our pace during these last few weeks of the year.

Ericsson is now on the right path again, thanks to the fine efforts of employees worldwide. A big thank you for your outstanding work during 1999.

Merry Christmas and a Happy New Year!



Kurt Hellström, President

Kurt Hellström, President

Dialog to determine employee proficiency

Starting in the New Year, Ericsson will be utilizing a new survey tool to study employee proficiency and opinions. The tool, known as Dialog, is simple, scientific, customer-oriented and aimed at supporting business operations.

DIALOG

Dialog is already in use and as many as one fifth of Ericsson's employees have already taken the survey. Compass will be formally phased out at the end of the year, although individual exceptions will be made through May 2000. Units who would like to follow up on an earlier Compass survey can administer a mini-Compass survey, enabling them to maintain continuity.

Magnus Ask is the owner of the product rights, while Mike Meadows has been named head of Dialog. All managers should learn how to use the workbook. A database is being developed to record all the results. Every organizational region will be responsible for its own Dialog survey. In Sweden, the Learning Institute unit within HR Sverige, under the direction of Karin Ågren, will be available to help units and groups in assembling their action plan following Dialog surveys. During the year 2000, all units should complete at least one Dialog survey, firmly establishing the new system.

"During the 1980s, we had the Opus system, and during the 1990s we used Compass," says Magnus Ask, who owns the product rights to the new Dialog tool. The name is intended to emphasize the fact that the tool is not simply designed to find out what people think. Rather, it is designed in cooperation with employees, with the goal of taking action and implementing change.

"Opus and Compass were developed by Ericsson and have been useful tools, but they were only designed for internal use. Today, we require systems that allow us to make comparisons with the rest of the industry and the outside world. That's why we've collaborated with the Swedish Institute of Public Opinion Research (SIFO), adapting their Human Capital model to our needs."

The ultimate goal of this survey tool is to support profitability and determine what is worth investing in.



Magnus Ask

Dialog is an electronic tool administered via the Internet, although it can also be done in the form of a written questionnaire. The survey consists of 83 standardized questions. It is also possible to add a number of additional questions which every company or unit can select from a set packet.

"It's important that Dialog does not become too comprehensive in terms of the number of questions, since we need to be prepared to take action based on the results," says Birgitta Landin, who oversees the development project for this survey model.

The standardized questions focus on customers and involve those areas that are considered most likely to influence customer value. These include expertise, knowledge about the customer, motivation, leadership, responsibility, the organization's efficiency, etc. A few of the questions deal with how employees view their immediate manager and how they conduct their work, others deal with knowledge of customers.

The Dialog survey applies to all employees. The survey will be conducted on a nationwide

basis every year. Dialog should be an integral part of line operations and Ericsson's strategic planning. Consequently, the survey must be easy to implement. Dialog has been designed to take approximately only 20 minutes for a person to fill out.

SIFO, which provided the basic model for the study, will continue to be responsible for a portion of the work, including the actual survey form, technical aspects, development of survey methods, as well as analysis of the material. Improvements to be made, based on the survey results, will be handled by Ericsson. Survey results will provide leadership profiles for managers who have at least six employees working for them. It will also provide a human capital index, which is an overall measurement of an organization's ability to provide customers with added value. To assist managers in evaluating the results, SIFO has developed a workbook that allows survey results to be linked to concrete measures, which will save time. The final report should be simple, at most one page long.

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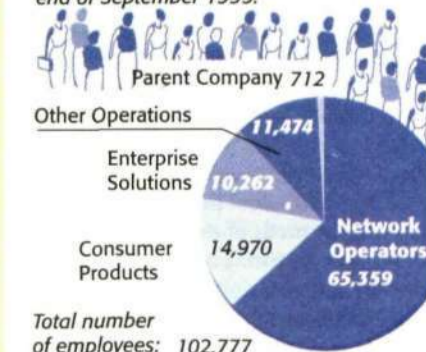
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DID YOU KNOW THAT...

Nearly two thirds of Ericsson employees work in the Network Operators segment. Number of employees, by business segment, end of September 1999.



IN BRIEF

Vodafone AirTouch chooses Ericsson

Ericsson will be supplying GPRS packet data technology to Vodafone AirTouch in the U.K., the Netherlands and Greece.

Vodafone UK, Libertel of the Netherlands and Panafon of Greece, will consequently become the first Vodafone AirTouch mobile phone operators to install GPRS technology in their GSM networks.

Field-testing will be conducted in all three countries starting at the beginning of next year, and will go into commercial operation in autumn 2000.

Microelectronics alliance

Ericsson Microelectronics and Chartered Semiconductor, which has its headquarters in Singapore, are expanding their current business relationship to include joint development of primarily Bluetooth technology and applications for wireless communications.

Included in the agreement is the development of the RF CMOS and BiCMOS manufacturing techniques for semiconductors. RF CMOS is a cost-effective solution, while BiCMOS offers higher quality.

IPT network to Portugal

Ericsson UK has signed a contract with Interroute to develop, install and provide support for a nationwide Internet Protocol Telephony (IPT) network for Interroute in Portugal. Interroute is a London-based business group that is involved in telecommunications throughout Europe. The contract is worth SEK 55 million.

Earlier this year, Ericsson supplied a similar IPT network to Interroute in Spain, which has now been put into operation.

Latin America broadband contract

Ericsson has signed a contract for broadband wireless network in the Latin America region. The deal with Diginet Americas Inc. is valued at USD 200 million. The project will expand Diginet's fixed wireless broadband network throughout Latin America.

Since Ericsson and Diginet Americas signed their initial contract in June 1999, Diginet has obtained operating licences in Brazil and Panama, and been awarded licences for local and long distance voice telephony in Argentina.

PipeWorks for Ericsson customers

Ericsson has launched a new carrier class IP telephony end-to-end cable solution. Last week at the Western Cable Show in Los Angeles, the new system called PipeWorks, was unveiled. It will provide carrier class IP telephony for multiple system operators (MSOs).

Based upon open standards, the modular design will allow the solution to grow with the needs of the MSO while interfacing with existing billing and customer care systems.

The PipeWorks solution has been developed in the U.S. at Lynchburg.

New alliance promotes mobile Internet

Ericsson and software giant Microsoft are entering into a strategic partnership to develop mobile Internet solutions. The first significant task will be to develop solutions for the wireless transfer of e-mail. Announcement of the partnership resulted in a dramatic gain for the Ericsson share that lifted the entire Stockholm Stock Exchange.

"This is an exciting partnership that is of fundamental importance for Microsoft and the entire IT industry. As a leader in the field of mobility, Ericsson was the only feasible partner for us," said Microsoft President Steve Ballmer at the press conference in Stockholm last week. "During our discus-



Microsoft President Steve Ballmer and Ericsson President Kurt Hellström are looking forward to an exciting and fruitful cooperative venture.

MICROSOFT IN BRIEF

- The world's most highly valued company - it is valued at USD 485 billion (SEK 4,070 billion)
- Established in 1975
- Windows, Office, Backoffice, development tools and multimedia are the most important product families
- Steve Ballmer is the company's president
- Bill Gates was the founder and is the majority shareholder in the company - he is also the world's wealthiest man

sions, we realized that we share many visions for the mobile Internet. I am pleased to be presenting this partnership here in the Mecca of mobile communications."

The cooperation between the two companies will involve several areas. Developing solutions for the wireless transfer of e-mail will be the first important task and it is believed that this will promote the sale of WAP phones. In the future, Ericsson's advanced phones, which are often called feature phones, will use Microsoft's recently launched Mobile Explorer. This is a web browser that will be able to use both HTML and the WAP protocol. The feature phones are scheduled for commercial launch at the beginning of 2001. The partnership will also include further development of open industry standards for products based on Bluetooth, WAP and Universal Plug-and-Play.

Historic event

Like Steve Ballmer, Ericsson's President Kurt Hellström was particularly pleased about the partnership. "This is a historic event," he said. "The world's leading software company is entering a partnership with the world leader in mobile communications. Quite simply, it's a dream team."

A jointly owned company will be charged with developing, marketing and selling total solutions based on Ericsson's infrastructure and mobile Internet technologies, as well as Microsoft's Windows NT Server and Exchange messaging software. Ericsson will be the majority shareholder in the jointly owned company, which will have its headquarters in Stockholm. Around 100 persons will be employed by the new company.

No effect on Symbian

Some analysts consider that the new partnership could have a devastating impact on Symbian, a view that is rejected by Jan Ahrenbring, marketing director for Ericsson's Consumer Products business segment.

"This partnership in no way affects Ericsson's commitment to Symbian or the Epoc project. Because Epoc is so flexible, it allows us to include other applications in our products," noted Ahrenbring. New applications and terminals



Attention was focused on Ericsson president Kurt Hellström when he announced the new partnership at a press conference last week.

Photo: Peter Nordahl

will make life easier for mobile phone owners who want to use their phones for more than voice calls. Surfing the web, for example, will be much easier with a familiar

user interface such as that provided by Microsoft's software.

"It's a matter of listening to what consumers want, and we believe that they will want to surf, chat,

send e-mail and schedule meetings using their mobile phones," concluded Steve Ballmer.

Ulrika Nybäck
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European Equal Opportunities award winner

In mid-December Ericsson Microwave was rewarded for its contributions to the cause of equal opportunities. The distinction, the Ericsson European Equal Opportunities Award, is awarded annually to encourage equal-opportunities efforts among Ericsson's European companies.

The Ericsson Equal Opportunities award was founded by the European Committee, a consortium of employee representatives from Ericsson's European companies.

US analysts in approval

Analysts in the U.S. consider the agreement reached with Ericsson to be very good for Microsoft. The American media report that Microsoft has been looking for a wireless communications partner for some time.

The New York Times reported that the deal "represents an important step in Microsoft's efforts to become a major player in mobile networks." In an interview on the Bloomberg News TV channel, Andrew Sukawaty, CEO of mobile phone operator Sprint PCS, was also enthusiastic.

Good for development

"All alliances of this sort promote development of wireless services and are good for the industry as a whole," said Sukawaty.

Alan Reiter, head of Wireless Internet and Mobile Computing, a consulting firm, was not quite as optimistic.

"This is one step in Microsoft's attempt to become a major player in mobile data, but it is certainly not going to be a slam-dunk," said Reiter to the New York Times.

Most media analysts feel that this new alliance will cause problems for Symbian's operating system. But Juha Christensen, a manager at Symbian, said to the New York Times that the collaboration between Ericsson and Microsoft does not pose a threat to Symbian.

Andrew Seybold, a consultant in Boulder Creek, California, views Microsoft's agreement with Ericsson as a good way to boost credibility when trying to land contracts with major mobile operators.

"In order to be competitive in the wireless communications industry, Microsoft somehow needs to gain access to the underlying infrastructure used by operators. Ericsson is a trusted back-end supplier."

Perfect timing

According to a Washington Post interview with Matthew Nordan, a communications analyst at Forrester Research, Microsoft timed the deal well.

"They're not too late at all," said Matthew Nordan. "The products being delivered now are all first-stage technologies. This deal gets

Microsoft positioned for the second wave of devices that will capture the mainstream."

Increased credibility

Cable news channel CNBC interviewed J.C. Simbana, an analyst at American Frontier, a Denver-based brokerage company.

"While many mobile phone companies are only talking about the new telecom world, Microsoft, through its actions, has generated increased credibility for solutions that offer wireless Internet services," says Simbana.

Simply fantastic

Tim Luke, an analyst with Lehman, said that the Ericsson deal is simply fantastic for Microsoft. "This is a major breakthrough for Microsoft, which has long tried to establish itself in the wireless market."

"I believe that the next step for them will be to reach agreements with other companies in order to get their technology out into the wireless world," says Luke.

Charlotte von Proschwitz,
New York

Pivotal event for company

Ericsson shares skyrocketed following the announcement of the company's collaboration with Microsoft. The day after the news, Ericsson shares rose 12 percent on the Stockholm exchange. Turnover reached SEK 26.5 billion.

Trading of Ericsson shares on the Stockholm exchange was stopped for two and a half hours, fanning speculation.

Rumours spread

Rumors quickly spread that something major was in the works, perhaps an acquisition. As a result, Ericsson and Microsoft were forced to announce the formation

of their joint-venture company for wireless Internet services one day earlier than intended.

Misunderstanding

The hefty share price increase was followed by a seven-percent drop the next day. However, that was primarily due to a misunderstanding that Ericsson was issuing a profit warning.

Like the Swedish media, Swedish analysts are mostly positive about the strategic collaboration between Ericsson and Microsoft - a reaction that was clearly reflected in the stock market.

The Swedish financial newspaper *Finansstidningen* noted that it now seems clear "that Ericsson, together with Microsoft, has taken a clear

leadership role in mobile Internet." Tomas Augustsson, of the Swedish daily *Svenska Dagbladet*, emphasized that Ericsson has, in one fell swoop, managed to both strengthen its own position and improve Sweden's position in the rapidly expanding telecom industry.

Major new advance

Swedish business daily *Dagens Industri* remarked that the collaboration is a major new advance for Ericsson. In a commentary on the announcement, Helen Ahlborn wrote that it is "the most important thing to happen to Ericsson in modern times."

Nils Sundström

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Global IT support outsourced to Compaq

Ericsson's worldwide IT support is to be outsourced to U.S.-computer giant Compaq. Last week, a Memorandum of Understanding was signed between the two corporations outlining the new arrangements for Ericsson's IT support. The first stage will affect more than 40,000 workstations in Sweden, Finland, Denmark, Norway, as well as Ericsson in the U.K.

Under the terms of the agreement, Compaq will take responsibility

for the 400 Ericsson staff currently providing IT support across the Nordic region. This transfer will take place during the first quarter of 2000. Compaq will offer those Ericsson companies concerned technical assistance in the form of hardware, services, operation, help-desk and onsite support. New contracts will be offered to Ericsson IT employees affected by the agreement.

Björn Boström, Senior Vice President for Supply and Information Technology at Ericsson said: "With Compaq's help we will be

able to standardise and simplify our purchasing and maintenance of PC hardware. In the long term, this will mean substantial cost benefits. In addition, the agreement means that we will continue our programme of concentrating resources on Ericsson's core operations."

Compaq's Vice President and General Manager, Werner Koepf, shared in Mr. Boström's positivity: "This agreement with Ericsson is another example of the results from our efforts to provide our international customers with world

Matthew Tapsell

IN BRIEF



Among other applications Stockholm County Council's new broadband network enables surgeons to seek off-site expert advice while performing an operation.

Broadband network for telemedicine

Stockholm County Council is in the process of linking 24 hospitals and care centers together using a new broadband network. Ericsson has total responsibility for the project and is in charge of everything from design and installation to operation, supervision and maintenance of the system.

The new backbone is a Wide Area Network (WAN) system, consisting of fiber optics and Ericsson's AXD301 ATM switch.

Demand for telemedicine services has been increasing. This solution will allow rapid and secure transmission of information, without having to move patients or staff. In the future, it will be possible for surgeons to consult with colleagues located elsewhere, during an operation, using the broadband network. For example, x-ray images will be able to be reviewed by specialists off-site, and health clinics will be able to consult with specialists.

The network is being managed by Ericsson Business Consulting.

SMS available for prepaid services

In the past, it has not been easy for people using prepaid mobile phone services to send text messages from their GSM phones. Ericsson has now developed a solution that makes this possible. Swedish operator Telia Mobile and Portuguese operator Optimus are the first to offer this service.

Prepaid subscriptions have become very popular, with millions of new users joining every month. It is now becoming more common to send text messages, especially among young people. Telia Mobile estimates that roughly 10 percent of its total revenues come from text messaging.

China expands GSM system

Sichuan Mobile Communications Co., serving southwestern China, has placed an equipment order, worth SEK 835 million, with Ericsson to expand its GSM system. The expansion will increase the mobile phone system's capacity from 600,000 subscribers to more than 1.4 million subscribers.

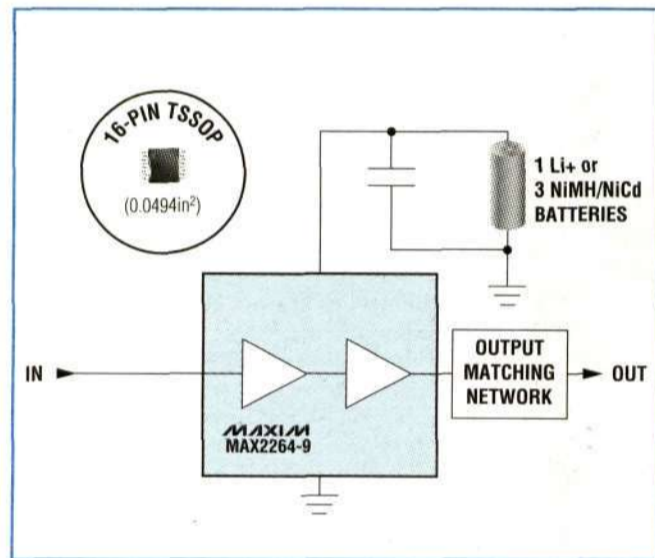
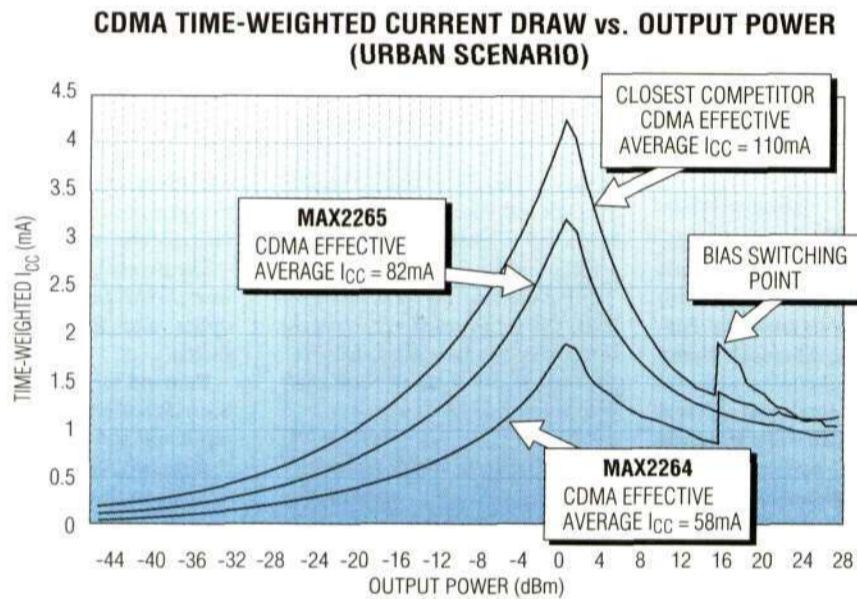
Together with Sichuan Mobile Communications Co., Ericsson will also build an Operation and Maintenance center in Chengdu to develop and support the operator's network and service in the province.

Niclas Henningsson

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The MAX2264–MAX2269 PAs are optimized for highest efficiency at medium to low output power. Since CDMA PAs output less than +16dBm more than 90% of the time, this improves phone talk time dramatically. All devices are housed in a 16-pin TSSOP with exposed paddle. For module or DCA applications, the devices are also available in die form.

PART	CDMA AVERAGE I_{CC} (mA)	FREQUENCY (MHz)	EFFICIENCY @ HIGH POWER (CDMA)	EFFICIENCY @ MEDIUM POWER (CDMA)	EFFICIENCY @ 30dBm (TDMA)
MAX2264	58	824 to 849	32%	12% (16dBm)	N/A
MAX2265	82	824 to 849	37%	7% (16dBm)	41%
MAX2266	52	824 to 849	32%	17% (16dBm)	N/A
MAX2267	56	887 to 925	30%	12% (17dBm)	N/A
MAX2268	80	887 to 925	35%	7% (13.6 dBm)	N/A
MAX2269	50	887 to 925	30%	17% (17dBm)	N/A



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Tele Danmark köper call center-system

Bättre och snabbare service samt fler tjänster. Det kan Tele Danmark erbjuda redan nästa sommar. Detta efter ordern på Ericssons call center-system Customer Interaction Platform.

– Det här är en strategiskt viktig order – Tele Danmark är en av de första AXE-operatörerna som köpt Ericssons senaste version av nätverksbaserade call center. Dessutom är det alltid roligt när en kund visar sitt förtroende och återkommer, säger Ole Lindskov Hansen, chef för Solution and Business Development, på Product Line Call Centre Solutions, Ericsson i Danmark.

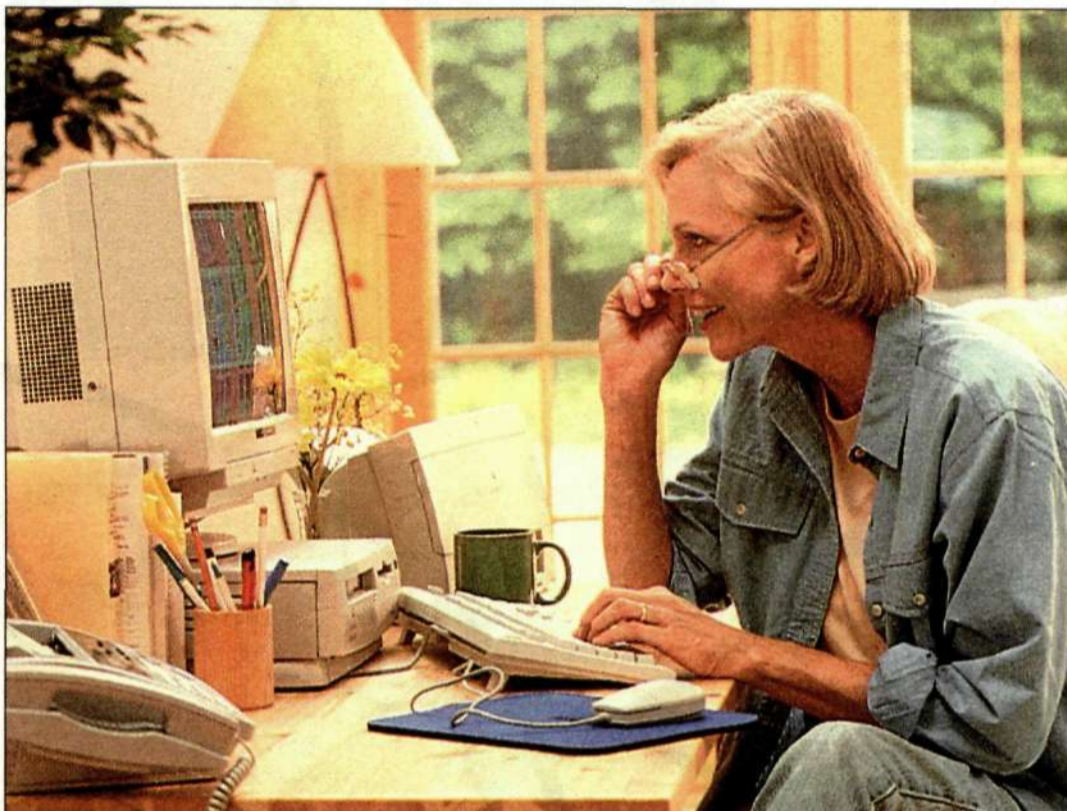
Erbjuda bättre service

Tele Danmark vill erbjuda bättre service och bredda sitt tjänsteutbud. , med det nya systemet kan man möta marknadens krav på bland annat outsourcade tele marketing-tjänster (exempelvis reklam över telefon). Operatören kommer även kunna erbjuda sina anställda möjlighet att jobba hemifrån.

– Systemets flexibilitet är viktig för kunden. På några dagar till maximalt någon vecka kan operatören implementera nya tjänster för reklam eller handel över

CUSTOMER INTERACTION

- Ordern omfattar nätarkitektur och mjukvara för Customer Interaction Platform
- Systemet kan kopplas till fasta-, mobil-, IN- och IP-nät
- Utvecklas i Älvsjö och Köpenhamn av Product Line Call Centre Solutions inom GSM-system
- Lösningen ingår i Cenaxis produktportfölj



Tele Danmark kan erbjuda många nya tjänster efter att ha installerat Ericssons senaste call center-system. Erbjudande de anställda möjlighet att jobba hemifrån är ett exempel. Foto: Scanpix

nätet, berättar Ole Lindskov Hansen.

Tele Danmark vill även erbjuda olika lösningar som ska underlätta elektronisk handel. Med det nya systemet kan operatören erbjuda bland annat Internettjänsten "web reply call", vilket innebär att en specialist ringer upp konsumenten för att svara på ytterligare frågor. På så sätt kan ett svenskt företag outsourca sina call center tjänster till Tele Danmark och ge sina danska kunder svar på deras eget språk, genom att använda danska telefonister. Operatören tror att denna typ av tjänster kommer öka i popularitet framöver.

– En person som vill köpa exempelvis en bil över nätet, kanske tycker att informationen är för knapphändig för att kunna fatta beslut om köp. Trycker han eller hon då på web reply call-knappen ringer en telefonist upp konsumenten. Call center-lösningen kan också hantera multimedia, vilket ger konsumenten större valfrihet vad gäller exempelvis sätt att kontakta telefonisten, berättar Christina Clausen, marknadskommunikationsansvarig på enheten.

Förutom Danmark har den senaste versionen av systemet sålts till Tyskland, Spanien, Syrien och Mexiko. De som marknadsför

systemet har mött ett stort intresse från länder över hela världen.

USA föregångare

– USA är något av föregångare och pionjärer vad gäller telefon-tjänster, därför är det extra smickrande att möta ett stort intresse från just den marknaden. Latinamerika, i synnerhet Brasilien, tror vi också kommer bli en stor marknad, säger Chris Graham-Fielding, marknadsansvarig på call center-solutions.

Systemet tas i bruk i Danmark juni nästa år.

Ulrika Nybäck

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HALLÅ DÄR



Elisabeth Armgarth

...är chef för FramtidsForum i Stockholm. Det är Ericssons och bemanningsföretaget Manpowers gemensamma enhet, som bildats för att lösa den övertalighet på upp till tusen personer som finns på Operatörssegmentet.

► Har enheten kommit igång ännu?

– Den 15 november startade vi i egna lokaler inte långt från Solna Centrum. Än så länge är det knappt 30-talet medarbetare som tillhör FramtidsForum, men innan verksamheten där utvecklades, vilket sker om ungefär ett och ett halvt år, så tror jag att runt 500 personer kommer att ha passerat FramtidsForum.

– Inom FramtidsForum får man hjälp med att hitta en passande utvecklingsväg. Det kan bland annat innebära kompetenshöjande kurser inom det man jobbat med eller utbildning inom ett helt annat område. Målet ska vara att man förstärker sina möjligheter att hitta ett nytt jobb och det har FramtidsForum stora chanser att hjälpa till med.

► Är det några speciella kurser som efterfrågas?

– I våra lokaler har vi en kurssal med terminaler, där den som behöver kan lära sig allt från Officepaketet, SAP/R3 till Javaprogrammering. Hittills har det inte varit kurser som efterfrågats, utan fokus har varit på framtiden och vad man vill ägna sig åt. En av de första uppgifterna för våra medarbetare är att kartlägga den egna kompetensen. Det är inte ovanligt, att den som jobbat väldigt många år på Ericsson inte tycker att han eller hon kan någonting annat. Ofta visar det sig att man kan mer än man tror och att det går att bredda kunskaperna genom några kurser. På FramtidsForum har vi kanaler mot arbetsmarknaden och kan se var behoven finns.

► Vad skulle du själv vilja arbeta med om du inte var chef för FramtidsForum?

– Jag trivs jättebra med det nuvarande arbetet och får lite av en kick när någon hittar ett nytt jobb. Samarbetet med Manpower fungerar utmärkt och är också lärorikt för mig. Tidigare jobbede jag med AXE-försäljning, men nu ägnar jag mig åt förändringsarbete. Jag ger mig inte förrän vi fått till ett smart TTC-flöde.

Gunilla Tamm

Gunilla Tamm

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Dedicated Networks upphör vid årsskiftet

Produktenheten Dedicated Networks inom affärssegmentet Företagslösningar stänger verksamheten vid årsskiftet. Runt 400 personer, varav cirka 220 i Sverige, är berörda.

Alla kontrakt och aktuella andra åtaganden gentemot kunder kommer fullt ut att slutföras. Inga nya projekt kommer att påbörjas. En särskild enhet, Special Projects, med Morgan Bergemar som chef, ansvarar för att slutföra pågående projekt. Special Projects blir en mellan Business Consulting och Enterprise Systems delad produktenhet som organisatoriskt ingår i Enterprise Systems.

Inom Dedicated Networks finns en mycket eftertraktad kompetens som nu frigörs och i stället kan komma till nytta på andra håll i koncernen. Dedicated Networks, som både bland kunder och inom Ericsson har ett aktat namn, arbetar med komplexa telekomprojekt. Historiskt har man främst vänt sig till marknader med svagt utbyggd infrastruktur.

– Projekten är ofta utsatta för stor riskexponering inte minst politiskt, vilket gör det svårt att nå uthållig lönsamhet, säger Haijo Pietersma, chef för affärssegmentet Företagslösningar.

– Det har visat sig att en snabb omorientering av verksamheten mot länder med väl utbyggd industri inte är trolig, fortsätter han. Då är det bättre att avsluta verksamheten och utnyttja resurserna på annat håll.

– Inom Dedicated Networks hemmaorganisation har vi för närvarande en övertalighet på 20 personer, säger Per Svahn, personalchef vid enheten.

För dessa personer erbjuds övergång till FramtidsForum som drivs av Ericsson tillsammans med Manpower. Där har man kvar sin anställning inom Ericsson under ett år. Under denna tid får man stöd att skaffa nytt arbete antingen inom eller utanför Ericsson.

Thord Andersson

Utveckling samordnas

I de kommande TDMA- och GSM-systemen blir nätverksarkitektur, basplattformar och ett flertal produkter inom radionätverkskontroll och basstationer gemensamma för båda systemen.

För att på ett effektivt sätt kunna använda den erfarenhet och kompetens som finns inom dessa områden samlas all utveckling och underhåll av transceiverar på GSM-systems enhet för basstationsutveckling, ERA/LR. Omorganisationen, som berör cirka 120 personer i Sverige, innebär att transceiverutvecklingen för GSM, TDMA, Edge och PDC nu sker på en gemensam produktenhet, ERA/LR.

På denna enhet bildas samtidigt en underenhet, som ska utveckla en basstationsplattform för en multistandard radio, MSR, alltså en GSM/Edge/TDMA-basstation. Förutom GSM-system och TDMA-system deltar bland annat Ericsson Radio Access i detta arbete.

http://inside.ericsson.se/technology

Enterprise Solutions adds

The Enterprise Solutions business segment is in the midst of a program that will transform its approach to the market. Ericsson's own organization will focus exclusively on providing state-of-the-art consulting services to key customers in various markets and to large global companies. Other aspects of operations, namely traditional direct sales, are to be restructured and channeled gradually into a sales organization that will be independent from Ericsson.

"Many new applications based on business solutions designed for a mobile Internet will grow within the Enterprise Solutions business segment. We also expect a rapid change in the traditional corporate market, when the new technologies create the conditions for new ways of doing business," says Haijo Pieterma, Executive Vice President business segment Enterprise Solutions.



Haijo Pieterma

Ready to meet the market

"We are now changing our approach to meeting the market, with the aim of more efficiently serving the entire corporate market with our products and systems. At the same time, we intend to increase our ability to profitably and successfully promote development efforts in cooperation with our largest customers."

Traditionally, products and solutions for business communications are rarely sufficiently uncomplicated to enable over-the-counter sales as consumer products. In addition, far from all business transactions require complex solutions. The truly large market is found somewhere in between these extremes, and it is in this segment that Ericsson has the potential to attract many more customers.

In efforts to establish contacts with the mass market, it is difficult to generate profitability and efficiency using the structure and expertise that Ericsson has accumulated over the years to serve a relatively limited number of customers with complex needs. Accordingly, a new multichannel strategy has been formulated, with two aims in mind. The first is to establish the necessary new sales channels and the second is to streamline Ericsson's role as a service provider.

Divestments

By divesting or spinning off certain Ericsson operations, several new and competent distributors will be formed. The task of the Enterprise Systems business unit will be to focus consistently on indirect sales via these and other channels. The Business Consulting business unit will be assigned responsibility for major key customers who require business solutions that mainly contain services and know-how, as well as related products, as and when the need arises.

In addition, efforts to establish more indirect volume channels are to be intensified. In the future, the Enterprise Solutions business segment will be represented by a number of distributors and dealers in each market. The segment will also offer advanced consulting services within the framework of its own organization.

Kari Malmström

Enterprise Systems builds

Most of the direct sales activities of the Enterprise Solutions business segment will be spun off and operated outside Ericsson in the future. This will create a sales force that can serve the gigantic market for small and midsize companies in a focused and efficient manner.

In some cases, the spin-offs could take the form of established external distributors taking over operations and personnel from Ericsson. In

others, Ericsson employees could assume responsibility for, or become part owners, of an activity. A third model could involve a franchise solution. Conditions in the local market will determine the action taken in particular cases.

"Regardless of the form the spin-off takes, the result will be companies whose core business will be sales. They will be able to focus all their resources on becoming the best player in their niche," says Lars E Svensson, head of the Enterprise Systems

business unit.

The lion's share of Ericsson's small and midsize corporate customers, which currently number nearly 100,000, will accompany the spun-off operations to the new sales organization, as will many of the employees who currently serve these customers.



Lars E Svensson

This will secure continuity in customer relations, at the same time as the entrepreneurial spirit and inherent driving forces are given the freedom to grow.

"This is part of our multichannel strategy. We want to have many different types of dealers. The spun-off companies will have a well-defined role as highly competent systems integrators. Other channels may consist of high-volume distributors who specialize in a certain product or a specific customer category."

more routes to customers



A new Web-based e-commerce system featuring news and product information will be an important meeting-place for Enterprise Systems' customers and distributors.

Entire range assembled on the web

The new way of meeting the market will be supported by a web-based e-commerce system that will handle all production flows and create a meeting-place for distributors, customers and Ericsson's key account managers.

The new e-commerce system will be an efficient marketing tool and, possibly, Enterprise Systems' principal interface to the global network of distributors. News, product information, reference customers and case studies will be made easily available via the system.

The products delivered in the future will go directly from the supplier to the various distributors, without any diversions. In many cases, the products will then be immediately forwarded to the end-customer, thus closing the sales process. In cases where the products are part of the solutions offered by the Ericsson Business Consulting business unit, they will be delivered to the local Ericsson unit by the distributors in the particular market.

It will be possible to control the entire order-handling process via the web. The distributors will order directly and will be able to steer deliveries to the customer. Customers will also be able to place direct orders, for supplementary deliveries of new systems telephones, for example.

At present, the e-commerce platform is in the development stage. The Swedish distributors, Tieto-Enator and PC-LAN, will be the first companies to test the system, which will provide coverage in all markets during 2000.

Kari Malmström

Kari Malmström

Business Consulting intensifies relations

Ericsson is focusing on becoming the leading consulting company for large, dynamic enterprises by offering state-of-the-art consulting that is independent of product sales. The aim is to become the trendsetting provider of services that focus on complex business solutions for a mobile Internet.

"Offering services is different from selling products," says Kennet Rådne, head of the Business Consulting business unit. "Our 'product' arises after interaction with the client and consists of the consultant's expertise, skills and customer-relations ability, which is then combined with a technological solution. Our task is to add value. A company that commissions a consultant expects change."



Kennet Rådne

Joint localization

Ericsson Business Consulting offers global consulting services based on a regional organization. Where appropriate, providing a local presence in the various markets will entail sharing a location with Ericsson's market units. From such

a location, consultants and salespeople will work as a team in various customer projects.

The business unit has defined a number of Global Practice Areas (solution areas) that will be cultivated on a global basis by the consultants. The established areas are Management Consulting, Customer Relationship, Mobile e-commerce, Efficient Collaboration, Network Convergence and Managed Services.

"The solution areas will have close contact with the Enterprise Solutions product units. However, they will not work on product development, but on the development of concepts for the products," Kennet Rådne explains.

Unique client

"Every client is unique, but many technical solutions and concepts can be further developed and applied in new contexts. Because we work globally, we have the required overview and can make better use of our experience on behalf of our clients."

To begin with, Ericsson Business Consulting will focus on three vertical industrial segments: bank and finance, travel and transport, media and entertainment. The segmentation helps the salespeople at the market units to merge the solution areas' concepts with the specific needs of the segments. Awareness

and understanding of the customers' operations are a prerequisite for Ericsson's ability to propose communication and technological solutions that genuinely add the desired business value.

Demands for change

"The enterprise segment's multichannel strategy is resulting in considerable demands for changes and improvement in the way we work," Kennet Rådne explains. "In the future, we will focus heavily on recruitment and competence development. Our actual working methods will vary from country to country. We've already made considerable progress in some markets, including the Netherlands, Italy and Germany."

Ericsson Business Consulting's aim is to be the first choice of clients worldwide in the field of state-of-the-art business solutions for a mobile Internet. The first step involves solutions and applications for WAP, while the next one will entail leading-edge solutions for mobile e-commerce.

"At the moment, we're implementing an intensive training program in the WAP area and are simultaneously conducting a marketing campaign," says Kennet Rådne. "We expect this to result in a rapid expansion of our client base."

Illustration: Jan Olsson

networks of independent dealers

Building an efficient distribution network will be one of Enterprise Systems' roles. The other will be to develop products and systems based on future technologies for customers of the future. This business unit must be successful in both tasks, since they are mutually dependent.

"Our product units develop lots of good solutions. In the past, the time it has taken for these solutions to reach potential customers has been unnecessarily long. Customers are not interested in a product unless it

is available in the market," emphasizes Lars E Svensson.

According to Lars E Svensson, WebSwitch, Ericsson's IP-based business switch, is an example of a product that is not possible to supply to a volume market via the company's traditional sales organization. However, the new multichannel strategy will provide WebSwitch with the scope to capture a gigantic market of small companies that have long been accustomed to purchasing datacommunication products via dealers. En-

terprise Systems' future role will be to function as a bridge between the product units and the distributor network. Part of the organization will relocate to various regional offices, from which the sales channels will be managed and developed. A regional presence will also secure proximity to customers, thus enabling the continuous communication of customer requirements to the product units. The resulting feedback will ensure that the right products are offered.

The business unit will own all the

products in the business segment and will also be responsible for the products from other Ericsson units or third-party suppliers that are components in business solutions offered by Ericsson.

"Our new sales method will be of value to the whole of Ericsson. We will have much faster and more efficient flows to the market," Lars E Svensson adds. "We're receiving increasing numbers of inquiries from other segments, such as Consumer Products and Network Operators, which are

looking for channels to the enterprise market for their products and systems."

Ericsson Schrack BusinessCom is an independent company based in Austria that started up operations as early as the beginning of 1999. Projects involving various types of takeovers of sales activities are currently under way in most of the major markets. A large number of these will result in concrete action during 2000.

Kari Malmström

Environmentally friendly switches

In three years, the environmental impact of Ericsson's MD110 business switch has been reduced by 10-15 percent. This development has been shown in a life-cycle assessment of two versions of the switch, the BC8 and the BC10.

In both cases, the largest environmental impact comes from energy consumption during operation and Ericsson's own personnel. That is, the heating of premises, travel, and so on. The reduced environmental impact is mainly a result of the more recent model being more compact, which affects both the use of materials and transportation.

In cooperation with Chalmers University of Technology in Gothenburg and Flextronics International, Ericsson has analyzed the environmental impact of two versions of the MD110. The switch has been around for a long time, making it possible to compare models produced in different years, but which have the same functions.

The study has taken one-and-a-half years and has involved a total of around ten people. Now, towards the end of the project, the team is four-strong: Lars Lenell, project manager, and Anders Andrae, environmental engineer, both from Ericsson; Kaj

Storch, components engineer, from Flextronics, and Ulf Östermark, an instructor from Chalmers Industrial Technology.

Detailed study

Enormous amounts of data have been collected. The EcoLab data tool has been pushed to the limits of its ability. The study has charted eight production lines at Flextronics' plant in Karlskrona, southeast Sweden, where the MD110 is produced. More than 70 components suppliers have contributed to this inventory by responding to detailed questions. In addition, Ericsson's own contributions in the flow were examined – development and construction, sales, marketing, distribution, service and installation, as well as requirements in the form of premises, heating and travel, among other factors.

The results of the analysis were presented in October. It can be seen that the difference between the two models is not large, only approximately 10–15 percent.

A more compact building practice, with integrated mobility, for example, makes the 1999 MD110 more environmentally economical regarding materials consumption and production technology compared with the 1996 model. Despite greater functionality, it takes up less space

and weighs less, which means less environmental impact during transportation.

The largest amount of environmental impact is, however, caused by the consumption of energy during the units operation – and Ericsson's intermediate activities, a somewhat astonishing fact, which can largely be attributed to the heating and cooling of premises, as well as the personnel's travel.

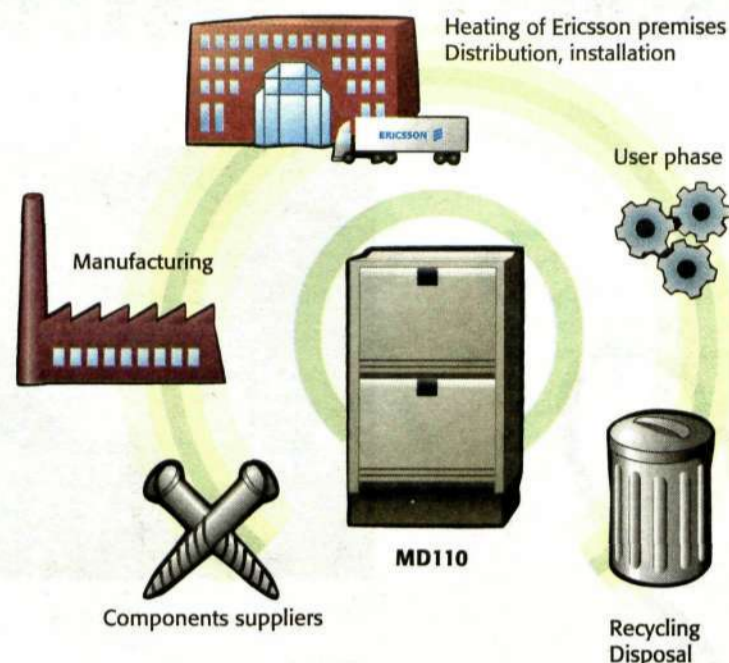
"For us, the most important result is that we have studied our most important product and charted its environmental impact during its entire life cycle. We have also created clear guidelines for the focus of our product development from an environmental perspective," says Lars Lenell.

"By reducing the energy consumption, particularly for system telephones and line cards, we can reduce the environmental impact dramatically. The current transition within Enterprise Systems, to more indirect sales, should also result in less environmental impact being generated by our organization."

Major value in future

Even while it was being carried out, the study resulted in improvements in the MD110's environmental impact. For example, Ericsson has changed its collection site, so that all transport can be made by rail to

ENVIRONMENTAL IMPACT OF THE MD110



A life-cycle assessment (LCA) maps out the product's life from the cradle to the grave.

Illustration: Paues Media

Boliden, where the reprocessing and recycling of scrapped MD110s takes place.

The inventory models that have been created will have enormous value for future analyses, both at Ericsson and other electronics companies. The intention is to make both the inventory models and the methodology available to all of Swedish industry as a free contribution from Ericsson via the LCA database at the Center for Product-related Environmental Assessment (CPM) at Chalmers.

"This study has gone further than any other," says Ulf Östermark of Chalmers Industrial Technology.

"Simply analyzing the organization provides a new perspective. Currently, Ericsson is at the forefront of development for this type of assessment, and the level of quality is so high that it would be perfectly fine to publish the study in scientific contexts."

When the ongoing third-party examination is completely finished, the study will fulfill ISO 14040-42 requirements. These are the standards for the implementation of life-cycle assessments. Accordingly, the results of the life-cycle assessments can also be used in Ericsson's marketing activities.

Kari Malmström

New global training

Skills development linked with the Ericsson's strategies is becoming a reality for employees in Ericsson's operator segment.

The new global program is starting after the first of the year. Employees will be offered continuous training programs that are adapted to each individual and which result in improved business for Ericsson.

Birgitta Engardt, manager-designate of the training operation, says:

"More than ever, we have to link training programs and skills development to Ericsson's long-term strategic objectives. We have to have a total perspective."

To design programs that conform with the long-term objectives, the training operations have to work closely with the business managers in the segments' various units. How good the programs will be will depend largely on how involved the business managers and the various process owners become in them. But both Birgitta Engardt and Carola du Rietz, who was the project manager for the study, are optimistic.

All the programs are designed to result in satisfied customers and better business. The new "openness" with respect to Ericsson's strategic plans is important for achieving these objectives. Without linkage to these plans, the new unit will not be able to construct programs with the proper content, nor will employees be able to choose the right training programs.

"We see more and more competitors beginning to adopt the same principles," Carola du Rietz notes.

The unit, which will have about 50 employees, will develop customized programs for the key functions in the Operators segment. Pro-

grams will extend over a number of years, with approximately 12 to 15 training days per year. The first programs are being developed. Present courses and training programs will be phased out or modified as the new programs become available. Approximately ten programs are expected to be ready during the coming year.

What lies behind this new way of organizing Ericsson's internal training? Ericsson's customers should feel that we have the right expertise. Employees in the Operator segment must have a clear idea of what is required if they are to continue to be expert and "attractive" in their jobs. It will be easy to find the pertinent training. As noted, the training will be more efficient in terms of both time and money.

During the autumn Birgitta Engardt and Carola du Rietz have made a number of "house calls," as they call them, to gain acceptance for the new concept in various units within the segment and within Ericsson's management.

"We feel very much strengthened by the response we received," Carola du Rietz says.

With the formation of the new operation, Business Training and parts of the Internal Training Marievik operation will be included in the new unit.

"It is not a matter of our employees getting more training, but of being trained correctly," Carola du Rietz concludes.

Until further notice, the earlier addresses are being used to apply to register for courses.

Gabriel Arthur

Further information on the study is available under the Projects heading: <http://networkoperators.ericsson.se/services/mergerindex.shtml>

Semko testing products

The Semko certification company in Stockholm has taken over the personnel and operations of Ericsson Business Networks EMC, along with the telecom laboratory in Nacka Strand. Seven persons from Ericsson are affected.

An agreement covering the transaction was signed on November 29 by Semko's president, Gösta Fredriksson, and Lars E Svensson, manager of the Enterprise Systems business unit.

Semko will test products for verification in accordance with the EMC directive and will measure telecommunications transmissions, for Ericsson and now also for other customers. EMC is an abbreviation for Electro Magnetic Compatibility and involves measuring the relation between electrical and electronic components and determining how they can affect each other in unexpected ways.

"The agreement with Semko means that we can test newly developed products at very short notice, all the way from the design stage to final approval," says Ulf Brandels, manager of the Medium & Large Communications Systems product unit within Enterprise Systems.

"We are continuing to test Ericsson's products in the present premises and with the equipment that is available there," says Lars Sjögren, manager of the laboratory. The fact that we are now also offering our services to other customers means that our resources are being used more efficiently. This gives us a more secure future."

Tests conducted in accordance with the EMC directive and measurements of telecommunications transmissions are necessary if Ericsson is to be able to market its new products.



The Swedish Semko certification company is taking over the operation of Ericsson's EMC and telecom laboratory in Nacka Strand. Lars Sjögren is manager of the laboratory.

Photo: Peter Nordahl

Because Semko is part of the Intertek Testing Services (ITS) Group, Ericsson is now gaining access to ITS' total resources and will at the same time have products approved in markets where it would otherwise have to use its local companies.

Thord Andersson

Ex-employees take over enterprise sales in Austria

Ericsson Schrack BusinessCom AG was created by Ericsson's sales organization in Austria. It began operations early this year. Today it is the country's leading supplier of Ericsson's enterprise systems for small and medium-sized companies.

Ericsson Schrack BusinessCom was established during Rolf Nordström's time as Ericsson's manager in Austria.

"The solution we chose is a good example of how you can convert a direct sales and service organization to an indirect unit," Rolf Nordström says.

Two former employees took over the greater part of the existing sales and service organization for business systems. They are now principal owners, holding 50 percent of the shares between them, and are heading up the company. The president is Stefan Gubi, formerly the sales manager responsible for business systems. Assisting him is Dr. Franz Semmerneegg, an economist, who is the chief financial officer and executive vice president.

Minority holding

Ericsson still has a 15-percent minority holding in the company.

"We are certainly aware that we are taking personal risks," Stefan Gubi says. "But we, the banks and Ericsson are convinced that the project will succeed. Our objective is to be able to list the shares of Ericsson Schrack BusinessCom publicly within a few years."

The prospects in Austria are favorable. The customer base consists of more than 14,000 customers, including those with leasing, service and maintenance contracts. These



Marianne Schilhan and the Ikarus 1000 IP phone from the German company Gesko.

customers are now being handled by the new independent sales company. Ericsson is continuing to work directly with more than a hundred global and other key customers.

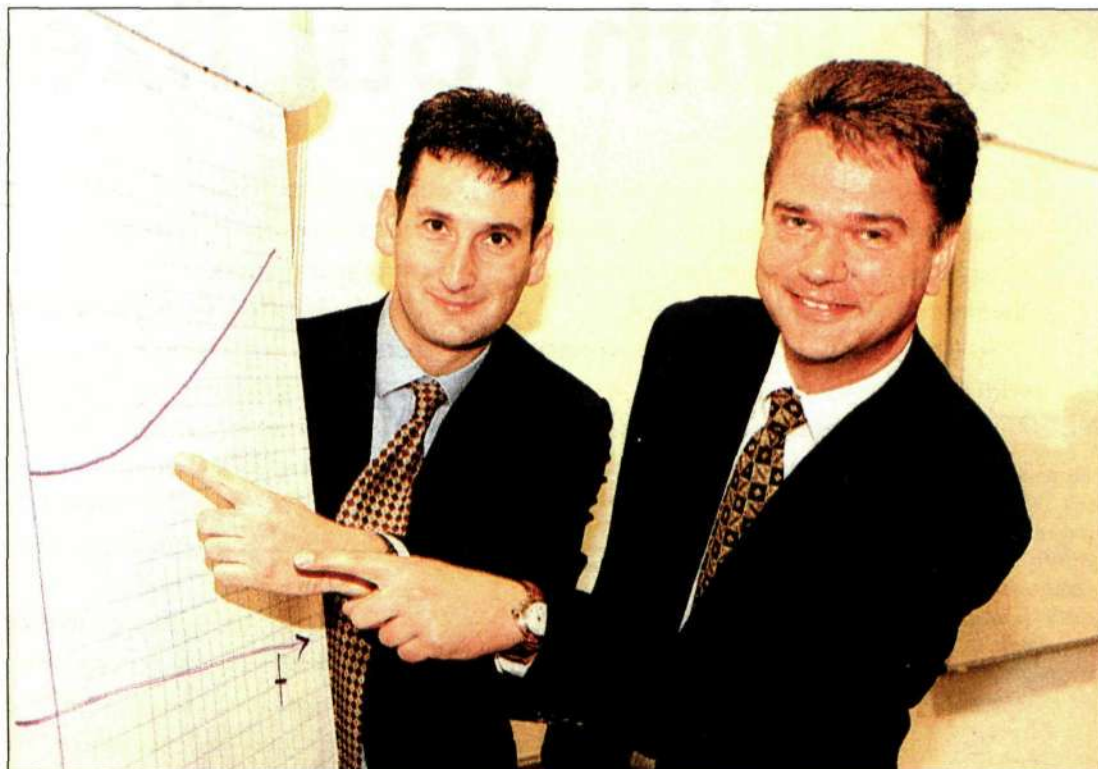
"This is fully in line with our new 'channel' strategy," says Lars E. Svensson, manager of the business unit.

"It is important for the new company to have 'Ericsson' in its name in order to assure our distributors of continuity in the market, and to show customers that Ericsson is also participating in the project," Rolf Nordström says.

Stable platform

With the large customer base, the two entrepreneurs and their approximately 450 employees have a stable platform upon which to stand. The fact that they also chose to include the Schrack name in the name of the new company is an important factor in quickly becoming known in the market.

"Schrack resonates well in Austria," says Stefan Gubi. Since Ericsson bought the tradition-rich



Ericsson's sales and service organization in Austria has been taken over by experienced employees. Franz Semmerneegg, Executive Vice President, and Stefan Gubi, president of Ericsson Schrack BusinessCom, are pleased with the rising sales figures.

Photo: Ericsson Austria

Schrack company in the early 1990s, the name has been absent from the telecom sector for a while. Using the name again now, along with Ericsson's, gives us strength in the market. Accordingly, our marketing costs will be lower."

As many as 220 persons are engaged in service operations alone. This is a core area for Ericsson Schrack BusinessCom, which provides 24-hour service from more than 30 locations throughout the country. Ericsson also purchases services for its key customers from the company.

"We have converted our regional offices into 'expertise centers,'" Franz Semmerneegg says. "The office in Innsbruck, for example, has total responsibility for hotel and restaurant systems, while the office in Graz is responsible for industrial companies."

Broadening of product line

The Ericsson line is being broadened continuously with complementary products. The ISDN system developed by Geska, a German company, is an attractive product of this type.

"Earlier, customers wanted innovative products above all," Stefan Gubi notes. "Now they are asking us for consulting services and other services of various types."

A survey conducted by *Wirtschaftsblatt*, an Austrian financial publication, shows that Ericsson Schrack BusinessCom is already well identified in the market. The duo of Stefan Gubi and Franz Semmerneegg rank a flattering ninth on the list of "Top 400 Managers," regardless of company size.

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Remote upgrades of GSM switches saves time

In just nine days, Ericsson upgraded 21 switch nodes in Turkey, while in Spain 25 nodes were upgraded in seven days. Remote upgrading of GSM switches has become increasingly important in efforts to quickly install new switch software.

Traditionally, upgrading GSM networks has been a slow process in which technicians have had to travel to the various facilities to install new software into the switches. This work took time and cost money, including travel expenses. It also affected network quality and stopped operators from launching new services in a network simultaneously. Due to the intensifying competition among mobile phone operators, suppliers have been exposed to increased pressure to implement switch upgrades quickly, while causing as few disruptions as possible.

First attempt in the U.K.

The first attempt at upgrading switches remotely was made several years ago in the U.K., on AXE switches for wireline telephony. Building on the wireline experience, Ericsson performed its first remote upgrades of GSM

switches in autumn 1997, in Bologna, Italy. Since then, the technique has continued to be refined and is now being used more and more frequently. The actual work is conducted from a customer's Operation and Maintenance Center (OMC) using the Operation Support System (OSS), which is the GSM network's platform for the O&M system.

Erhan Sayin, of Ericsson in Turkey, who managed a project involving remote upgrades of mobile phone operator Turkcell's switches, confirms that this really saves time.

Important for large systems

"Before the project began, two employees from Turkey went to Ericsson Eurolab in Aachen, Germany and learned how to use the program. The project involved three people working on the upgrades. One of the first things we did was to give the customer a demonstration without traffic in the system. Shortly thereafter, we also conducted a First Office Application (FOA), upgrading three nodes while there was traffic in the system. It's important that customers understand the advantages of using this method," says Erhan Sayin.

Remote upgrades of switches are especially

important when it comes to large systems, such as Turkcell's GSM network.

"When we started, we had 21 nodes that needed to be upgraded, something that would have taken up to 50 days using the old method. This time, it only took nine days," explains Erhan Sayin.

Record broken

Ericsson in Spain has now broken that record, upgrading 25 nodes in only seven days. However, personnel at the Spanish company had more experience of this method of upgrading GSM switches than the employees in Turkey, for whom it was an entirely new method.

In addition to being able to upgrade switch nodes remotely, it is now also possible to upgrade several nodes simultaneously.

"We're currently selling the next GSM SW release (R8), negotiating new switch upgrades in the GSM market, and the remote technique is the default method that will be applied," explains Peter Lopez, at World Class Provisioning, GSM Systems, who is in charge of remote upgrading of GSM switches. A new project was recently started at Wireline Systems, with the aim of combining its previous

work with that of GSM Systems, in order to form a single standard. TDMA Systems, assisted by GSM Systems, has also started work on the remote upgrading of its mobile switches. Brazil is the first TDMA country where Ericsson has implemented this technique.

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PROJECT

The work on the remote upgrading of switches is one of many projects included in GSM's comprehensive program of improvements, which is known as World Class Provisioning. The program started almost two years ago and will continue for another year. The objective is to create a viable process of improvements, in order to halve lead times, increase quality ten-fold and quadruple productivity. Around 1,000 persons are currently involved in the program and a total of 8,000 will be affected when the implementation is complete.

Eva Salomonson is managing the program within GSM Systems.

When everyone's using mobile phones, what do you do with your fixed network?

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ENGINE integrates circuit- and packet-switched services into a single core network. You can rationalize your telephony network, at the same time as you extend its power by creating a backbone that's open for multiple services.

The Internet. And the next one.

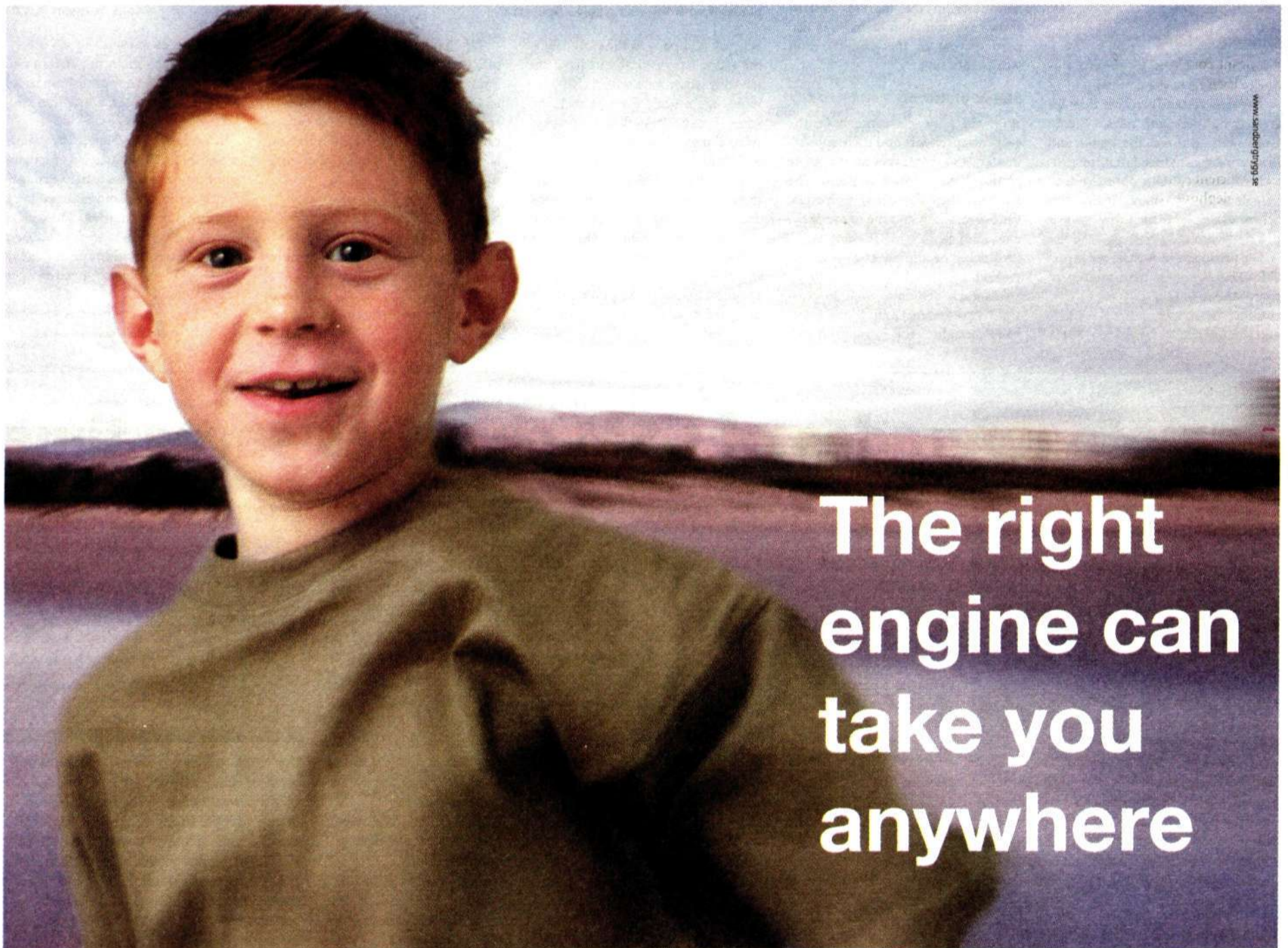
Today that means the Internet, and IP as a delivery mechanism for a host of new services. Some of them will succeed, and earn you millions. Most won't.

But that's the real beauty of ENGINE. It leaves your options open. You don't need to commit to a particular commercial or service offering. Or a particular protocol.

The ENGINE family includes core switches, telephony servers, multimedia gateways and access systems. All designed to integrate with your existing switches, whether or not you bought them from Ericsson.

ENGINE will power your network into an exciting, multi-service future.

As you'll discover, it can take you – and your customers – anywhere.



The right
engine can
take you
anywhere

Engine's power revs up multimedia data network

Multimedia and high-speed Internet access for Ericsson's traditional network operators? Next year, three operators will make it possible when they launch Engine, Ericsson's new solution for voice and data traffic in fixed networks.

Engine is an important step in the migration to next-generation fixed networks. The concept includes both circuit-switched voice and packet-switched data in a single core network. Multimedia services and high-speed Internet access will be a reality even as broadband becomes commonplace. The 3G and next generation solutions of the future will be built on common IP and ATM core networks using high speed routers and switches to transfer voice and data calls between end-user devices and content providers.

Smooth transition

"Engine provides a smooth transition to next-generation networks. Operators can offer high capacity data and quality voice services with significant cost savings on their existing legacy networks," explains Mitch Lewis, marketing manager for the Solutions unit at Wireline Systems.

The Engine concept provides a more efficient means of utilizing existing telephone networks. Ericsson's current AXE switch, which is being installed in a number of countries right now, can handle up to 128,000 voice ports. A 155 Mbits fiber-optic link is connected directly to the switch, thus further increasing capacity. This is the leading circuit switching platform on the market.

In the Engine solution, the Telephony Server, which is based on AXE processors, signalling terminals and software, controls calls and communication applications, whereas the ATM connectivity layer actually switches all calls. The proven AXE platform, combined with Ericsson's

AXD 301 ATM switch, provide the basic platform for Engine.

By having a common network structure for voice, data and video, operators can reduce transmission requirements and drastically cut costs of planning, operation and maintenance. End users will enjoy fast and reliable Internet connections and other multimedia services at a competitive price.

"One of the greatest benefits is that operators will be able to upgrade their networks in stages. This flexibility is an important factor in many respects," notes Lewis.

Flexible

Engine is designed with flexibility in mind, and according to emerging protocol standards, so that operators will be able to install both Ericsson products and products from other suppliers in the same network, making the role of integrator increasingly important.

"In the future, it will be increasingly important for Wireline Systems to assume the role of an integrator. Already, operators are coming to us with requests for tenders that specify costs, deadlines and capacity and are letting us offer to build the system as we see best. This means that we have to be objective and use the best products for the various network components," says Lewis.

Engine is emerging as the symbol for a positive trend and an economic upturn for Wireline Systems.

"Walk around in the corridors and you can see it everywhere," says Mitch Lewis. "Nearly everyone has put up posters from our latest marketing campaign on a wall or a door. Or better yet, stop and ask any employee. I guarantee you that he or she can tell you all about Engine."

1999 marked the turning point financially. In January, the first and largest contract, valued at GBP 270 million, was received from British operator BT. Additionally, in June, Telia Denmark signed an order, and

in August, the most recent order was received from Dutch operator KPN.

"We hope these orders are just the beginning," says Mitch Lewis, who sees tremendous market potential for the system. "Western Europe will

be an important market over the coming year. Many large operators are active in this market, and we are very familiar with their networks. We also believe that significant opportunities exist with other existing

The Engine solution for multi-service networks makes it possible to provide voice, data and multimedia services over a single fixed network. The name Engine symbolizes power, stability and reliability.

Illustration: Syster Diesel



WHAT'S INSIDE ENGINE?

- A Media Gateway connects different circuit switched and packet switched access networks to the common IP/ATM connectivity network. To accomplish this task, it employs Ericsson's AXD 301 ATM switch.
- The Telephony Server controls all PSTN and ISDN services via an ATM backbone network.
- The AXD 301 ATM switch includes router functionality and can handle both voice and data.

or new wireline operators in the Americas."

Wireline Systems' goal is to retain and grow its 35 percent share of the transit market in Europe by building on its strong presence with established operators while targeting new operators for additional growth.

Engine is the result of joint development and business efforts between Ericsson's Wireline Systems and Datacom Networks business units. More than 100 system designers are currently working to further increase capacity in the system, in part through including the new Access 910 access unit.

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Multi-service visions presented in New York

Ericsson presented recently its visions and strategies for next generation multi-service networks at a special event in New York.

More than 200 clients and financial analysts were invited to experience the new Ericsson vision, encompassing telecom, datacom and mobility.

"Thanks to Get Insp(w)ired Ericsson is coming across more and more as an IP company." Mike Thurk, leader of Business unit Datacom Networks and IP Services in Boston, was pleased with the Ericsson event in New York on December 14.

The line of arriving guests was long at Studio 59 in New York's Chelsea Piers on Tuesday December 14. Wireline Systems had invited many clients from global and local operators, as well as 85 financial analysts, to experience the new and innovative market communications tool initiated by the Wireline Sales Challenge team.

People first

"It's where people come first, technology second," the event theme song of the Ericsson Get Insp(w)ired event ran, bringing across the Engine message to the big crowd of global, North and Latin

American clients. The inspirational show opened up the senses with a seminar, mini-fair and an engrossing spectacle, bringing out the inspiring Ericsson vision. "Ericsson used to come across as a very old fashioned company," said Angel Solorio, ABN Amro, one of the more than 85 financial analysts at the event. "Today I learnt that the picture has changed completely. Ericsson is really getting the message of its forceful Internet and data capabilities out there."

Aggressive future

Live demonstrations were made of the Engine network, and all speakers

described an aggressive Ericsson future. Donna Cordner, financial analyst at Société Générale wanted to learn even more. "Education is the key when you are looking for joint financial ventures." "The banks and financial institutions need to learn as much as they can about the new technology. If they know enough and believe in the technology they can be expected to share financial risks."

Ericsson is selected

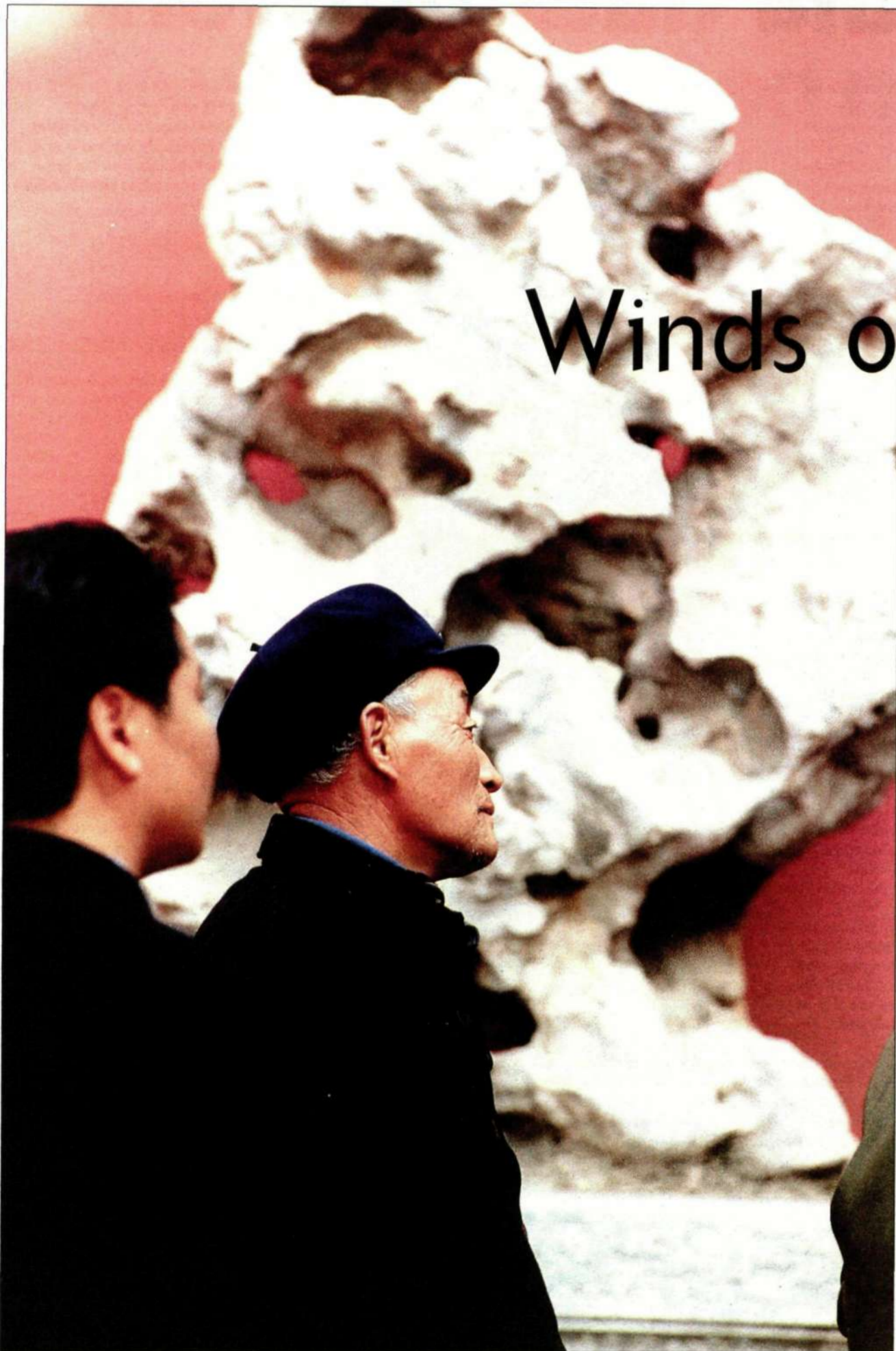
Some 10 wireline operators have already selected Ericsson's next generation solutions during 1999. These commercial network contracts are

worth more than USD 800 million, which the company estimates to be more than 35 percent of the world market.

During the event an additional operator announced a new order. Diginet's has turned to Ericsson Wireline Systems for yet another USD 200 million deal, following up on a first USD 100 million deal last spring. "We chose Ericsson not only because of their important local presence in Latin America, but also because of the great Ericsson people we worked with," said David Ratchik, from Diginet.

Charlotte von Proschwitz

The Chinese market is approaching a period of comprehensive change. After a turbulent year characterized by slower economic growth, the world's most-populous nation is beginning to show several signs of recovery and a more open market, particularly in the telecommunications sector. In the following series of articles, Contact highlights the rapid developments in China. Read more about a country with escalating competitiveness in several industries, a country which has recently taken a giant step toward entry into the World Trade Organization (WTO).



Winds of change

With sales of telecom systems and mobile telephones valued at USD 2.1 billion, China was Ericsson's largest single market in 1998. This year, the U.S. has been Ericsson's dominant market. The comprehensive restructuring of China Telecom, the government-owned telecom giant, resulted in postponements of several large investments during the first half of 1999. During the second half of the year, however, telecom investments in China have risen. In addition, Ericsson has increased its business dealings with China Unicom, the nation's second largest mobile operator, during the year.

"The Chinese economy has shown strong growth for the past several years, but a number of industrial sectors have been weaker in 1999. Ericsson's sales in China will be lower this year, compared with 1998, due mainly to a decline in sales of mobile telephones. It should be noted, however, that 1998 was an exceptional year, with strong public investments in telecommunications and other sectors," says Michael Ricks, President of Ericsson in China.

Demands on local production

Ericsson's activities in China this year have also been characterized by new legislative demands enacted in January, which have introduced more stringent regulation of the telecommunications market. To establish greater control over China's currency flow and trade balance, government authorities have increased their demands on local production and exports.

"The new laws have necessitated radical changes in our operations. Instead of importing most products, we have transferred a substantial part of our product supply chain to China," says Michael Ricks.

"In the past, local production accounted for about 30 percent of all Ericsson products and systems sold in China. Today, nearly 100 percent is manufactured locally by our joint-venture companies in China. Local production covers the complete product range, from mobile systems and switches to enterprise solutions and mobile telephones. We have also increased exports from China to Ericsson's global distribution channels."

Strong growth

Forecasts of activities in the year 2000 show strong signs of continued growth, particularly for mobile systems and data communications. China Mobile, a spin-off from China Telecom and the country's largest mobile telecom operator has a rapidly increasing subscriber base. Due to intensified competition, the company is forced to implement continuous improvements in operating efficiency and higher quality, in parallel with efforts to expand capacity.

"China reports approximately 1.3 billion new mobile telephone subscribers every month. Operators in many of the nation's large cities have reached capacity saturation, and need to expand rapidly. The situation offers strong potential for new contracts next year," says Michael Ricks.

China Unicom, the country's second operator that was established in 1994, now has a market share of about 10 percent. The company was recently granted permission by telecom authorities to start a nationwide IS95 network (cdmaOne) in China. China Electronics Systems Engineering Company (CESEC) already has four test systems based on IS95.

purposes, the country is divided into three regions. Ericsson's main office for the northern provinces is situated in Beijing. The regional office for central China is situated in Shanghai, with offices in Hong Kong and Guangzhou serving southern China. In Beijing, Ericsson also has offices for the company's different product lines, which manage pricing strategies and Ericsson's product portfolio.

Ericsson's business structure in China is relatively complicated. The regional offices work exclusively with marketing and cus-

tomers cultivation. The contract owners consist of Ericsson's joint-venture companies. The business structure was necessitated by new regulations introduced at year-end 1998, whereby all contracts must be signed in yuan, the Chinese currency, which is impossible for foreign-owned companies.

Ericsson has eight joint-venture companies in China, including five production companies. Ericsson also has a wholly owned research center in Shanghai and several smaller development units throughout the country.

Photo: Lars Åström

ERICSSON IN CHINA

Ericsson's business activities in China date back to 1892. In modern times, the company has been represented in the Chinese market since 1985. Ericsson (China) Ltd. currently has approximately 3,800 employees. Most employees are Chinese nationals, with the exception of about 200 contract employees from other Ericsson companies. The head office is situated in Beijing, and Ericsson also operates about 25 branch offices in the provinces.

Contacts with customers are managed via regional customer offices. For business

TELECOM IN CHINA

In the world's most populous nation, a country with 1.3 billion inhabitants, there are approximately 140 million fixed telephone lines. At year-end 1998, the mobile telephony sector consisted of about 24 million subscribers. Today, that number has risen to 40 million users, most of whom use GSM systems installed in all Chinese provinces. Some sections of China also have TACS and cdmaOne networks. The

growth rate among mobile telephone subscribers is estimated at about 1.3 million per month. By the beginning of year 2003, according to estimates by Ericsson, the number of mobile telephone subscribers in China will reach 100 million. Ericsson has about 40 percent of the country's installed base today. Nokia ranks second, with about 17 percent, followed by Motorola, Nortel and Siemens.

Ericsson's revenues in China are primarily attributable to sales of GSM mobile systems. Ericsson has about 40 percent of China's installed base of mobile systems. The company's strongest footholds in the Chinese market have been established in the southern provinces and along the coast, particularly the provinces of Guangdong, Shandong, Heilongjiang, Jiangsu, Liaoning, Guangxi and Hubei.



in Middle Kingdom

"Very substantial investments will be required to establish a new system and compete seriously with GSM networks that have been developed in China since 1993. We believe the best interests of Chinese operators would be better served by investing in GSM with a view toward continued development to support third-generation mobile systems. However, we can also deliver IS95 if they choose to move in that direction. We are now discussing various options with China Unicom," explains Michael Ricks.

Ericsson's business activities in China are based strongly on sales of mobile systems, but sales of mobile telephones and the growing datacom market also offer new business opportunities. However, ongoing changes in China's telecom market, highlighted by new technologies and intensified competition, are placing greater demands on both operators and suppliers.

"We have been number one in the network sector of China's telecom market for quite some time, and we intend to defend and maintain our position of leadership by offering the right products and solutions. We will also ensure that we have the right skills and expertise to meet our customers' needs as new ground rules are introduced in the marketplace," continues Michael Ricks.

Focus on 3G

Ericsson is concentrating heavily on positioning itself in preparation for the introduction of third-generation mobile telephony (3G). Working in cooperation with the China Academy of Telecommunications Technology, Ericsson has operated a test network for WCDMA in Beijing and recently opened a joint 3G Center in the capital city.

Ericsson has also established an open laboratory in Beijing for development of 3G applications. The facility allows operators and third-party development interests to test their services in parallel with efforts by Ericsson to stimulate activities in the 3G-market. Ericsson operates a similar applications lab for operators in Hong Kong, which will also be opened soon to third-party development interests.

To generate increased research cooperation with China, Ericsson participated in a large telecom research seminar held in Beijing at the beginning of December.

"We want to increase our market presence in China and demonstrate our interest in the Chinese research community," says Magnus Karlsson of Ericsson, one of the organizers behind the Future Telecommunications Forum, FTF '99.

FTF '99 was organized by Ericsson and NUTEK (the Swedish Board of Industrial and Technical Development) together with the National Natural Science Foundation of China and the Beijing University of Post and Telecommunications. Approximately 180 persons participated in the forum, including Li Xueyong, Vice Minister of Science and Technology, and Lin Jintong, President of the Beijing University of Post and Telecommunications. Bernt Ericsson, Vice President Corporate Technology Research, was one of Ericsson's most prominent representatives at FTF '99.

Ericsson plans to pursue follow-up programs in the form of workshops already scheduled for next year and another forum in 2001.

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China, with its sheer size and commercial magnetism, can become the world's largest market economy as early as 2020, according to economic experts.

Huge market cannot be overlooked

"Every company that aspires to achieve global market leadership must also become No. 1 in China." This statement made in conjunction with the 50th anniversary of the Peoples' Republic of China this autumn by George Fischer, President and CEO of Kodak, holds true for all sectors of industry. China is quite simply too big to overlook. And the competitive Chinese market reflects this.

China, with its sheer size and commercial magnetism can become the world's largest market economy as early as 2020, according to economic experts. Lured by the market's outlook, virtually every leading international supplier has jockeyed for position with cutting-edge technologies in China and Hong Kong for the past several years. Hong Kong has long served as a gateway to China, and the entire region comprises one of the most competitive telecommunications markets in the world. Furthermore, over the past two decades, the dynamic development of Chinese industry has been unparalleled in terms of growth and modernization. China is a huge market, with a population of 1.3 billion. It is a continent unto itself, comprising 31 provinces – each one equal in size to most European countries.

Takeoff in 1992

Market reform in China began in 1979, when Chairman Deng Xiaoping first invited foreign companies into the country. Since 1992, foreign investments in China have amounted to more than USD 270 billion. After nearly two decades of strong

economic growth, 1999 is the first year foreign investments in China have declined, according to the British financial publication, The Economist.

Unprofitable state-owned firms

China's banking sector has been hit particularly hard in the last years, due to the aggregation of debt to state owned companies. In addition, many of the country's unprofitable government-owned factories have created a threat of mass unemployment. These difficulties combined with the human rights concerns which are well publicized in Western media raise questions over China's medium term economic development.

The growing transition in the People's Republic toward a market economy, has been constantly monitored and strictly controlled by the government. For many inhabitants of China, dynamic economic change and development during recent years has been reflected in higher household earnings and a broader range of consumer products. The increase applies mostly to the country's coastal regions. A large number of high-rise office and apartment

buildings and new motorways have changed the landscape of coastal communities, and a new wave of family-owned companies has changed the business and restaurant cultures in metropolitan areas.

The Middle Kingdom is now facing its most comprehensive economic facelift since the first market economy reforms were introduced 20 years ago. The agreement reached in November between China and the U.S. will pave the way for China's entry into the World Trade Organization (WTO). Free trade will open the Chinese market to completely new forms of competition. First, however, the agreement is subject to ratification by the U.S. House of Representatives and Congress, and the approval of the WTO's 135 member nations. China's acceptance as a new member of the WTO will almost certainly be contingent upon certain changes in the country's protective tariff regulations and demands on local production.

Several large international telecom operators have positioned themselves in the starting blocks for the past several years, establishing local offices in China in anticipation of market liberalization that will allow foreign telecom and Internet operators to conduct business activities in the Chinese market. It is a process that will take several years, however.

Nils Sundström

Leading international manufacturers of consumer products are competing in the Chinese market today with concepts such as global-market product launches and the very latest in new technology.

Chinese consumers want latest technology

Observers outside China regard the country as a nation with rather outdated technology, but one can also find state-of-the-art consumer products here. It is a highly competitive market where leading international players compete with several local manufacturers," says Kinson Loo, Executive Vice President and General Manager of consumer products for Ericsson in China.

Local manufacturers include such companies as Huawei, which produces mobile systems and exports its products to South Africa, Russia and other countries. Several other large manufacturers of electronic equipment are now also planning to start producing mobile systems and mobile telephones.

"As a global supplier, we have completely different opportunities to benefit from economies of scale and resources for research and development. At the same time, however, we also have to ensure that our products are adapted to Chinese market requirements and demands, and it's essential to establish strong local partners," Kinson Loo continues.

Cooperation with Panda

Ericsson has already established a program of cooperation with Panda, a well-known consumer brand name in China. Panda is part owner of a joint-venture company in Nanjing, where Ericsson has one of its two mobile telephone production plants in China. At the beginning of year 2000, the company plans to introduce a completely new and less expensive mobile telephone based on A1018sc, which will carry the Panda trademark.

"Our cooperation with Panda will enable Ericsson to concentrate on a completely new customer segment. The new product will supplement our present portfolio of mobile telephones," says Kinson Loo.

Ericsson's mobile telephones are based on a global platform, but local adaptations of mobile telephones are extremely important to market success in China, according to Kinson Loo. Since 95 percent of the population does not speak any other language than Chinese (Mandarin or Cantonese), the mobile telephones must be equipped with a Chinese user interface.

"We were not as quick as some of our competitors to introduce telephones with programmable Chinese signs for transmissions of SMS, for example. We have now caught up with the competition, however. In a few months, we also plan to launch Bluetooth and WAP products on the Chinese market."

Several global launches

Near the end of September, Ericsson conducted the global launch of its R320 WAP telephone and Chatboard in Hong Kong. Several other new products will almost certainly make their world market premieres in China. It is also extremely important for products to be made available and adapted to Chinese market requirements when they are launched in other markets.

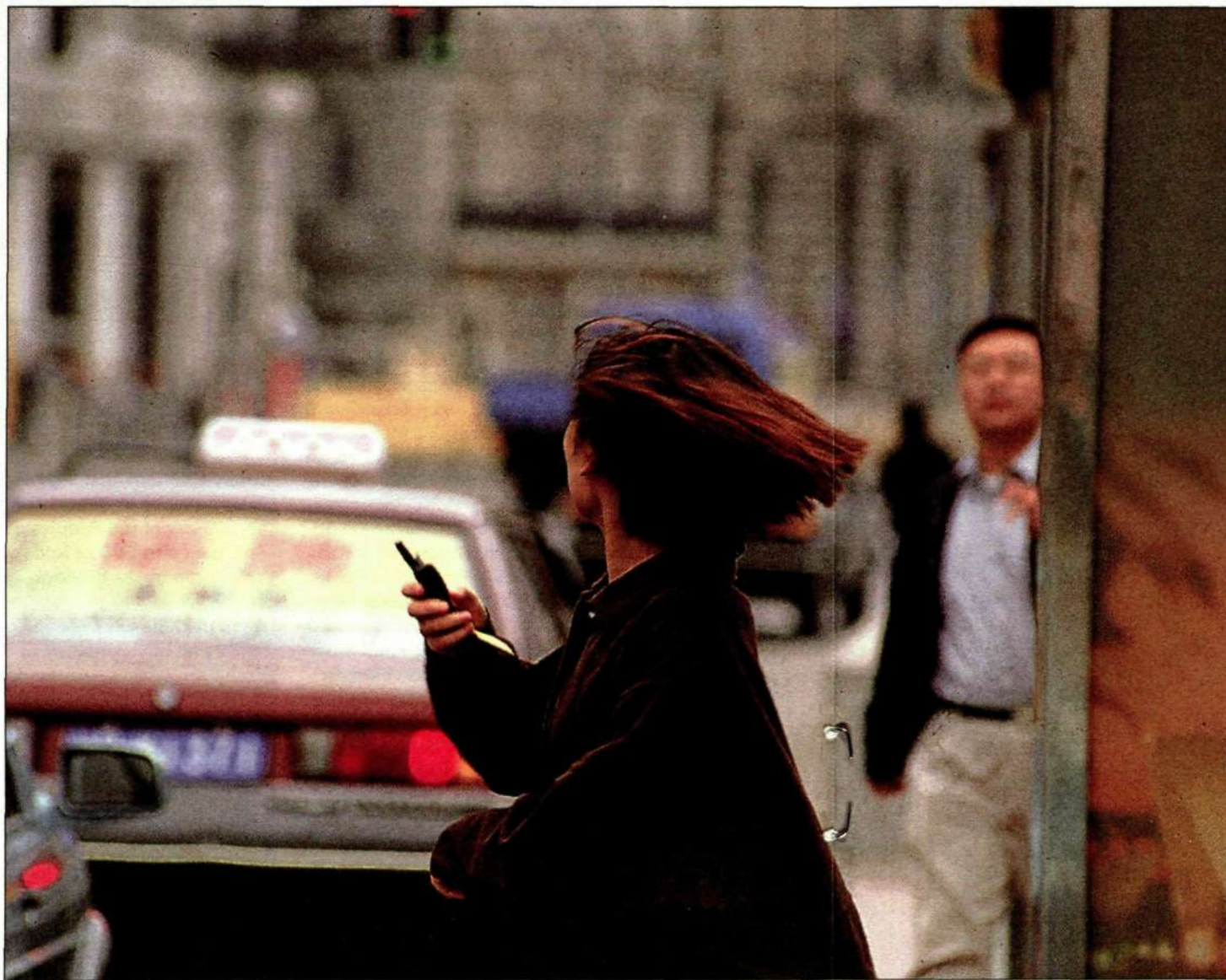
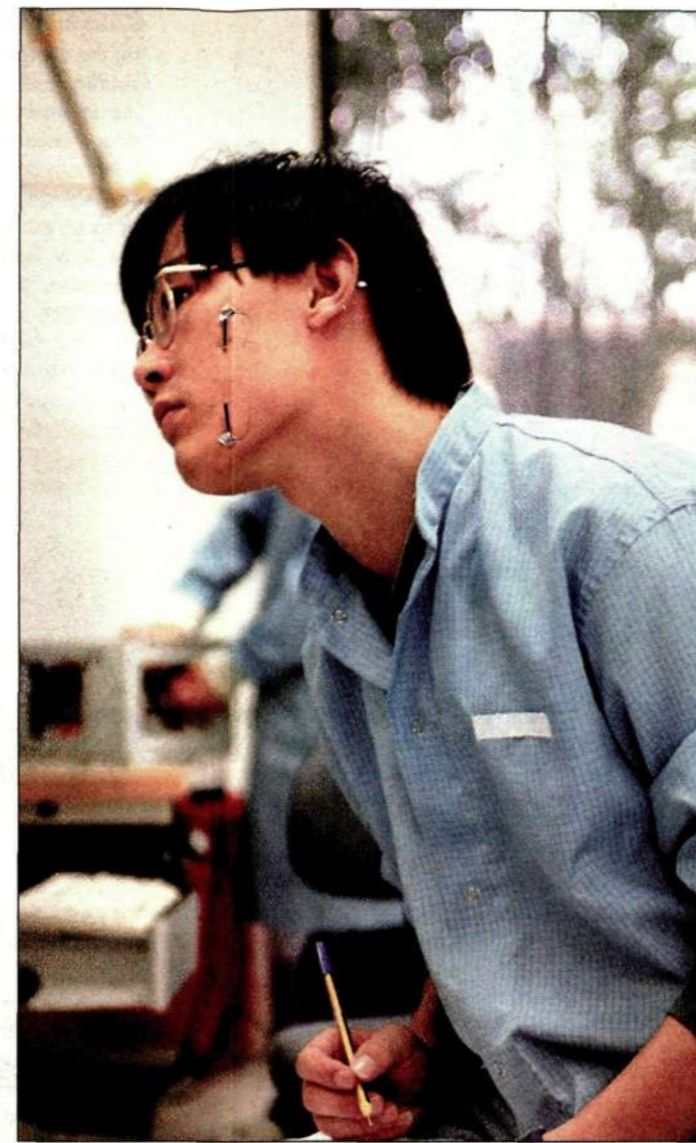
"Local adaptation is extremely important. This might involve color choices or the model number's symbol. There are widespread superstitions and beliefs in the magic of numbers. The numbers 4 and 7 should be avoided, for example, while 3 and 8 are symbols of success," explains Kinson Loo.

How big is the Chinese market for mobile telephones?

"That depends on the strategy a company formulates, how big the company wants to be and what types of products it can offer," Kinson Loo says, explaining Chinese consumer behavioral patterns.

No clear budget

"In the Western world, the private consumer has a more clearly defined bud-



China is still a highly expansive mobile telephone market that places strong demands on new models. Ericsson produces mobile telephones for the Chinese market at jointly owned plants in Nanjing and Beijing. Photo: Lars Åström

get. Consumers know which products they want to buy and when they can afford to buy them. In China, the cost of a color TV might equal an ordinary worker's annual salary. But many Chinese people still buy color TVs. When private consumers in China find a product that is attractive and highly useful, they will try very hard to afford it," he says.

During recent years, Ericsson has projected a strong image as a supplier of consumer products in China. Its favorable image has helped Ericsson even when the company did not have any new products to offer the market.

"Ericsson is one of the strongest brands in the consumer market today. In

brand awareness surveys, more than 40 percent mentioned Ericsson when asked to name a manufacturer of mobile telephones," Kinson Loo continues. "Our goal for the new models launched recently is to capture a Chinese market share of at least 30 percent in year 2000. We are now strengthening our distribution channels in China and increasing the production capacities of our jointly owned mobile telephone plants in Nanjing and Beijing."

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Internet explosion awaits

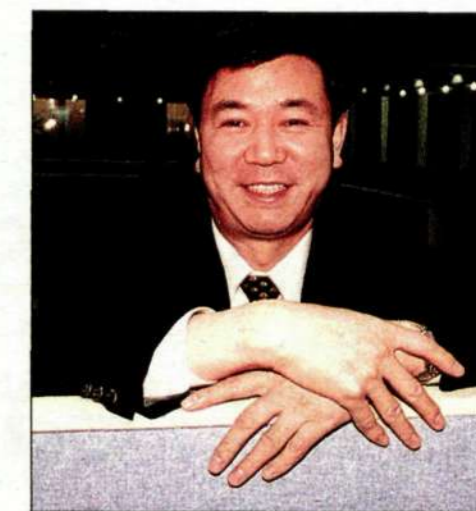
A silent revolution is taking place in China. The driving force is embodied in efforts to seek information via the Internet and a desire to communicate – a quest that is spreading like wildfire. Last year, there were approximately one million Internet users in China. This year, the number has increased tenfold.

Slightly more than 10 percent of China's inhabitants have access to fixed telephone communications, which corresponds to a capacity of about 140 million lines. Most of the lines are installed in the country's more affluent areas along the coast and in the southern provinces. China Telecom, the country's largest operator, expanded its networks strongly in 1998, creating an overcapacity quotient of about 40 percent. The situation offers room for growth in parallel with continued strong network expansion.

Meeting market demand for IP and data communications will be Ericsson's primary concern in the immediate future. Existing networks do not have sufficient broadband to handle the increasing amount of data traffic.

"China is undergoing a process of very comprehensive change under controlled conditions. The transformation is reflected clearly in data communications. Freedom to use the Internet and opportunities to seek information are attracting large numbers of new users. Government authorities encourage greater use of the Internet, as evidenced by the large number of Internet cafés here in Beijing and the establishment of web sites for all the provinces," says Zhang Xingsheng, Executive Vice President and General Manager of Ericsson's Region North. He is also the account manager for China Telecom's nationwide backbone project and contacts with China Mobile and China Unicom.

There are four major operators of fixed and mobile networks in China today and several thousand small Internet providers.



Zhang Xingsheng is Ericsson's manager of Region North in China, which covers half of the country's geographical landmass and 15 provinces. Sales in Region North amounted to USD 900 million in 1998, consisting primarily of mobile systems.

"In the past, customers did not regard Ericsson as a supplier of datacom solutions. They are now beginning to understand that we have the right know-how and the right solutions. But the competition is extremely intense, and we must act more aggressively in our marketing campaigns, projecting a stronger image as a supplier of robust networks for IP-telephony," Zhang Xingsheng continues.

Ericsson booked a strategic contract last year for expansion of an ATM network valued at more than USD 10 million in Shandong Province. The company has also delivered three IP-test networks for customers in Beijing, and works in close cooperation with Chinese operators to develop a variety of complete solutions.

"We are in a transition period, with operators

looking for new packet-based technology and dynamic network growth. However, with the emergence of more successful domestic suppliers and the presence of international players, there is growing pressure on prices. Nevertheless, I am convinced that our sales of fixed systems and datacom in the year 2000 will be slightly higher than corresponding sales in 1999," says Bo Nilsson, Executive Vice President Infocom Systems in China.

A large part of data communications in China will be implemented as mobile systems. Mobile networks are cheaper to build, and China's strong interest in GPRS and third-generation mobile networks is interpreted as a good indication of rapid growth during the next few years.

"We believe that 30-40 percent of mobile telephony subscribers will use mobile data services via their mobile telephones by 2004," says Jan Malm, Executive Vice President Mobile Systems in China.

Over the past four years, sales of mobile systems in China have increased nearly sixfold. The rapid growth in new subscribers is expected to increase next year. China Mobile, a major customer with a nationwide GSM network, places special demands on Ericsson's products and network structures.

"In logical terms, China Mobile consists of one network that is managed by its provincial customers. As a result, the provinces must have the same functionality in order to offer the same services and coverage throughout the country. When mobile users from Beijing, for example, travel to other parts of the country, they naturally want to use the same services that have at home, such as prepaid or various mobile data services. The situation offers very substantial development potential for Ericsson," says Jan Malm.

Nils Sundström

Competition between public operators

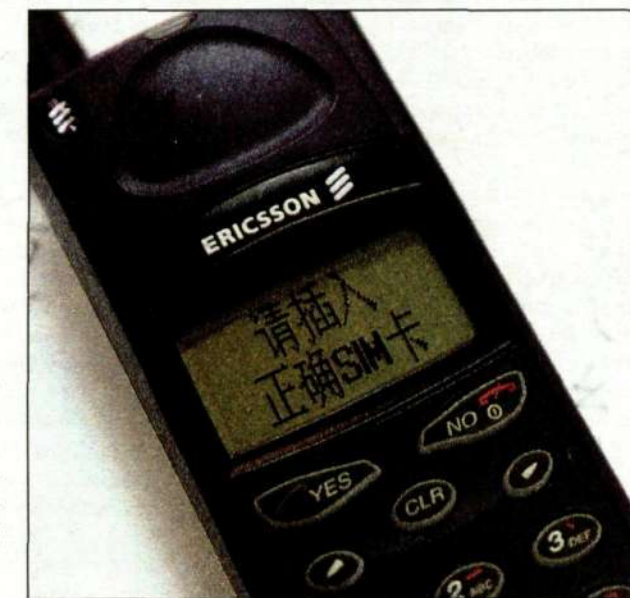
All telecom operators in China today are government-owned. Their ownership status is not a deterrent to tough competition, however, since they are controlled by different governmental departments and operate independently in different provinces.

China Telecom, the country's telecom giant, is regulated by the powerful Ministry of Information Industry, MII. In the spring of 1999, strong demands on increased competition forced China Telecom to divide its operations into four new companies. The new China Telecom assumed responsibility for the country's fixed networks, with China Mobile taking over the wireless networks. Guo Xin is in charge of paging operations, and China Satellite manages the country's satellite communications activities.

Restructuring of China's telecom operations has taken longer than expected, and the organizational formats of the four new companies are still not finalized.

China Unicom, the country's second largest telecom operator, is also regulated by MII. The company works mainly with mobile networks, but conducts some fixed telephony operations. China Unicom also recently acquired the paging company Guo Xin. MII also regulates Ji Tong, which has been commissioned to create a national data network and conduct voice telephony tests via IP.

The Ministry of Defense regulates China Electronics Systems Engineering Company (CESEC), which is a subsidiary of the military. CESEC controls four small trial systems using cdmaOne technology. The Ministry of Railways, MoR, recently emerged as a new competitor in the Chinese telecom market, with plans to expand the country's range of telecom services. The operations are conducted today by three joint-venture companies, including China Netcom, a fixed line operator that is establishing a number of services, including Internet services.



The Ericsson Communications Software Research and Development Co. in Shanghai is the main software development center for Ericsson in China. The company develops access products for the wireline network, value-adding services for the mobile network, and the Chinese user interface and characters for parts of the consumer products product portfolio.

Chinese characters on mobile phones

The A1018 and the T18 are the first Ericsson mobile phones which allow the user to enter Chinese characters for functions such as editing the Phone Book and sending SMS. By using the buttons, the user can form each character line by line.

There are various methods for entering Chinese characters in mobile phones.

The characters can be written in pronunciation form or in their precise written form. There are many Chinese dialects and anyone using the pronunciation form runs the risk that the recipient will not understand the message. This problem does not occur with the standard written language.

In order to be able to read a normal newspaper, a Chinese must understand between 3,000 and 4,000 characters. Ericsson's A1018 and T18 can handle 10,000

characters and western letters can also be used.

Chinese characters are made up of strokes, according to a special set of rules. After making the first strokes, the user is given fast alternatives and the possibility to select the intended character. It is thus unnecessary to enter all the individual strokes. Earlier Ericsson phones in the Chinese market, such as the GH398 and GH688, have only had set Chinese characters in the display.

Nils Sundström

Nils Sundström



Rapid telecom development in China has also increased operator's need for training. At Ericsson China Academy in Beijing, customers are offered courses in Western-style management and business philosophy.

Hot interest in Western courses for managers

"The training program has taught me to formulate strategies that make me better prepared to meet future challenges." Lin Zhen Hui, a deputy general manager of Guangdong Mobile Communications, summarizes his experience from an advanced management training course he attended at Ericsson China Academy.

The dramatic development of China's economy has also increased the need for training and education among Chinese telecom operators. Ericsson China Academy in Beijing offers customers training programs in Western management and business philosophies.

"Participants want to know how operators in other countries manage their networks, how they plan their business economies and how management responsibility is delegated," explains Liu Lu, acting manager of Ericsson China Academy.

The training institution was established two years ago and now offers 30,000 student-days per year. Its training courses are geared towards both Ericsson employees and customers. Most of the curriculum consists of advanced technical courses focused on Ericsson solutions and systems. Recently, however, there has been a sharp increase in management training programs at a level corresponding to Master of Business Administration (MBA).

Ericsson is the first foreign telecom supplier to offer this type of training in China. The programs strengthen various forms of cooperation with customers.

"Deregulation of the Chinese telecommunications market has made it much more important for our customers to increase their business efficiency in order to compete successfully with other companies. We have noticed a very strong interest in Western management training programs," Liu Lu continues.

The most comprehensive management training is designed as a two-year MBA program comprising several different focal areas. The course is offered in cooperation with a number of leading international universities. Today's 78 participants represent all parts of China, with the majority coming from different provincial companies operated by China Mobile.

Lin Zhen Hui of Guangdong Mobile Communications is attending a mini-MBA course conducted in cooperation with Australia National University. The course comprises five one-week modules.

"So far, I am particularly satisfied with the courses on business planning and account management. They have helped me solve problems at my job, and the training is important for my future professional career," says Lin Zhen Hui.

Ericsson also offers a two-week business course, Top 200, which is designed mainly for telecom operators. The participants consist of 200 representatives of management personnel working in sales, marketing, technology as well as operations and maintenance.

"The practical knowledge we offer is highly appreciated. Guest lecturers have included experts from Telia Academy in Sweden and management personnel from Telia Norway and SmarTone in Hong Kong, who discuss the operations of their networks. We have received several requests for other customized training courses for customers in different provinces," says Liu Lu.



Liu Lu



Lin Zhen Hui

Nils Sundström
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Production at Ericsson Simtek's plant takes place around the clock in three shifts.



Chinese plants increase production

Ericsson's jointly owned plants in China are in full swing. The microelectronics and energy systems plant in Jiading, outside Shanghai, has tripled its sales to approximately SEK 300 million during this year.

"Local production is a necessity to ensure future supplies to the Chinese market," explains Peter Johansson, head of the Shanghai Ericsson Simtek Electronics Co. Ltd., which was established in March 1996.

The company, which manufactures microelectronics components and energy systems for the telecom industry, is 80-percent Ericsson-owned. The remaining 20 percent is owned by Shanghai Simtek Industrial Ltd.

Greater exports

It is regarded as highly positive by the Chinese authorities that Ericsson, in addition to assembly and production of telecom systems and mobile phones, also has components production in China. This production is carried out at Ericsson Components' Energy Systems and Microelectronics business unit. Ericsson Simtek's products are mainly destined for the Chinese market, but exports also provide a significant share.

"Plants always require economies of scale, therefore we also supply our global distribution channels. We also endeavor to recruit all Chinese telecom suppliers as customers for our components as well as the operators for our systems. Sales outside Ericsson boost our competitiveness, and serve as very good references" says Peter Johansson.

During the past year, Ericsson's jointly owned plants in China have received increased assignments. There have been major changes in the way foreign companies do business in China with the authorities' demand that all telecom business be carried out using local currency. Accordingly, business is channeled via the jointly owned companies.

"We are, therefore, not only responsible for production, but are also contract owners and have the business license to sell products and handle deliveries. We also do the marketing and sales activities in close cooperation with Ericsson China (ETC)," Peter Johansson continues.

Modern plant

Ericsson Simtek's plant in Jiading is 3,500 sq. m. in size and is extremely modern compared with many other production premises in the area. The turnover of staff is very low and it is noticeable that the majority of employees are content.

"Most of the employees have an education equivalent to an upper secondary engineering course. The University of Shanghai also has a branch in Jiading, so that it has been easy for us to attract well-



Ericsson Simtek's plant in Shanghai is a good example of cooperation between Ericsson and a Chinese company. The company manufactures energy systems and components for telecom systems. Sales have been steadily increasing each year and the plans for next year include starting to market the Bluetooth chip. Managing Director Peter Johansson is shown speaking with Ying-Jun Mao, Vice Managing Director.

educated employees. The plant is not as fully automated as, for example, the one in Stockholm, but the quality is of the same high level," says Ying-Jun Mao, who is production and quality manager at the plant.

The number of employees at the plant has also increased. In 1997 there were 80 employees and sales were CNY 40 million, which is about the same amount in

Swedish kronor. Sales are now approximately CNY 300 million and the number of employees has risen to 180, including more than 20 salespersons in the provinces. Only six employees are non-Chinese and they are employed on foreign service contracts.

Nils Sundström

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Håkan Johansson is Ericsson's manager in Libya, where the weather is hot but the business climate is cool, at least right now. But all signs indicate that the temperature for business is rising.

Ericsson keeps watch in Libya

The hottest place in the world is located only a few miles south of Ericsson's head office on the outskirts of the capital city of Tripoli. There, in 1927, a reading of not less than 58 degrees Celsius was recorded in the shade!

Håkan Johansson, Ericsson's manager in Libya, may not be used to such record temperatures, but he is accustomed to hot weather.

"I like it here," he says. "I have worked in the Middle East since 1974, and working and living outside Sweden has become a way of life."

Håkan has been in Libya for slightly more than a year and a half. It is not exactly the liveliest business area in the world, but Håkan has prospects of speeding up things, based largely on his very substantial experience in other Arab countries such as Morocco, Bahrain and Egypt.

"The period immediately ahead looks promising for Ericsson," he says.

Many foreign companies have had problems in Libya, mainly because the country has been subjected to three different trading blockades of various types. The United States, the U.K. and the United Nations have put pressure on the country, due to its foreign policy and their suspicions of terrorism.

Trade blockades

The American trade blockade is probably the one that has had the greatest impact on Libya.

"Ericsson once had about 200 employees in Libya," Håkan says. "Today there are around 110, many of them local persons."

Ericsson has been operating in Libya for about 30 years and the fact that the company has survived is remarkable. Many companies left the country during the tough years. But now things look brighter since Libya has handed over the two men who are suspected of having been involved in the attack on the PanAm jumbo jet that exploded over Lockerbie, Scotland, in 1988.

I traveled overland to Libya from Tunisia. And when I told Libyans that I was on my way to Ericsson, a number of persons exclaimed: "Aha, telephones!"

Håkan Johansson was happy to hear the connection they had made.

"We believe that a change is under way in Libya, that the country will become more open to the rest of the world," he says.

And that naturally means new opportunities, in part because American and British banks can now open offices that were formerly blocked.

Libya, which is led by the controversial Colonel Muammar Qaddafi, likes to invest in gigantic industrial projects that require substantial money and other resources.

Qaddafi's wish list includes expansion of the airport in the capital city, a new hospital and a rail line from the Egyptian border to the Tunisian border. The line would be approximately 1,800 kilometers long and would run along the Mediterranean coast a route that would be 200 kilometers shorter if one crossed the desert.

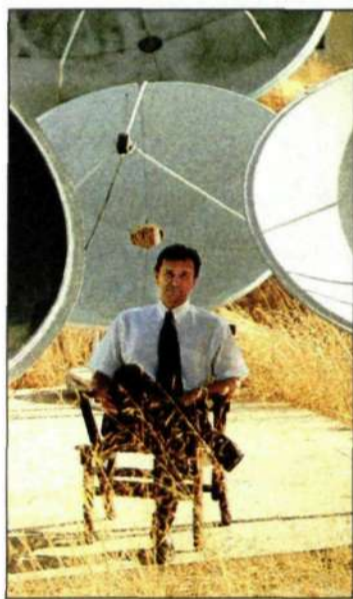
This offers Ericsson good possibilities to obtain orders. Mobile telephony is rather new in Libya, where there are slightly more than 26,000 subscribers today.

Mobile networks cover spots along the coast, mainly around the capital city of Tripoli, where people live. The Libyans want to cover the entire 2,000-kilometer coastline.

"Mobile telephones are very popular," Håkan says. "But a subscription is more expensive than in Sweden. We are building stations, AXE switches, and we are, of course, selling telephones."

Ericsson has already built half of the existing wireline network in Libya.

Libya plans to expand its mobile network to serve at least 100,000 persons, quadrupling the



Håkan Johansson is Ericsson's manager in Libya. It's a rather exacting job.

HÅKAN JOHANSSON

Present assignment: Ericsson's manager in Libya.

Age: 47

Family: A son (26) and a daughter (20).

Comes from: Teg, outside Umeå, Sweden.

Background: Paratrooper and M.B.A.

Leisure time activity: Studying for doctor's degree in business administration, will complete studies in December 2000. Plays soccer and tennis.

Reading preferences: The local Swedish newspaper "Västerbottens-Kuriren" via Internet. Business Week and National Geographic.

TV preferences on TV: Swedish Television via satellite.

Favorite foods: Fish and pasta.

Beverages: Alcohol is prohibited in Libya. That leaves juice and Cola.



In Libya there are a couple of remarkable Roman city ruins – Leptis Magna and Sabratha – that can compete with the best in Europe.

Photo: Christer Gerlach

number of subscribers in a short period. The expansion may be worth as much as a billion Swedish kronor.

"The problem lies in the shortage of foreign currency," Håkan points out. "But we can consider bartering exchanging Swedish goods for Libyan goods."

Currency is one problem. The Libyan dinar is grossly overvalued, with an exchange rate of approximately 18 Swedish kronor for one dinar. The authorities know that the rate is artificial and that it is continuously being pressed downwards.

Ericsson is paid in Swedish kronor and this arrangement works quite well. A small portion is paid in local currency at the official rate.

Selected subscribers

Libya has finally allowed the Internet into the country, but the network is not available to everyone, only to selected subscribers. A server has been set up in Tripoli. But the authorities are trying to control the flow of information and are cracking down on politics and sex.

Development of the Internet is proceeding slowly, due to the American technology embargo that not only prohibits American companies from doing business. Foreign companies can also be hit by American sanctions.

"But now people can at least buy modems, computers and mobile telephones," Håkan notes. "They couldn't do that before."

There are good possibilities that the United States will ease its embargo, but probably not before the presidential election in November 2000,

Great Britain has already resumed diplomatic relations and British Airways has three flights a week to Tripoli. An "opening" is indeed under way.

"There will be an enormous change in the next two or three years," says Håkan.

It will then be a matter of being prepared. And Ericsson has good prospects.

Ericsson has a well-equipped compound in Ben Gashir, a few miles south of Tripoli. Nearly all of the staff members live there. Many foreign companies have similar arrangements.

Local employees

Of the 110 employees, five are Swedes. Half of the other 105 come from all parts of the world. About 50 are Libyans.

"We want local employees," Håkan says emphatically. "That's where our future lies."

But there is a shortage of engineers. The training program is certainly quite respectable but, since the country is so isolated, people have had no perspective, no inspiration from other directions. At times, there is a lack of ability to solve problems to improvise. People work according to books and follow them to the letter.

There is also a shortage of foreign languages. Everything is in Arabic street signs, operating instructions, newspapers, television...everything. That's Qaddafi's official policy and way of demonstrating his attitude toward the outside world.

"But this will change," says Håkan. "Libya is opening up."

Christer Gerlach



Christer Gerlach, who reported on Ericsson in Libya, is a journalist and author. He recently returned to Sweden from a trip by car around the Mediterranean. He has written three travel books and has been named by the Guinness Book of Records as the world Champion in lone car travel.

A land of sand on a sea of oil

Libya consists of a desert that floats on a sea of oil. Today, operators are pumping 1.3 million barrels (159 liters per barrel) per day. And there are another 29 billion barrels under the Sahara sand.

The country produces a modest amount of fruit, vegetables and textiles. Libya is mostly desert. Only two percent of the land is cultivated.

Libya has 5.6 million inhabitants, plus untold hundreds of thousands of guest laborers. They come from as far away as Thailand and the Philippines to work in Libya, but most of them come from such other poor Arab countries as Egypt, Algeria and Mauritania. Many African blacks from the countries south of the Sahara enter Libya illegally.

The country's strong man is Colonel Muammar Qaddafi, who led a military coup against the old

king Idris in 1959. Qaddafi is one of the more unusual personalities in world politics. Officially, he is only the leader of the Libyan revolution. In reality, he probably controls most things in the country.

The country is denounced for financing and protecting terrorists who attack the United States and Great Britain in particular. Over the years, Qaddafi has allied himself with Idi Amin, the former dictator of Uganda, among others.

Relations with neighboring countries are tense. In 1977, Libya attempted to occupy the northwestern parts of Chad.

BRIEF DATA

Average disposable income per year and Libyan resident in 1998: SEK 54,000.

(Sweden: SEK 169,000)

Number of telephones in Libya:

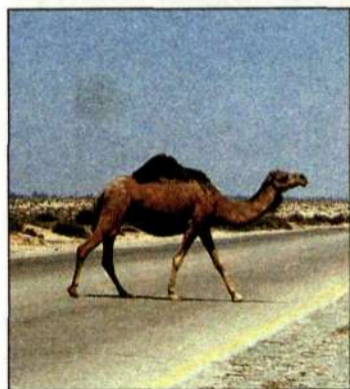
One per 17 persons.

(Sweden: One per 1.6).

American fighter aircraft have exchanged fire with Libyan forces on a number of occasions. In 1986 President Reagan sent American aircraft into Libya, presumably in an attempt to kill Qaddafi in his home.

Libyan agents are blamed for being behind the bombings of an American airplane over Scotland and a French airplane over Niger.

Christer Gerlach



There is a great deal to see in Libya, but few people visit the country. And the greatest attraction is really the absence of tourists.

The worst danger is the traffic

► Libya is a safe country. The amount of crime is small, as in most Arab countries where Islam has great influence.

But the desire for western goods sometimes becomes excessively strong. One of Ericsson's employees was involved in a "car-jacking." The bandits, who carried machine guns, overpowered the driver and stole a car. Otherwise, traffic is the worst danger. Just before Contact's reporter visited the country an Ericsson employee was in a collision with a camel in central Libya.

People drive fast, carelessly and poorly and accidents are ghastly since no one has a safety belt.

Ericsson maintains its own workshop for its cars, most of them Volvos.

"It's one of the best workshops in the city," Håkan Johansson says. "We take care of other people's cars, too."

Tourist attraction in Sahara deserted

Libya can become a major tourist country. It has miles-long empty sandy beaches. The Sahara often extends up to the Mediterranean.

Along the coast, there are a couple of Roman city ruins – Leptis Magna and Sabratha – that can compete with the best in Europe.

Down in the Sahara, there are remarkable lakes, extinct volcanoes, golden sand dunes and exotic oases.

There is much to see in Libya, but few persons travel there. And the greatest attraction is really the absence of tourists. But a few Germans and Italians do visit the country.

There is a shortage of hotels and restaurants, and a "touristic" infrastructure is lacking. Hotels are expensive. The roads are excellent. The traffic is highly dangerous.

Exclusive visa

British Airways and Alitalia, among other airlines, now have flights to Libya. Ships come from Malta and other starting points.

There are two points of entry for foreigners, one in the West (from Tunisia) and one in the East (from Egypt).

The Libyan Embassy in Stockholm will issue a visa only if you have an invitation from a person or company in Libya. But the Embassy can recommend a travel agency that can arrange an invitation. Libya will not admit anyone whose passport contains an Israeli stamp.

The Libyan currency is the dinar and, according to the official ex-

change rate, it costs 18 Swedish kronor, which makes Libya one of the world's most expensive countries.

The black market exchange rate is illegal but common, and Libya suddenly becomes an expensive country. A liter of gasoline costs a krona, and a liter of diesel fuel only 50 öre. Most travelers exchange their currency for dinars in Tunisia or Egypt.

Friendly people

Libyans are very friendly, interested in people, helpful and eager for contacts with foreigners. Arabic is the official language, and all signs are in that language. Educated people speak English. Elderly persons often speak a little Italian. Along the border with Tunisia some people speak French.

The police are numerous, but they act correctly in most cases. There is reason to believe that there are many plainclothes policemen.

When Libya opens up, it will be possible to take a fantastic trip along the eastern Mediterranean from Tunisia, through Libya, to Egypt and then on to Jordan, Syria and Turkey.

The best guidebooks on Libya are German, Gerhard Göttler's "Libya von Leptis Magna zum Waw an Namus," or David Steinke's "Libyen."

Christer Gerlach



One of the goals of the ROS program is to reduce customer complaints to zero.

Illustration: Kerold Klang

Holistic attitude improves service

Ericsson's wireline products are high quality. Customer complaints are rare for AXE systems. Even so, customer relations are far from problem free at the Wireline Systems business unit.



Leif Stensson and Mats Malmström, of the Wireline Systems business unit, are in charge of the ROS program. Photo: Lars Åström

Since last summer, the ROS program at the Solutions units has been working on ways to solve shortcomings and to quickly get new products out to customers.

The ROS program – which stands for Roll-out Support – is designed to fight tunnel vision, sub optimization and shortsightedness.

A year ago, the Wireline Systems business unit came to the realization that too much time was elapsing between the signing of contracts and completed, problem-free installation of switches for customers. It was decided that the ROS program should be implemented to deal with shortcomings within the organization.

"Simply put, we've been bad about listening to our customers. We've been too technically oriented. Now we've found a way to make improvements," explain Leif Stensson and Mats Malmström, who are overseeing the ROS program.

Problem solving

Approximately twenty people are involved in the ROS program, including representatives in customer support, development, marketing, sales and other areas. Together, they quickly deal with problems that arise when new products are brought to market.

"The products we're selling and installing now are mainly Local 7, a switch for access networks; Transgate 5, for international transit traffic; and Translocal 4, a combination of the two, aimed primarily at smaller and new operators," says Mats Malmström.

The group has learned lessons from the rollout of the previous version – Local 6. As a result, the group is focusing on four areas of improvement: ensuring that the product is complete upon delivery, product quality, keeping to schedules and

quickly responding to customer requests.

Holistic attitude

By sitting down together, the group can quickly and easily solve problems as they arise. In the past, people have worked more independently and were unaware of what was happening with the product during the next phase.

"We're trying to generate a holistic attitude among everyone involved," says Leif Stensson. "The engineers have not always understood what is important for the customer."

The goal of the ROS program is to reduce customer complaints to zero. A goal that they are well on their way to achieving.

"But we still have some way to go to rebuild confidence again," says Mats Malmström.

The areas that have experienced the most success are product quality and customer response time for assistance with requests and questions. Software quality has also increased.

"In the future, we hope that we'll be able to operate closer to our financial goals, so that we can see directly how we're doing," says Leif Stensson.

The ROS program will be evaluated at the end of the second quarter, but both Mats and Leif hope that this method of operating will become permanent.

Patrik Lindén

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http://ws.ericsson.se/projects/ros/homepages/index.html

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Bidding on three levels for 3G

The age of Third Generation mobile phone systems is fast approaching, and bidding is in full swing at the GSM Systems business unit. Over the next year, approximately 75 bids for Third Generation systems will be written and submitted. In order to handle this large task, the company is following three different tracks.

"Currently, we're working on six concurrent bids," explains Jonas Högborg at GSM Systems, who heads the 3G Bid Management unit.

There are several kinds of bids. The first kind is more general and is usually referred to as a Request for Information (RFI). In such cases, customers are interested in getting an understanding of what the company can offer. These inquiries are often submitted to numerous suppliers. A second kind of bid is known as a Request for Quotation (RFQ). In such cases, customers are looking for a more detailed bid that includes prices, delivery times and so on. These two kinds of bids are the most common and this also applies to 3G systems. The main difference is that for 3G, several licenses will be issued simultaneously in each country.

Of the bids that Jonas Högborg and his colleagues put together, two-thirds are in response to the latter,

more detailed quotation requests, while one third are of a more general nature. In addition to those two kinds of bids, there is a third variation, where Ericsson, in cooperation with a future operator, submits a joint license application.

Third Generation bids are divided into three tracks – Front Track, Center Track and Local Track. Front track bids pertain to a few major operators and involve significant participation

from both system and product management. Ericsson develops a product portfolio jointly with the operator, with the latter providing input on the design. These bids are always managed centrally in Stockholm.

Center track bids are generated by Ericsson's local companies around the world, but are assembled in Stockholm, where engineers convert local company documentation into technical solutions. These bids in-

clude product portfolio presentations, highlighting the advantages for customers.

With local track bids, it is the local company itself that creates the bid. However, the first 3G bid in every country must always be created together with GSM System's Bid Management group in Stockholm. At present, there is a shortage of expertise at the local level to assemble advanced 3G bids, which is why a

training program has been started. "Currently, there are around 30 people who work here in Kista on bids. On average, it takes approximately four weeks to put a bid together, but we're reducing the amount of time. By further developing the tools we have, we can mechanize the work in a shorter period of time," says Jonas Högborg.

Gunilla Tamm

gunilla.tamm@lme.ericsson.se

Hands-on training in writing bids

Ericsson has developed a training program for employees from local companies to help them learn the methods and tools for preparing 3G bids. These processes were prepared by the unit about a year ago. A number of people from different countries are present in Kista in Stockholm to acquire know-how through practical work on bids, usually for two or three months at a time.

Alistair Ferguson, from Ericsson Australia, and Mika Leskinen from Ericsson Finland, are two of these people. When they move back to their local companies, they will be in a position to better manage work on future bidding processes.

"This has been a very busy time, very instructive, but without any stress," says Alistair Ferguson, who has a marketing position at Ericsson in Australia.

He arrived in Kista in June and will return to Australia in January. With a German colleague as mentor, he worked as a Bid Manager for a bid tendered to the U.K. company Energis.

During this period, Alistair has received on-the-job training and has used a standardized method of working. In addition to Energis, he has worked on another two bids.

"It is important to focus on the customer and the customer's needs

when making bids and this particularly applies to 3G as customers are uncertain about how to capitalize on an investment in 3G," he says.

Mika Leskinen, a product marketer at Ericsson in Finland, was in Kista from August until the end of October and participated in the bidding training program. Just like Alistair Ferguson, he worked on the Energis bid.

"I was one of the first people to participate in the program, so the

framework for the training was just beginning to take shape," he says. "I also think that this has been a very educational period and the most valuable aspect has been the network of contacts which I have established. I have learned to use the tools that are available for bidding and I will certainly make good use of them when I am working on GPRS and 3G bids back home in Finland."

Gunilla Tamm



Alistair Ferguson



Mika Leskinen

Single customer survey improves results

What do customers think about Ericsson as a supplier? In the past, in order to find an answer to that question, business units, market units, local companies and even product units have all conducted their own customer surveys. These have been carried out using various methods and at varying intervals. Starting next year, coordinated surveys will be conducted in all countries and business units instead.

In the old telecom world, where the customers were major telephone companies, it was possible to achieve customer loyalty even without customer satisfaction. Today, that is no longer the case.

"No, not at all," says Jan Wäreby, Executive Vice President for the Europe, Africa and Middle East Market Area. "Now that computer companies are entering the telecom industry, products have open interfaces, and development is occurring at a furious pace, satisfied customers are more important than ever."

Joint effort

"One way to introduce customer satisfaction as a means of control within an organization, is to implement a common reporting method. For example, we measure lead times, delivery accuracy, and profits in a uniform manner throughout the company. We need to do the same when it comes to reporting customer satisfaction. Since we have many global customers, it's important for our Global Account Managers to review survey results together with customers, and

to make comparisons. Satisfied customers are the basis for both profitability and new deals," says Jan Wäreby.

A closed system is now being implemented, with an annual customer survey, followed by analysis, communication with customers, and a program of steps to take – both centrally and locally, as well as follow-up by Ericsson Management Systems.

"By conducting an annual customer satisfaction survey, uniform

for the entire company, we'll receive data that provides better indications, while at the same time avoiding bothering customers more than once," explains Marie Brandvold, head of the Global Customer Satisfaction Survey Program.

Today, a customer might respond to the same questions posed from several different places within Ericsson.

This uniform, annual survey will first be implemented in the Network Operators segment, in those countries where the segment has customers, eventually expanding to the entire company. During the first year, customers from approximately 90 countries will participate. The Consumer Products business seg-

ment already conducts annual customer surveys in 37 markets. In order to create synergies, those surveys will be linked to the new survey being conducted by company management.

So that customers have the opportunity to respond anonymously, client interviews will be conducted by an outside research company, Research International. By conducting interviews at Ericsson's business and market units, Research International has developed a list of items that should be measured among Ericsson's clients and created a questionnaire based on those items.

"Ninety percent of the questions are the same for everyone, but

there's also an opportunity for local companies to ask additional questions," says Marie Brandvold. "Most customer interviews are conducted via telephone, although in some instances they are done via the web, while in some countries personal interviews are more appropriate. Customer surveys will be conducted by Research International employees and will be administered simultaneously in all countries."

A database, which will include reports for each client and each country, will also be created. At every Ericsson company, there will be a person responsible to ensure that the appropriate customers are surveyed and that the results are communicated and followed up on.

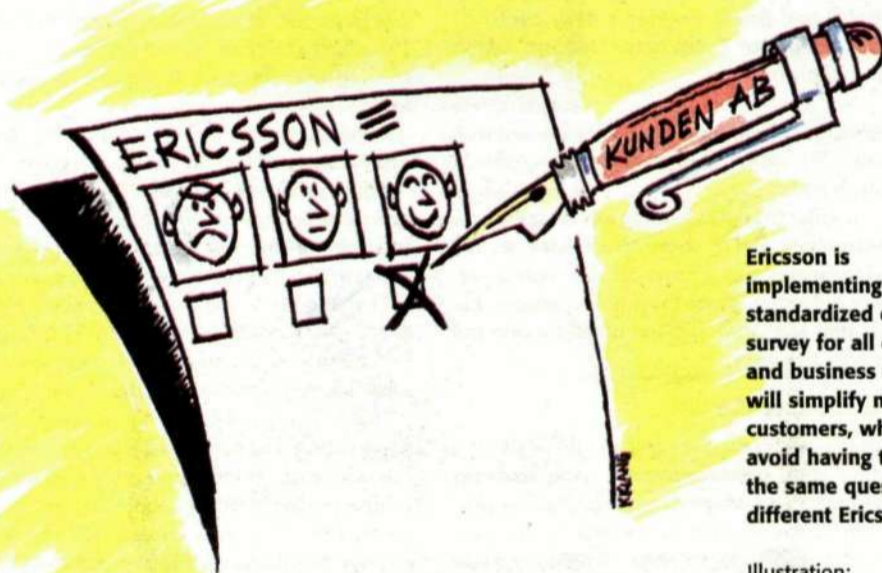
Starting in January

Customer interviews will be conducted in January and February of 2000. Preliminary results, dealing with overall customer satisfaction, will be presented at the end of February. Other results will be announced at the end of March.

"It will be easy to take measurements, make comparisons and follow up on steps being taken. It will also relieve customers from the burden of having to participate in surveys from various units within Ericsson. Moreover, it costs less to conduct one single customer survey," says Bert Nordberg, head of Ericsson Services."

Gunilla Tamm

inside.ericsson.se/customer_satisfaction/



Ericsson is implementing a new, standardized customer survey for all countries and business units. It will simplify matters for customers, who will avoid having to answer the same questions for different Ericsson units.

Illustration:
Kerold Klang



Marie Brandvold

Headquartered in a northern Stockholm suburb, the Swedish general agency for BMW, Rover, Land-Rover, MG and Mini has row upon row of gleaming new automobiles on display.

Photo: Lars Åström



Quality telephone culture at BMW and Rover Sweden

People who buy luxury cars also expect their dealerships to provide high quality telephone service. That was the rationale behind BMW and Rover Sweden's decision to choose an Ericsson solution, supplied by systems integrator TietoEnator Dotcom, when the time came to upgrade their communications platform.

Headquartered in a northern Stockholm suburb, the Swedish general agency for BMW, Rover, Land-Rover, MG and Mini has row upon row of gleaming new automobiles on display, just like an average traffic queue on a multilane highway.

The building houses both the Swedish import company and the sales division for the greater Stockholm region. BMW and Rover Sweden also have their own sales office in Gothenburg, as well as 45 independent dealerships throughout the country. Sales have increased dramatically during 1999. Approximately 6,000 BMWs and 3,000 Rovers and Land-Rovers will hit Swedish streets before the end of year.

The Stockholm office employs 140 people, including everything from administrators to mechanics to spare parts dealers. Operations include automobile sales, routine service work, repairs and trade-ins for used car sales. The dealership also sells top of the line motorcycles as well as exclusive bicycles. In addition, an impressive selection of accessories and fashion items are also available.

Important tool

The whole operation is based on customer service, especially via telephone. Between six and seven thousand calls are received daily.

"The telephone is a very important tool, both internally and for our customers," says Brage Styrström, who manages telecom systems for the company.

"During 1998, we conducted a thorough assessment of our telephone culture together with the Telemanagement consulting firm. We interviewed all departments and functions and also conducted quality assessments, where the

switchboard was more or less bombarded with calls. We determined that things could be much better."

In order to take maximum advantage of new technology, BMW chose to abandon its old telecom platform, a Fenix 250. It is now in service in Malmö, where the import company has its after-sales unit and trains technicians and service personnel.

Next call center

After a careful market survey – also in cooperation with Telemanagement – the company decided on an advanced communications platform from Ericsson. It consists of the new server-based Next call center, OneBox messaging, a voice mail system and a DNA interception system, all based on a MD110 BC10, with cordless telephones for approximately one-third of the employees.

"We've shortened waiting times, are providing better service and are experiencing increased customer satisfaction. The interception system and voice mail system help us quickly direct customer calls and make us more accessible, while the call center option provides great relief for the switchboard operator," says Brage Styrström.

Moreover, the system is user-friendly and easy to understand and program independently.

"It's reassuring to have purchased a comprehensive system from the same supplier. We intentionally made an investment in the future with this system. This is a major investment, but we're convinced that it will pay for itself."

"Now we can grow without hitting a ceiling. The MD provides basic telephony, while the other systems are PC-based. The fact that we

can easily expand functionality was an important factor for us. We're also very satisfied with TietoEnator Dotcom, as well as the support we received from Ericsson Business Systems and PRS," says Brage Styrström.

Installation of the new system at BMW could easily compete for the most intensive and rapidly implemented project. It took less than two months between the order being placed and putting the new system into operation. The system has been operational since May 17.

"This was both a fun and a challenging assignment," says Kenneth Berglund, the TietoEnator Dotcom sales representative. "Next call center is a new and very interesting product to work with."

"BMW has also chosen a highly comprehensive solution and is our first customer to take full advantage of the strength of Ericsson's computer-supported telephony range. We're seeing a trend towards increasingly advanced integrated systems with call center functions. This is exactly the sort of customer and business that we are prioritizing."

The Next call center at BMW has been configured into several small customer service functions with various incoming numbers.

The largest includes five agents and involves the coordination of orders and deliveries to dealerships. Other call centers include repair shop service appointments, the spare parts warehouse and booking of sheet-metal work.

High quality

The sheet-metal workshop is in the process of relocating to Bollmora, south of Stockholm. Thanks to the flexibility of the Ericsson system, the sheet-metal workshop's call center can easily move with it.

"High-quality customer service is an important issue for us. We're continuing to work on our telephone culture," says Brage Styrström. "We're going to give employees one year using the new system, before making any comprehensive changes. After that, we'll conduct a new quality control assessment using the same parameters as before. Based on the results we get, we'll continue to further develop our communications platform."

Kari Malmström

 www.ericsson.se/business_systems



Cordless telephones are a necessity to provide good customer service, as well as both internal and external communications, according to Jeanette Alvinder, one of the top salespeople at BMW Sweden.

Computers give Indian girls hope for future

It has been almost one year since Miodrag Racic traveled to Calcutta, India, with three complete computer systems, donated by Ericsson's computer club in Stockholm. His goal was to give girls at a welfare home, which he had visited previously, the opportunity to learn about computers and the Internet.

Against all odds, he succeeded with the help of the girls and all the other people who assisted him. The project required a great deal of work, enthusiasm and a strong desire to make a better world.

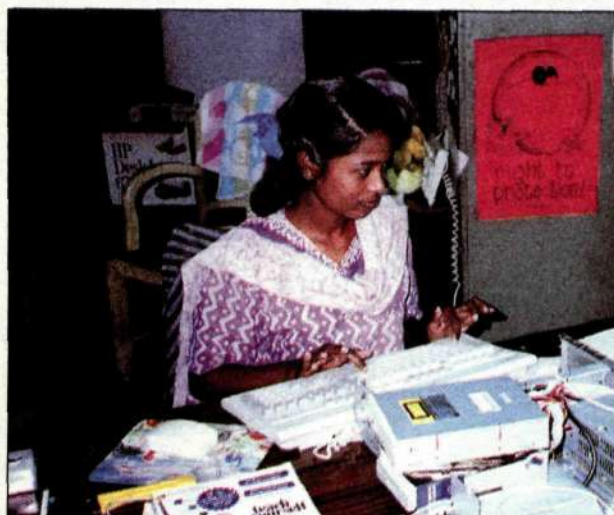
"I wanted to share what little I have to offer. I thought about what I could do with my knowledge of computers. This is my contribution to giving these girls a better chance in life," says Miodrag Racic.

The girls cannot speak much English and, prior to Miodrag's arrival, they had never seen a computer. Following 33 days of instruction, they were able to produce their own web site.

"Much more time is needed, but we've made some progress. Even though I've worked as a teacher for a long time here in Sweden, I've never met more devoted and appreciative students



Miodrag Racic



At one time, these girls from a children's home in Calcutta had never seen a computer. But now, after a month's education, they can perform repairs and publish pages on the Internet. This is thanks to Miodrag Racic's enthusiasm and hardware from a Computer Club at Ericsson. Rudimentary computer knowledge can mean the difference between a job and life on the streets for the girls from All Bengal Women's Union Children's Welfare Home in Calcutta.

Photo: Miodrag Racic

than the girls at the Children's Welfare Home in Calcutta."

Miodrag received the computers from a computer club at Ericsson. He donated the costs for shipping, along with his own airfare and time. Four years ago, Miodrag was in India on vacation and was struck by the extreme poverty in Calcutta. He immediately felt that he had to do something to help out.

"Since I know quite a bit about computers and have worked as a teacher, this solution seemed to be a natural one for me. With rudimentary com-

puter skills, these girls will be able to find jobs and avoid a life of poverty."

Miodrag turned to Ericsson for help in finding computers, since he trained at Ericsson Utvecklings AB during his education.

Patrik Lindén

patrik.linden@lme.ericsson.se

☉ To see the results of Miodrag's work in Calcutta go to their web site: www.orpheus.nu
E-mail: Calcutta2000@orpheus.nu

Expansion agreement with Vodafone

Vodafone AirTouch and Ericsson have initiated a global partnership to lower costs and lead times in the development of mobile networks. At a GSM Systems management meeting in Stockholm, Vodafone's Chris Ibbott presented his company's expectations of Ericsson and continued cooperation.

"Closer customer relations are an important aspect in our process of change within TTC Global. Consequently, it was natural for Ericsson, as the world's leading supplier, to turn to the world's largest operator," says Christer Jungsand, head of Supply Chain Management at GSM Systems.

"Our agreement involves a joint program to lower costs and lead times in the supply chain," says Chris Ibbott, head of logistics and project management at Vodafone AirTouch. "Instead of each of us working separately, we now have a joint project - Time To Service - to follow."

In specific terms, the agreement means that Vodafone AirTouch wants to have the same price and delivery conditions for its network expansion, regardless of where it occurs in Europe, America or Asia. With networks in 24 countries and almost 70 million subscribers, Vodafone AirTouch is the world's leading mobile phone operator. The company's various subsidiaries can now rewrite their contracts in accordance with the central agreement.

"Initially, four of our companies joined - those in the U.K., the Netherlands, Greece and Australia.



Kaj Snellman, Key Account Manager, Chris Ibbott of Vodafone, and Christer Jungsand, who are working to shorten lead times at Ericsson.

Photo: Lasse Modin

Now, another half dozen are in the process of joining," says Chris Ibbott. "We want to operate as one customer and conduct business with one supplier - at a common price. The market of the future is global."

This venture presumes a contin-

ued trend towards product standardization, which will simplify production and distribution, and especially ordering. The customer, that is, Vodafone AirTouch, will have access to Ericsson's web-based databases to place orders independently. The same system will enable Vodafone to follow products through the supply chain.

"This sort of cooperation is based on mutual openness," emphasizes Chris Ibbott. "We can't keep secrets from each other, except for those that affect other customers or suppliers, of course."

"From Ericsson's side, we promise to do everything we can to live up to expectations and develop this cooperative venture," says Christer Jungsand.

Arne Sandemo

Closer ties to customers

The goal of a new project, known as Customer Value Driven Strategy, is to develop total solutions based on the customer's own business strategies. The project is being started at TDMA Systems and one important pilot company involved is Cantel, the large Canadian mobile phone operator.

Numerous projects, aimed at creating better and closer ties with customers, have been implemented in Ericsson's mobile systems area. Despite this, customer surveys indicate that Ericsson's competitors are, in many cases, perceived to be more customer-oriented, while Ericsson is considered to be a product-driven, internally focused company.

"The basic premise for this project we have started is that everyone understands what our customers' strategies and goals are. By delivering solutions that contribute to a customer reaching its goals and strategies, Ericsson will end up with more satisfied customers, thereby increasing the number of repeat purchases. This may seem obvious, but currently we're not working in that manner," says Bengt Waxberg, head of marketing at TDMA Systems.

The project also involves giving Key Account Managers greater responsibility and greater authority in implementing deals. It also involves operating functions in the business and product units according to what is important to customers.

Three pilots

"Three of our large customers have agreed to be test subjects - Cantel in Canada, South Western Bell in the U.S., and Telcel in Mexico," explains Edward Nugent, who is project manager. "Cantel is the first of these."

"We've conducted interviews with a number of managers at Cantel and have gained a good understanding of the company's strategy for the future," explains Vu Nguyen at Ericsson in Canada, where he is head of the unit that works with Rogers Account Group, to which Cantel belongs.

Workshop with Cantel

The first workshop with the Cantel team is being held now in December. It will conclude in January with two more days of sessions.

"Immediately after that, we'll begin working in the manner that we and Cantel agree upon. That is when the real work will begin," says Vu Nguyen.

Gunilla Tamm

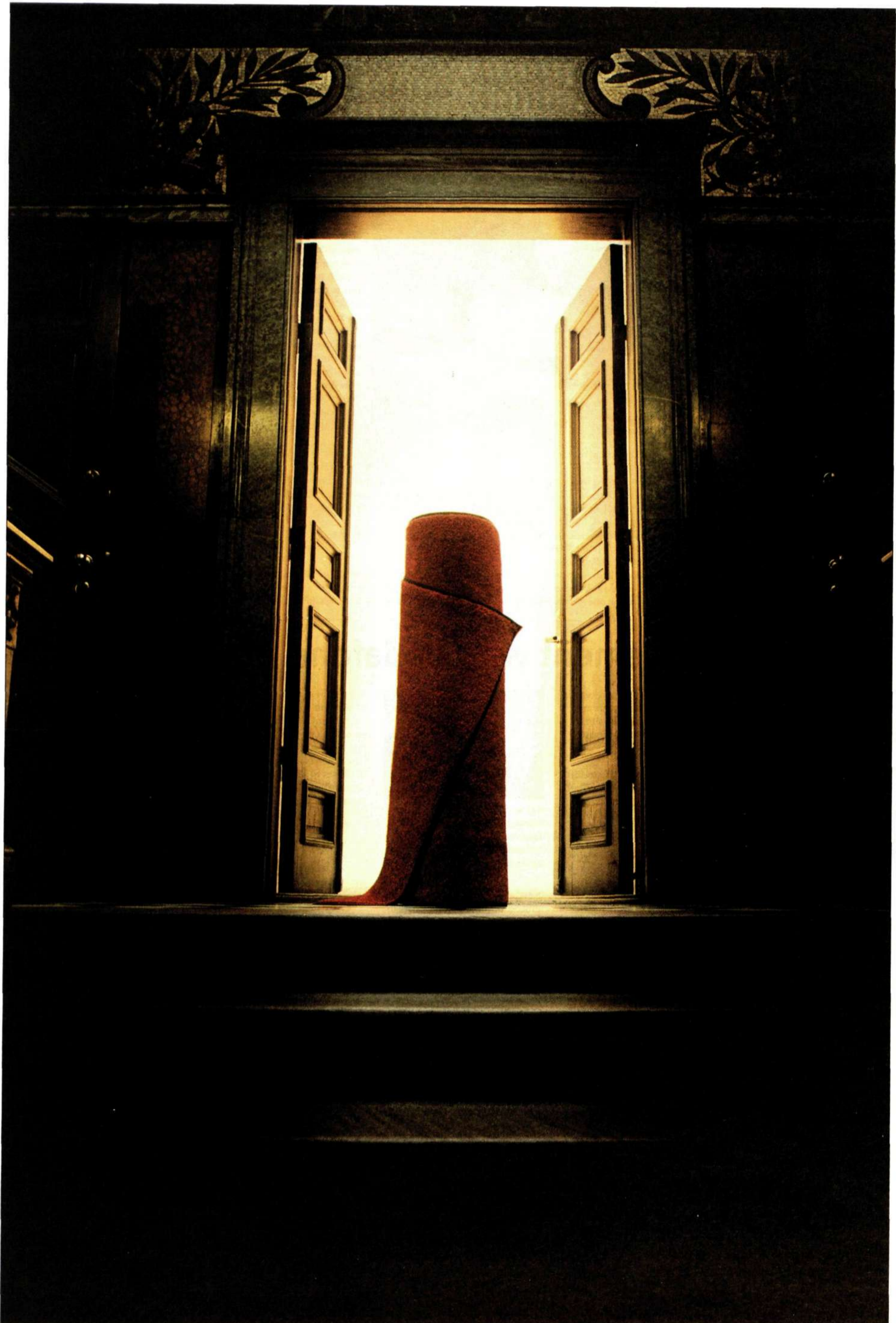
gunilla.tamm@lme.ericsson.se

Real time finance news

➤ Financial news and stock quotes are now available in real time directly from your computer. The service is accessible both at work and through Ericsson's remote network access system, Racom. The system offers news from various sources including Reuters, Ekonominytt and Direkt. Real time stock quotes are from the Stockholm Stock Exchange. The costs of the system will be around SEK 31,000 per user and year. For more details contact edthit@edt.ericsson.se.

ERIC & SON





We'll roll it out for your best ideas

If you've got a good idea and haven't been able to do anything about it, you're not alone. Most creative people have too little time. Or too many commitments. Or the feeling that no one is really interested.

At Business Innovation, we're interested. We're so interested that we're willing to do whatever it takes to support your best ideas. In fact, you could be in charge of your own "Innovation Cell" and make your concept a commercial reality.

Why are we doing this now? Because Ericsson is in an industry whose essential characteristic is change. Rapid change. And we're looking for new ideas that exploit this change. Your idea. Possibly leading to the

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next core business. And we want them now.

Here's what we can do. If we believe your idea has business potential following a screening process, we will match you with the right people. We will help you develop the skills to shepherd your concept. We will support you financially and help you build and manage a team. And we will guide you through the pitfalls and complexities of bringing a concept to the market.

For every ten good ideas, only one might work. If your idea is the one, we'll roll out the red carpet. And make sure you reap the rewards.

vacancies

AT ERICSSON

■ This is a selection of vacancies within the Ericsson corporation. They are also published on <http://www.ericsson.se/jobs/international.shtml>, International Openings, updated every second week.
To advertise: mail your adverts to employment.adverts@lme.ericsson.se.

Contact No. 21 1999

Updated December 13

ERICSSON PHILIPPINES

Network Performance Improvement Project Manager

● Start date and duration: January 2000. The duration of the assignment is at least one year.

Location: The main office will be located in Cebu City in the Cebu Island, Philippines but the work will require travelling in other islands as well.

Job Description: Ericsson is going to provide Network Performance Improvement Services within a frame agreement to our GSM operator in Philippines. The objective of the NPI frame agreement is to achieve and maintain a high quality GSM network.

The NPI project manager will be responsible to lead the NPI team (4-6 Engineers) throughout the project. The person has to assure that Ericsson's commitments in terms of network quality targets and other project activities are obtained. Transfer of knowledge to the local Ericsson staff and customer is also one of the objectives.

Requested Profile: The requested resource has got a great deal of experience of both radio network design and performance improvement services for CME20 networks. Hands-on experience in BSS radio features, parameters and statistics analysis is a MUST. A Previous experience of leading a team is a big advantage. Fluent in English. Open to share his/her experience. Are you interested?

Contact: Mehrzad Nabavieh, NPI Manager, Asia Pacific, Mobile +60 19 328 1045, Network Design Centre, Ericsson Malaysia, +60 3 708 7353, Mehrzad.Nabavieh@esm.ericsson.se, Fax +60 3 708 7369 or Pacita Rubiales, Department Manager, Network Design & Engineering, Mobile: +63 917 530 2502, Ericsson Telecommunications, Inc, +63 2 635 18 23, pacita.rubiales@enp.ericsson.se, Fax: +63 2 637 8852.

ERICSSON RADIO SYSTEMS AB, SUNDBYBERG

Project Controller

We now have interesting challenges for you within our new GSM-contracts in our markets.

● You will participate in the projects having the controlling responsibility during the implementation. This means implementing correct invoicing procedures, budgets and cost follow-ups, internal administrative routines and tools and in general represent the financial competence needed within the project management team.

As this is a demanding position you must be flexible and sensitive in your relation towards the customer and the project team. You should also be familiar with the ERICSSON way of working and have a strong personal drive and be creative in finding solutions. You're a "CAN DO" person!

The formal background is B.Sc. in Business Administration and some years of experience from ERICSSON. The language is normally english but also french and spanish are of interest.

Contact: B. Franzen, +46 8 4047943, F. Westman, +46 8 58534623.

Application: Ericsson Radio Systems AB, LP/ HA, P. Hautala 164 80 Stockholm, pirjo.hautala@era.ericsson.se

ERICSSON BUSINESS MOBILE NETWORKS, NETHERLANDS

The unit Wideband Radio Networks (WRN) develops products for the third generation of mobile systems based on WCDMA technology.

SW Design Engineer

One of the sections within WRN is the Platform O&M team. This team develops management applications for the wideband radio network.

The applications are built using the latest object oriented technology and open standards like Corba and Java. The work is performed in close cooperation with development teams in Sweden.

● We are looking for software design engineers who will be working the full software life cycle including architecture, design, implementation and test.

Polytechnical or academic background in software engineering. Professional experience in the telecommunications industry is an advantage. Experience with working in

project teams and ability to work in a multi-site environment. Ability to work in a dynamic, changing, high pace environment. Willingness to travel and/or work abroad.

Competence Development Program: It is important that you are interested and have the ambition to work with the latest Internet technology. An extensive training program has been designed and implemented to assist you in building this competence. The main features of the training program are:

Object Oriented Analysis, Design, Modeling and Construction with UML. This course provides the OO fundamentals and demonstrates the practical applicability of the Unified Modelling Language in the analysis, design and implementation phases. Object Oriented Programming Java. This course provides the Java fundamentals. Visibroker for Java. This course provides the concepts of Corba and Visibroker for Java.

Contact: Etti Hopma, HR Manager, etti.hopma@em.ericsson.se.

ERICSSON SPAIN

Fast Track Solutions Engineer/Software Engineer

The Fast Track Centres perform system investigations and software design within the whole AXE System. We take part in the development from requirement analysis to FOA. Also we take part in the technical co-ordination and project planning. Market Units and Customer groups are our customers.

● We now need several designers/engineers with experience in multiple product areas like IN-SSF, TCS, CHS and ACC. The persons we are looking for shall have a customer-focused approach to the development of the total solution for our customers. This will mean contacts with a variety of people from marketing, project and product management both from the MU's as well as the product areas.

Key working areas: Providing technical expertise to our customers to find an optimal solution technically and project wise. Perform Fast Track Quick Scans, Quick Studies, Technically assess potential product and make recommendations. Participate in pre-studies and feasibility and project execution. Also, actively contribute to the continuous improvement process and the development of the quality culture identifying and implementing improvements to processes and activities.

Our Web site is: <http://alvaro.ericsson.se/tl/fasttrack/fast-track.html>

Contact: The Fast Track Centre in Spain, EEM, Luis Cardenas, +34 91 339 2154 or Lars Garneij, +34 91 339 3512.

LM ERICSSON LTD, SOFTWARE CENTRE, IRELAND

The Software Centre (SWC) is part of a programme within ETX Wireline Systems (formerly Public Networks) to rationalise the handling of AXE software deliveries to our customers. The centre builds, verifies and delivers the Market Application Systems to Wireline Systems customers globally and performs verification and upgrading of the Global Application Systems. The centre is located in Beech Hill, Dublin Ireland. We currently have vacancies in the following positions:

Process Manager Software Supply

● We are seeking a person to develop and maintain the Software Supply Process within the Supply & Implementation Process. The position requires co-operation with related sub-processes and close contact with all Software Supply Centres. The Process Manager will be sponsor for various tools needed for the process.

Applicants should have at least 5 years experience gained in preferably AXE software verification. Ideally, applicants will also have knowledge of software verification from the broader software industry. As the position entails a lot of contact and work with other units, communication and co-operation skills are essential.

The Software Centre represents a unique opportunity to work on AXE software from the latter stages of the design phase, through market customisation and rollout and into the support phase.

We invite applications from personnel internally and externally who believe that they have acquired sufficient expertise in relevant areas to undertake this task. The positions listed may involve foreign travel.

Technical Support Engineer (OSS, UNIX, NT, ORACLE, CORBA, C++),

Telecom Management Solutions - Ericsson Services Ireland. We are globally responsible within Ericsson for a variety of telecom management solutions and services, including Fraud Management, Billing and Customer Management. The unit is responsible for complete lifecycle - from R&D to sales, marketing, project delivery and support. The software products are generally large client server applications based on leading edge industry standards and tools such as OOAD, CORBA, UNIX, C++, VC++, MFC, JAVA.

The support department is responsible for providing second line support and managing the remote first line support functions in customer markets. Key interfaces are with the development team, third party suppliers, first line support groups and customers.

Due to the growing client list and associated support contracts for our in-house developed Fraud Office system, we need to grow our support team with an experienced support engineer.

● We are looking for someone with experience in some of the following: Supporting OSS systems, Unix (admin level), Oracle (admin level), NT and TCP/IP networking. A balanced combination of technical expertise, support process experience and personable communication skills will provide us with the person we need.

Strategic Product Manager

The Business Communications Solutions Centre at Ericsson Ireland has recently secured responsibility for the development and marketing of Virtual Office Services (Centrex) on the GSM mobile switch (MSC). As a result a vacancy now exists in the unit for a Strategic Product Manager.

● The Strategic Product Manager (SPM) will work closely with the members of the BCSC Mobile Centrex Program cross-functional team. This team will sponsor our planned Centrex development at our design centres. The team will also implement our marketing plan. The Strategic Product Manager has prime responsibility to specify what we shall develop, source, and sell in this product area. This responsibility includes preparing business cases for solutions and product development, specifying requirements for those products, and maintaining a coherent product roadmap.

Qualifications for the position include previous experience in telecoms, technical product management and/or design projects, strategic planning, a good knowledge of business, an ability to build and manage a network of people, and a good educational background.

The successful candidate must be comfortable working internationally and confident in their ability to manage projects remotely and to support customer relationship management. Previous experience in GSM systems is very desirable. The role also requires excellent communication and interpersonal skills together with the ability to motivate and encourage a team of committed staff.

A screening process based on applications received will take place and thus it may not be necessary to interview all candidates. Applications for the above position should be sent in writing enclosing a detailed curriculum vitae to the undersigned.

Contact: Margaret Gaffney, Recruitment Executive Manager, LM Ericsson Limited, Beech Hill, Clonskeagh, Dublin 4, Ireland. MARGARET.GAFFNEY@EEL.ERICSSON.SE

OY LM ERICSSON AB, FINLAND

The IP Solutions unit at Telecom R&D of Oy LM Ericsson Ab in Finland develops telecom and datacom convergence solutions based on the IP-technology. At the moment our most important areas are the creation of Media Gateway Controller architecture as a part of Ericsson's Open Network Gateway solution and the development of IP Security (IPSec) functions to Ericsson's network solutions. Our operations are growing and hence the IP Solutions unit is looking to fill the following positions in Jorvas, Finland.

Technical Project Coordinator

● In this position you will be responsible for technical co-ordination of different Internet/IP-related projects. This

challenging position requires that you have fundamental programming, system and project experience of several years. You should also have international experience to work in our international team and communicate with Ericsson colleagues outside Finland.

We are looking for someone having a university degree, preferably M.Sc. or similar and very good written and oral skills in English. We expect a very good knowledge and experience in both UNIX-based systems and platforms (preferably SUN/Solaris workstations) and C/C++ programming languages. The fundamental knowledge of telecommunication protocols (such as SIP, H.323, SNMP and SS7 for instance) and Internet/IP techniques and protocols are required in this technically demanding position. It is a plus to have acquired international experience and proven technical leadership skills already.

We presume, that you are open-minded and flexible. Some travelling is necessary.

Contact: Timo Saija, Section Manager, IP Solutions, Oy LM Ericsson Ab, 02420 Jorvas, Finland. +358 9 299 3139, +358 40 729 3139, timo.saija@lme.ericsson.se.

IPSec Technical Expert

Ericsson IPSec Competence Center, IPSecCC, is located in Finland. It is responsible for maintaining IPSec competence for development projects at Ericsson. IPSecCC owns IPSec and IKE implementations (IKE is sourced from SSH) that are available for Ericsson projects for free. We have an interoperability laboratory with the state-of-the-art equipments.

Our technical experts are responsible for following up and contributing the latest IPSec situation in IETF. Furthermore they maintain IPSec reference implementation for several platforms and discuss of different implementation architectures applicable for different projects at Ericsson.

● We expect that you are interested in Internet security and have a good knowledge of basic Internet protocols and their applications. Knowledge of general security questions especially in the IPSec area is greatly appreciated.

We appreciate the knowledge of IP projects in Ericsson. You have to be very capable in communicating with Ericsson product units. Some travelling is necessary. Ability to publish results in a very readable format is an advantage.

Contact: Esa Turtiainen, Manager, Ericsson IPSec Competence Center, Oy LM Ericsson Ab, 02420 Jorvas, Finland. +358 9 299 3616, +358 40 561 3517, esa.turtiainen@lme.ericsson.se.

ERICSSON TELECOMMUNICATION B.V., NETHERLANDS

Patent Engineers

Intellectual Property Rights (patents, trademarks and designs) have become a strategic issue for Ericsson. Decentralised offices are established to give more focus to IPR issues. In the Netherlands we have established the Intellectual Property Department, IPR-NL. IPR-NL handles IPR issues for all Ericsson units in the Netherlands. Within IPR-NL we are urgently looking for two patent engineers.

The patent engineer is visible and accessible in the served organisations and maintains an international network of specialists in various fields.

● The tasks of the Patent Engineer comprise: Increase and maintain IPR awareness amongst employees with regular training and information sessions. Support the generation of inventions and ideas by facilitating brainstorm sessions and assisting inventors in describing their ideas. Investigate on competitors, novelty, market importance and strategic value of initiated ideas in close co-operation with specialists in various fields. Provide advice to the IPR-Board on further actions on the ideas. Manage an IPR portfolio in close co-operation with Product Management. The Patent Engineer works in and closely with the served organisation.

Successful applicants should: Have a broad technical background and interest. Be willing to build and maintain a specialist network. Have good communicating skills. Master the English language in speech and writing.

Contact: Ellen Verheijen, +31 161 249796, Ellen.Verheijen@etm.ericsson.se or Halbe Hageman, +31 161 249838, Halbe.Hageman@etm.ericsson.se.

Application: Anja Bastiaansen, HR officer, Recruitment Research & Development, Ericsson Telecommunication B.V., P.O. Box 8, 5120 AA Rijen, Netherlands, +31 161 242 997, Fax +31 161 242 026, Anja.Bastiaansen@etm.ericsson.se.

ERICSSON LTD, UK, BU TRANSMISSION SOLUTIONS, PU OPTICAL NETWORKS

IS Business Manager

The IS Business Manager provides strategy and direction on the provision of IT solutions within the Product Unit Optical Networks in Horsham, UK.

● The successful candidate will need to fully understand business requirements and translate these into optimal IS/IT solutions within budgetary and time constraints.

Main responsibilities will be: Managing the provision of efficient, effective and cost controlled IT support through external supply. Providing state of the art Intranet solutions as the organisation's communication backbone tool. Managing the integration of internal and external systems with specific reference to our key suppliers and Ericsson legacy systems. Ensuring up to date working knowledge of latest developments in IT field (both internally and externally) in order to

ensure the most appropriate techniques are implemented within the organisation. Define and implement education programs for all the PU's employees to enable the user to fully utilise provided IT infrastructure. Providing direction and support to the IT team.

Suitable candidates will have extensive experience of working with Microsoft products; good communication skills; a thorough understanding of the use of IT from a business perspective, having experienced managing and developing IT systems. You will be a strategic thinker, able to interpret business decisions and processes into an IT requirement.

Contact: Tord Lindner +44 1403 277430, tord.lindner@etl.ericsson.se.

Application latest 000107: HR, Llynor Rathbone, +44 1403 277557, llynor.rathbone@etl.ericsson.se, PU Optical Networks, Broadlands, Horsham, UK.

ERICSSON LTD, GUILDFORD, UK

Snr/Data Transcript Engineers

The data transcript section forms part of the Operations Services department. The section is responsible for providing all data required for commissioning, integration verification & acceptance (IVA) of new switches, extensions, cellular parameter data for integrating and commission (I&C) of new cell sites, cellular parameter data for optimisation of cellular networks, and implementation of new software / hardware functionality. The data transcript section are responsible for 3 major customers: One2One, Cellnet and ICO.

● The data transcript engineers are responsible for the creation and adaptation of the exchange dependent data (MML) files for AXE systems in all previously mentioned areas. They will be responsible for creating procedural documentation and service level agreements where required and ensuring they are adhered to. They will continuously strive to improve and develop new and existing process. They will actively seek to highlight and develop improvements in data transcript tools. The engineers will be responsible for working as part of a team and maintaining good working relationships within the team and with its key customers.

Qualifications and experience: Essential: At least 2 years experience of Data Transcript in AXE 10 environment preferably CME20, or other proven testing/switching/support experience. Computer literate. Able to travel within the UK and overseas on occasion.

Desirable: Higher technical qualification in telecom, radio or software related subject. Working knowledge of Ericsson procedures and experience in Data Transcript tools development.

Contact: Mark Phillips, +44 1483 40 7375, mark.phillips@etl.ericsson.se or Gary Moore, +44 1483 30 5795, gary.moore@etl.ericsson.se.

ERICSSON HONG KONG

Hong Kong is recognised as one of the most competitive Telecoms Market in the World. Six Mobile Operators running eleven networks serve over three million customers with subscriber penetration at over 50%. The Field Support Center of Ericsson Hong Kong provides support services to our key Mobile operator's GSM900/1800 and TDMA networks as well as the major Wireline operator's large international gateways.

Hong Kong operators need to be at the forefront of technology - we have already introduced ISP and WAP into the market and are rapidly heading towards implementing GPRS as FOA market in the Asia-Pacific Region. To provide professional support in this very challenging environment, we are looking for a person of high calibre to fill the following position:

System Expert

● As System Expert, you will be required to perform network investigations and problems at the highest technical level and to resolve them in line with customer expectations. Design, test and implementation of Market functions will be required as well as participation in system updates/upgrades and our 24x7 Emergency support rota.

You will also be expected to provide technical competence transfer and mentoring to the existing support team plus technical advice to the Field Support Center Manager to whom you shall report directly. In addition, you should expect to be exposed to the emerging datacom and IP technologies and help manage the required adaptation of the support teams processes and methods accordingly.

To fulfill the above job responsibilities and expectations, you should have broad CME20 and/or TDMA system knowledge, expertise in the area of APZ/IO and ideally some exposure to GPRS. You should also have been working with AXE systems for at least 8 years, 5 of which should have been with Mobile systems, in a Design/ Verification/ Support type environment.

Besides, you should have a full understanding of Ericsson support processes and experience of working directly with customers. A strong focus on customer relations and satisfaction is expected.

is expected.

Hong Kong is a fascinating city in which to work and live. For a technological challenge and an exciting way of life you can do no better!

Contact: Vikki Lee, HR Manager, +852 2590 2413, vikki.lee@ehk.ericsson.se.

ERICSSON RESEARCH CANADA, MONTREAL

Product Introduction Project Manager

The PU Mobile Switching Centre (PU-MSC) is a Product Unit within the Ericsson Business Segment Network Operators. The Product Unit is responsible for the Ericsson MSC and AP/IO nodes used in TDMA and CDMA networks worldwide.

● We are looking for a Product Introduction Project Manager who will work within a development project to ensure that the products under his/her responsibility are 100% ready to be handled in the Time-to-Customer (TTC) process. More specifically he or she will make sure that the products under his/her responsibility are 100% ready to be marketed, sold, ordered, supplied, installed, supported and phased out.

This project management position provides great exposure opportunities and excellent possibilities for career development. In effect, the project manager who will collaborate on a daily basis with the Business Units and the Market Units will have many opportunities to travel and to develop business relations with Ericsson personnel all over the world.

The candidates should have a degree in Engineering, Business or equivalent. They should have a good knowledge of Ericsson organisation and work methodology (incl. TTM and TTC). Experience with one or more of the following fields would be a great asset: marketing, sales, supply, customer project management or support. Good leadership, influence, people and communication skills are also expected.

Application: Product Introduction Manager, mariejosee.leblond@lmc.ericsson.se.

ERICSSON COMMUNICATIONS LTD. INDIA

Ericsson's involvement with India and Indian telecommunications goes way back to 1902; working closely with local companies, installing and implementing new telecommunications technologies.

1995 witnessed Ericsson once again playing a lead role in launching India's cellular revolution.

India has leap-frogged directly into digital cellular services and the AXE-the most widely used digital switching system on earth (it is used in 117 countries), handling over 50% of all the world's international calls (and 99% of all India's) -switching system forms the basis for mobile switching centres now in use here. We are looking for professionals for the following positions:

Solutions Expert

The Indian telecom market is entering a phase of high growth with GSM rollouts around the country gathering speed, with new players starting mobile services, with PTT accelerating the deployment of basic telephony services, with competition being introduced in basic services, with the long distance telephony market being opened for competition and with numerous ISPs starting services.

In the next phase of growth, it is anticipated that there will be a lot of interest in converged solutions (fixed mobile), next generation networks (IP/ATM in backbone) and introduction of 3G services.

Ericsson India invites applications for the position of 'Solutions Expert' to handle the challenge of Ericsson taking and sustaining a leadership position in this market.

● The candidate shall work closely with the Product Management and Network Solutions team in India, as well as Marketing, and bring solutions to the market that are targeted and tailored for the needs of the market. The candidate shall also maintain good networking with several Product Units belonging to various Business Units.

The responsibilities for this position will be Working with various bid teams to facilitate the creation of the most effective solutions for different tenders and major proposals. Working with the different Customers that Ericsson works with in the market to identify revenue generating business opportunities. Guiding the customer in leveraging the deployed network to maximise the utilisation of the same. Supporting the local management team in setting the strategic direction of the local Ericsson company. Participating in lobbying activities at various forums to ensure that Ericsson's business interests are well protected. Facilitate the build up of competence in the local staff, in various area of expertise.

Competence in GSM Systems is required and competence in one or more of the following areas is desirable: Datacom (IP/ATM)Wireline and Access Systems. Value Added Services - especially IN/Prepaid, Wireless Data. 3G/UMTS. Transmission Products (SDH, WDM).

Possess excellent leadership qualities, communication and interpersonal skills. Should be degree/diploma holder

Your future – 3rd generation mobile telecommunications – WCDMA

A number of positions are open in one of Ericsson's foremost projects – developing Ericsson's 3rd generation UMTS. This is your chance to participate in the development of the mobile telecommunications system of the future in an environment that uses state-of-the-art technology, in teams where you will interact with people from around the globe. If you are the person we are looking for, we will ensure that the necessary conditions exist to challenge you in your development as much – or more – than the development of the system!

WCDMA is about to be accepted as the world-wide standard for the 3rd generation mobile telephony. This field has top priority at Ericsson, and there is therefore enormous potential for expansion and growth. As a consequence, we are looking for a large number of engineers with Master's degrees or the equivalent; or people who have acquired

the necessary professional experience and knowledge comparable to a degree. There are a large number of positions available, including systems engineers, hardware and software designers, project administrators, etc.

Visit us at

www.osa.nu

The Product Unit Wideband Radio Networks is developing new systems and products for Ericsson's 3rd generation universal mobile telecommunications system (UMTS). The system is based on wideband CDMA (WCDMA) radio technology and ATM transmission. The Product Unit is based in Kista, Stockholm, Sweden. We are a comparatively new organisation and we work in a stimulating environment where standardisation and development are taking place in parallel, giving you ample opportunity to influence the technical solutions as well as your own tasks.



ERICSSON 

with minimum ten years of experience, out of which at least 5 years should be in Product Management or Solutions management.

The initial contract will be for one year.

SS CME 20 System Support Expert

● The main responsibilities for this position will be to manage, co-ordinate and participate in network investigations and problems at highest technical level and to address customers expectations/needs. Provide technical competence for resolving complex problems in the networks. Provide technical advice and assistance to support engineers and Managers. Transfer trouble shooting skills and competence to system support staff. Also participate in emergency services.

The competence requirement are: Minimum of 5-8 years working experience on AXE 10 Digital Switching application Systems, of which at least 3-4 years experience should be on CME20/CMS40 SS Systems in Verification and/or Support environment. Experience on IN is desirable.

Candidates with excellent trouble shooting skills and experience on other application systems/product line can be considered for this position. Candidates should also have good English Communication skills. Qualification: Degree in Computer Science or Electronics or Telecom Engg.

The initial contract will be for 1 year.

BSS System Support Expert

● The main responsibilities for this position will be to provide technical competence for resolving complex problems at highest technical level and provide technical advice and assistance to Support Engineers. Also transfer trouble shooting skills and competence to Support Engineers. The responsibilities will also include TR/CSR handling and being on Emergency Service.

The competence requirement are: Minimum of 5-8 years working experience on AXE (mainly BSC), RBS 200/ RBS 2000 of which at least 3-4 years experience should be on CME20/CMS40 BSS Systems in Verification and/or Support environment.

Candidates should also have good English Communication skills. Qualification: Degree in Computer Science or Electronics or Telecom Engg.

The initial contract will be for 1 year.

Contact: ASAP ECI/HRM, Samir Prakash, +91 11 6180808, hrc.eci@eci.ericsson.se.

Application: Ericsson Communications Ltd. The Great Eastern Plaza, 2-A, Bhikaji Cama Place, New Delhi - 110 066, India.

ERICSSON LTD, UK

VODAFONE

Vodafone is the no. 1 cellular operator in the UK with over 7m customers. Vodafone AirTouch with its global headquarters in Newbury, England is the world's largest cellular operator with operations in over 27 countries.

This high profile account is working in close cooperation with Vodafone to maintain their market leadership through the deployment of innovative solutions and services. Ericsson is supporting Vodafone in the launch of Packet Data services and their migration to third generation systems.

The account is one of the largest and most demanding cellular accounts within Ericsson. The account is currently relocating to Newbury and will reside in a new showcase wireless office promoting Ericsson's latest solutions.

Account Managers

● Responsible for the Management of several key accounts important to Vodafone UK. You will be expected to achieve and/or exceed orders, sales, margins and other key targets as appropriate to the accounts.

Other responsibilities include developing profitable new and existing service account orders and sales towards Vodafone UK. You must manage key relationships with Account Managers across the Division and units world wide to exploit new service opportunities. You will develop solutions and ensure that all new products offerings to the customer include any necessary service elements. You will also be required to utilise best practice and encourage globalisation of services to Vodafone Airtouch.

It is essential that you possess a relevant degree with commercial account Management experience. You should be capable of demonstrating a technical understanding in cellular/telecoms and that you are able to develop complete solutions. You must also possess excellent analytical, relationship building and negotiation skills.

Senior/Account Executives

● We are looking for Account Executives and Senior Account Executives to work in the UK with the largest and fastest moving Global Cellular Operator, Vodafone Airtouch. We currently have exciting opportunities within the Business Development Group of the Vodafone Customer Facing Unit, based in our new high-tech wireless office in Newbury, Berkshire.

Core Business x 3

● Under the direction of the Account Manager, you will be required to manage and be responsible for a number of defined commercial opportunities of importance to the business.

You will be required to achieve the phased business task defined in terms of orders, subsequent receipt of cash, product mix, margins, revenue growth and strategic objectives set for the Account (s).

For the roles within Core Business you must have a full understanding of the Vodafone network i.e. MSC, BSC, TSC's and STP. Within the role you will also cover all RBS and Turnkey activities and provide solutions for indoor coverage.

Datacom and VAS Accounts x 2

● Reporting into the Core Business Account Manager, the successful candidates will manage a number of defined commercial opportunities of substantial importance to the Business, including activities such as Indoor Solutions and Turnkey projects as well as switching and radio issues. The candidates will also be required to work with the Core Business Team towards the strategic objectives of the account as well as achieving the phased business task which is defined in terms of orders, sales, revenue, margin and product mix.

For the positions of Account Executive, candidates should have a minimum of 1-2 years commercial experience have excellent communication skills and possess the drive and enthusiasm to meet the objectives of the business unit. Any training needs will be provided as required.

For the Senior Account Executive roles, candidates should have a minimum of 5 years cellular experience. A sound commercial knowledge is essential with technical experience being an advantage.

The role is suitable for individuals who are willing to take initiatives, enjoy varied challenges and working within a lively and dynamic environment.

Contact: Ian Huddle, +44 1483 305701, ian.huddle@etl.ericsson.se.

Product Managers: SS, BSC & GPRS

Local product managers with SS, BSC or Datacomms knowledge are required to support the introduction of R8 and GPRS into the Vodafone/Airtouch UK network.

● The product managers will work closely with the project introduction activities and also focus on Quality of Service initiatives to improve the in service performance of Vodafone/Airtouch's Network. Solid operational product management experience with either BSC, MSC or Datacomms is a requirement. You must also have excellent communication skills and be capable of leading technical discussions with Vodafone/Airtouch engineering staff.

GPRS (GSN) Programme Manager

The GSN Programme Manager will be responsible for the introduction of the GSN node as part of the Vodafone/Airtouch GPRS introduction. The GSN Programme Manager will act as the prime interface to Vodafone/Airtouch's Programme Management organisation.

● You must have excellent project management experience - having worked with integration/verification and customer acceptance activities. Technical grounding in GSM and preferably Datacomms would be an advantage.

You must have highly developed communication skills - with a flair for presentations and negotiations with customers.

Support Engineers

● The individual will be a member of the Vodafone/Airtouch dedicated Field Support Centre (FSC) delivering expert software support to the Vodafone/Airtouch UK network.

It is essential that you have between 5 and 10 year's experience of software support activities. Detailed technical knowledge of AXE & GSM and experience of software trouble shooting on live switch sites. We will also consider senior/expert level AXE Test/Support engineers interested in moving into Mobile Systems.

Contact: Clive Oates, +44 1483 305294, clive.oates@etl.ericsson.se

ERICSSON TELECOMMUNICATION B.V. NETHERLANDS

Usability Engineer

Service Application Design is a fast growing area within Ericsson. Within the Service Application Design (SAD) department of Research & Development new Telecommunication services (software) are being developed for our AXE switches, based on Intelligent Networks. Both fixed and mobile telecommunication networks, as well as the conversion of those two (FMC), play an important role in this.

The main focus of SAD is the Virtual Private Network (VPN). The VPN can be implemented in public networks to link company sites irrespective of their size or geographical location, having cost control and a single contracting point for multi-site companies as the main benefit.

● Tasks: In the technical manuals for our services you make the translation from technology to the user. You are able to identify yourself with the wishes and the train of thought of the customer. Good communication skills and a perfect control of the English language are essential, as well as relevant experience and affinity with telecommunications.

Required competence: Polytechnical or academical background in a technical area. Professional experience in the telecommunications industry (advantage). Directive, independent person, capable of transforming technology based documents into documents for the user/knowledge of UNIX and Windows95/98 (advantage). Knowledge of Framemaker (advantage). Experience with working in project teams. Ability to work in a dynamic, high pace environment.

Contact: Rob van Olfen, Rob.van.Olfen@etm.ericsson.se or Ton Roelofs, Ton.Roelofs@etm.ericsson.se, Managers Software development SAD, +31 161 242486/249658.

ERICSSON RESEARCH, CANADA

PU-MSC Product Integration is responsible for systems integration, test and FOA deployment of the latest Switching Applications for CMS88 systems. Our organization is expanding to include the newest CDMA systems and we are looking for experienced candidates in all areas who are interested working in this expanding technology. Openings are available in:

Test Configuration Management

Node and System Simulation

Product Line Testing and First Office Application

● You will work across a variety of system integration and technical improvement projects. Your experience will be used during the early phases of the project through conclusion. You will work to ensure that all technical components are considered. During execution you will analyze, troubleshoot, write and implement corrections to complex faults.

Key Requirements: Experience (2-3 years) working with AXE products in a design or support role. Experience working with Network Integration. Experience working with ATM and IP (not essential but highly regarded). Good general industry knowledge (non-Ericsson). Self motivated. Ability to transfer knowledge. Strong documentation skills. Previous training/teaching experience. Excellent communication, team and customer skills. Willingness to travel. Experience with other cultures.

Contact: Rosemary Heck, Director Product Integration and Verification, +1 514 345 7953.

ERICSSON EUROLAB (EED) AACHEN, GERMANY, CSS PROJECT OFFICE

AXE Troubleshooter for UMTS CN 1.0

One part of our responsibilities within the CSS Project Office EED/X/R is the Function Test of UMTS CN 1.0 (GMSC/ MSC/ VLR/HLR node). UMTS CN 1.0, the CSS-UMTS Core Network project, is based on AXE GSM R8.0 (MSC Server, HLR) and will be the base for coming UMTS projects.

● We are looking for an experienced Tester or Troubleshooter with the following competences: GSM testing experience more than 3 years (MSC/VLR, HLR nodes). About 3-4 different projects in Function Test or System Test. Troubleshooting experience highly appreciated. Experience on target channel environment required and experience on simulated environment (STE, especially MGTS PASM) highly appreciated. GSM DT knowledge, like C7 signalling DT, B-No. analysis, etc. DT knowledge for IN and data calls appreciated. AXE system knowledge (APZ, 1/APT, C/APT, SSFAM, RMP, HLR, AUC, DTI, IOG)

You will be responsible to support Function Testers testing the Mobile Application (1/APT) functionality. You will take care about problems in target channel environment and coordinate with UMTS System Testers performing IN-DUS Test activities.

You will have the opportunity to learn about the new UMTS functionality by having the main UMTS development competence locally. You will work in an international organization with a highly motivated team.

Contact: S. Seebass, HR, simon.seebass@eed.ericsson.se.

General Packet Radio Service (GPRS)

Configuration Manager (technical)

The challenge for configuration management is to keep control over all objects which are produced and used during the software life-cycle. This includes source code, executables, released products, trouble reports, requirements, test data, third-party products.

Technical means to support configuration management are special databases (CVS, RCS, ClearCase). These provide the basics to differ between versions of objects. Tools like labels, triggers, branches, views etc. help to keep the different version under control. Through scripts these tools become a powerful instrument to control projects and products.

● For persons interested in technical CM, we provide a good opportunity to quickly speed up in a technically skilled team and take over own responsibility after a short time.

We are working with future-proof technology. ClearCase, MultiSite and DDTs (ClearQuest) are not only Ericsson's choice for configuration management but industry's standard. Perl, a scripting language we use to adapt the tools to our needs, is the most popular programming language in the WWW.

Persons interested in this field should have a structured and disciplined approach to tackle problems. The ideal candidate has an understanding of software development. Background in UNIX and scripting languages is a plus as experiences with any kind of configuration management tool.

Contact: EED/D/QC, Stephan Jacobs, +49 2407 575 627, stephan.jacobs@eed.ericsson.se or HR, Simon Seebass, +49 2407 575 163simon.seebass@eed.ericsson.se

Strategic Product Manager Transit

Proj.No 80/399

The Strategic Product Manager (SPM) works with the competitiveness and economical performance of the Transit products in CAPC. For this the SPM requires extensive contacts with the SPM's from our internal Ericsson customers and with the ongoing CAPC projects. The CAPC customers are the mobile applications GSM, UMTS, TDMA and PDC and the mobile systems NMT and TACS as with the wireline applications for common areas.

● The main tasks are to represent Transit area in the CAPC Product Management Network, to identify trends in product development in cooperation with our customers, to propose long term development strategies for the Transit product areas, to see to that competitiveness and economical performance of the products are best possible over the product life-cycle and to perform business opportunity tracing.

In the area of requirement handling your main tasks are to evaluate incoming requirements and to initiate system studies, to evaluate and act upon assignments received for the product area, to issue Transit requirement specifications, to validate RS's and FS's and being involved in requirements issues in running Transit projects in CAPC.

Required qualifications are a strong technical background in telecom or database industry with experience in AXE10 development and/or system design. Good knowledge of mobile tele. systems. Being able to take initiative and work in a dynamic environment. Excellent communication and interpersonal skills. Competence in one or more of the following areas is essential: AM System development, Signalling and Protocols, Traffic Control, (Wireless) Charging or ATM.

System Manager Transit

Proj.No 81/399

The main target is to provide technical and system competence to preserve the Transit development in the Application Core (CAPC).

● Your main tasks would be to perform system studies or design in before or in early project phases, to provide technical expertise related to prestudy and feasibility study on Transit products, to provide technical and system competence to support the GSM, UMTS, TDMA and PDC product lines, to participate in prestudies and feasibility studies for the Transit projects in CAPC, to give support in the design activities in his/her area of competence, to give support to analyze trouble reports on system module level, to participate in RS and other technical inspections regarding his/her areas of competence, and to act as Technical Coordinator in Transit (sub)projects, coordinating technical issues involving several subprojects, involving the related mobile applications projects or involving associated projects.

Required qualifications are a strong technical background in technology, telecom or database industry with experience in AXE10 development and system design, good knowledge of mobile tele. systems. Able to take initiatives and work in a dynamic environment. Excellent communication and interpersonal skills. Competence in one or more of the following areas is essential: AM System development, Signalling and Protocols, Traffic Control, (Wireless) Charging, ATM or SDL.

Contact: HR, Simon Seebass, eedsims@eed.ericsson.se, +49 2407 575 163 or U/T System Group: EED/U/TG Joe Wilke, eedjow@eed.ericsson.se, +49 2407 575 399.

Core PU Application Core (CAPC)

Group Manager Wireless TCS Design

Proj.No 79/399

The Transit Development Department in EED is looking for a group manager to establish a new group for Traffic Control design in the Application Core (CAPC). Traffic Control products are part of the new Transit-AM (TRAM) that is introduced to the mobile product lines UMTS, GSM, TDMA and PDC. CAPC and Transit responsibility is located in EED/U.

● Tasks: The general responsibility of the group manager is to plan, lead and the operations of the design group in EED/U/T. He/she has to that the required goals are fulfilled, the needs of the company satisfied, the group is efficient and competitive.

Main authorities and tasks are to implement personnel policies and general rules, to assure that all communication is executed with highest integrity and quality, to perform appraisals and frequent personal development talks, to plan and ensure competence development of the staff, to participate in recruitment and introduce new personnel, to provide the department with resource plans and forecasts, to

set-up and coach design teams, to ensure that planned quality assurance activities are implemented and to participate in the EED/U/T Management Team

As a suitable candidate, you are an Ericsson employee and should have a 5 years AXE-10 software design knowledge. You should be familiar in working in projects. Managerial experience (e.g. as group manager, team leader or project) or experience in the traffic control area is a clear advantage.

Group Manager EED/U/T Project Office

Proj.No 29/399

The Transit Development Department in EED is looking for a group manager of the Project Office taking care of sub-projects for Transit and Traffic Control development in the Application Core (CAPC).

The new Transit-AM (TRAM) and the included Wireless Traffic Control products are part of the mobile product lines UMTS, GSM, TDMA and PDC. The CAPC and Transit responsibility is located in EED/U.

● The general responsibility of the group manager is to plan, lead and supervise the operations of his group in EED/U/T. He/she has to guarantee that the required goals are fulfilled, the needs of the company are satisfied, the group is efficient and competitive.

The main authorities and tasks are to supervise project leaders of Transit and Traffic Control subprojects, to participate in improvement of project management methodology, to assure that all communication is executed with highest integrity and quality, to implement personnel policies and general rules, to perform appraisals and frequent personal development talks, to participate in recruitment and introduce new personnel, to provide the department with resource plans and forecasts, to set-up and coach design teams and to participate in the EED/U/T Management Team.

As a suitable candidate, you are an Ericsson employee and should have a minimum of 5 years AXE-10 development experience and good background in project management according to PROPS and Incremental Design. Any managerial experience (e.g. as group manager, team leader or project manager) or experience in the transit and/or traffic control area is a clear advantage.

The position requires initiative, good communication skills and a good ability to work under pressure.

Contact: Transit Development Dept, Norbert Floeren, +49 2407 575 228, Norbert.Floeren@eed.ericsson.se or Simon Seebass, eedsims@eed.ericsson.se, +49 2407 575 163.

Transit-AM: http://www.eed.ericsson.se/services/eed-UT/TRAM/TRAM_Home.html, Wireless Traffic Control: http://www.eed.ericsson.se/services/eed-UT/TRAM/TCS-M_Home.html

ERICSSON RADIO SYSTEMS AB, SUNDBYBERG

Senior Product Managers

AIM FOR THE STARS - JOIN THE SATELLITE TEAM

Exciting opportunities within Satellite Systems - a new and challenging business for Ericsson. Valid for Stockholm and Washington DC. Within the Operator Segment, Business Unit. New and Special Business Operations (BNSO) was established this year. The Product Unit - Satellite Systems belongs to BNSO which has the mission to give new small business activities the appropriate attention and conditions for successful operation.

Mobile satellite systems will play an important role in providing complementary service to existing terrestrial cellular system operators and fixed tele, subscribers in remote areas. Roaming agreements between cellular operators and satellite operators and the availability of dual-mode handheld phones will facilitate these services. We develop satellite functionality as part of Ericsson's global product portfolio.

In recent years, Ericsson has been awarded 3 gateway infrastructure contracts - both ICO and Thuraya are narrowband systems for voice and low rate data and are GSM-based, and Astrolink, Ericsson's first satellite broadband system (with multimedia services for voice, data and video).

● Within this business and product unit, the section responsible for Product Management is now looking for Senior Product Managers. In this challenging position, you will be handling: Satellite customer requirements on standard Ericsson products. Product strategies for the Mobile Satellite system application. Product plans and programs. Satellite customer business cases. Technical support towards the customer program organizations during the TTM/TTC flow. Technical sales support towards local companies and customers with information needed for a successful market launch.

You will provide our customer with technical competence, including technical discussion, product presentations, preparation of technical specifications, and production of technical documentation.

The customer satellite projects require detailed technical systems knowledge. As many of the technical requirements for satellites are not standardised, the position requires technical competence in overall network design, with good

high level and detailed knowledge of protocols. It is a very strong plus if you have experience in GSM/GPRS/ATM/ISUP/IN and worked in development projects.

We need a individual who is outgoing, independent and self-motivated with strong interpersonal and communication skills. You should have a university degree, preferably M. Sc. or similar. Good written and oral skills in English. It's a plus if you have experience in tender preparations.

If you wish to join our group, help us achieve our goals, and enjoy the feeling of working in a small organisation, then please feel free to contact us to discuss this role in more detail.

Contact: Eric Sandberg, +46 8 757 17 30, eric.sandberg@era.ericsson.se.

Application: SENIOR PRODUCT MANAGERS, Ericsson Radio Systems AB, SG/ERA/KD/HS Mari Skoglöf, 164 80 STOCKHOLM, mari.skoglof@era.ericsson.se.

ERICSSON RADIO SYSTEMS AB, KISTA

Product Marketing Managers In Malaysia

ERA GSM Systems Product Units BTS, BSS, CSS and PSS will locate part of our Marketing and Sales Support for China and Asia-Pacific in Kuala Lumpur, Malaysia.

Our goal is to enhance sales by giving expertise support to the Market Units in the same time zone and region.

● The positions, which are long-term (1 year) contracts, are open for individuals fulfilling the following qualifications: Vast experience from products and solutions and extensive contact network within the concerned Product Unit. Vast experience from customer meetings and presentations through Sales and/or Marketing of GSM products. University degree or corresponding education/training acquired through job experience. Communication skills and fluency in English. Self motivated and driving with good co-operation skills.

The job includes on-site support to our Market Units in China & Asia-Pacific. Thus, extensive travelling within the region is required.

Contact: All positions: Per Arvidsson, +46 70 514 0872 or +46 8 404 8115 per.arvidsson@era.ericsson.se, BTS: Mona Benlaib, +46 070 577 2529 or +46 8 404 7621, mona.benlaib@era.ericsson.se, BSS: Per Arvidsson, CSS: Johan Dahlström, +46 70 340 31 50 or +46 8 757 24 21 johan.dahlstrom@era.ericsson.se, PSS: Kjell Arvidsson, +46

70 561 3346 or +46 8 757 0999 kjell.arvidsson@era.ericsson.se.

Application: Product Marketing Managers In Malaysia, Ericsson Radio Systems AB, LV/MS, Monica Wänseth, 164 80 STOCKHOLM, monica.wanseth@era.ericsson.se.

ERICSSON RADIO SYSTEMS AB, KISTA

Product manager

Product Unit BSS is responsible for the global development and profitability of the GSM Base Station System and GSM Operation and Maintenance.

We, at Strategic Product Management GSM O&M, have the full live-cycle responsibility of GSM OSS, Ericsson's network element management system for the GSM network sold to over 100 customers in 50 countries.

Our next generation system will combine the management of the GSM as well as the UTRAN WCDMA network elements. Due to the nature of our mission we work highly cross-organisationally to align strategies with other Product Units and to improve our understanding of future opportunities.

● We are now looking for an additional person to join our team of 10 product managers. In this challenging position you will deal with: Product strategies. Requirements on products. Customer business cases. Product plans and programs. Early marketing towards our local companies

To be able to take on this responsibility, you should have several years of background of O&M and network management preferably from earlier assignments in design and as a market representative (LPM).

Your sound knowledge of modern software architectures, protocols and IT trends gives you the base to drive technology deployment for our new O&M framework.

Your understanding of our customer needs in the area of network management lets you take the right strategy decisions and helps you to communicate to the markets.

If you are a highly motivated, driving person with excellent interpersonal and communication skills, this is your career opportunity to have an impact on the future!

Contact: Stefan Spaar, +46 8 757 1875, Benita Nilsson, +46 8 757 1914.

Application: Kerstin Almlad, Ericsson Radio Systems AB, LV/HS, 164 80 STOCKHOLM, kerstin.almlad@era.ericsson.se.

Ready for something new?

Do you want to:

- have close contacts with Supply as well as Marketing & Sales of Implementation services;
- work together with product managers from Switching PU's and BU Ericsson Services;
- be able to develop your interpersonal skills and build valuable relationships;
- increase your knowledge of the next generation Switching Systems;
- influence Implementation Services strategies for the future;
- work with lots of fun in one of Ericsson's finest offices.

Then you're invited to apply for:

Product Management Positions

Switch Site Implementation services for GSM, TDMA, UMTS and Wireline Systems

Some tasks/areas:

- Service package development for new switching products (in GSM, TDMA, Wireline systems, GPRS and UMTS).

- Translate requirements of new Switching products to Implementation services and vice versa.
- Develop and maintain reference prices, and pricing guidelines, as well as 2nd line tender support to project- and price managers.
- Presentations at internal seminars, both for Marketing and Operations.
- Involvement in improvement programs towards operations units of local companies with regards to Leadtime, Quality, and Cost of Implementation.

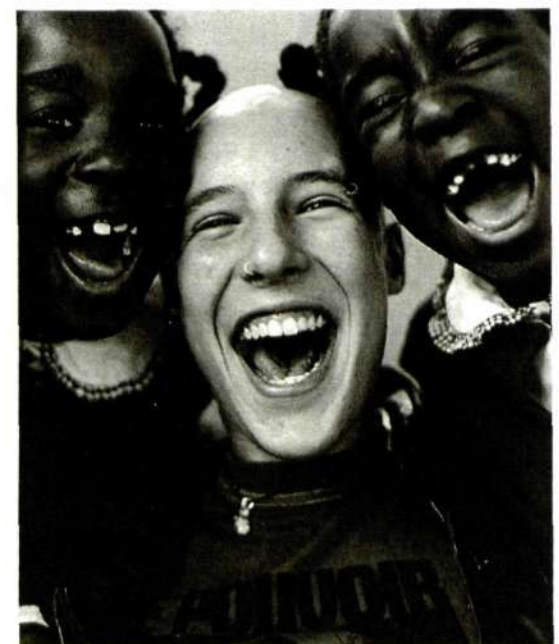
As a candidate for this position you should be able to work in teams as well as independently. Good knowledge in English is required and experience as a project manager and/or linemanager, as well as implementation experience is an advantage.

Contact persons:

Agneta Aldor, LVZ/XC, +46 8 764 11 55 or +46 70 674 11 55
agneta.aldor@era.ericsson.se

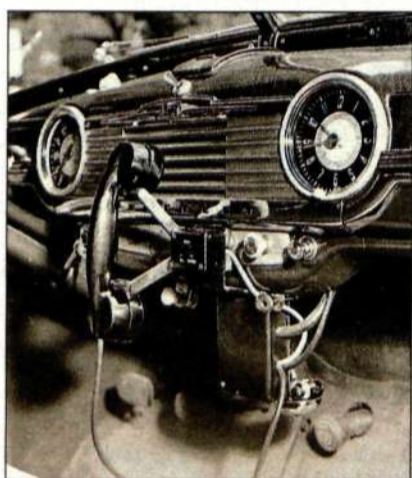
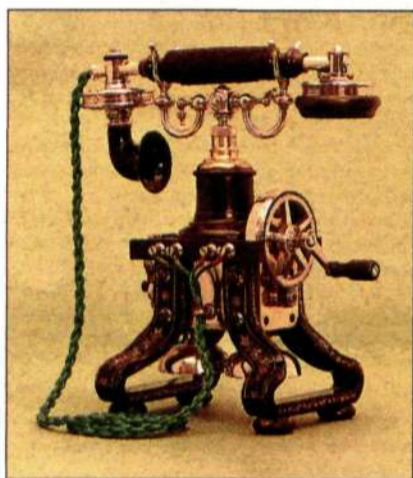
Please send your application to:

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Make yourself heard.

ERICSSON



From the Taxen and Ericofon telephones to various mobile phone formats and mp3 players. Over the past century, Ericsson has continued to supply telephones and telephone accessories according to the latest needs and trends. Lars-Magnus Ericsson, the founder of the company, resigned from the CEO position exactly 100 years ago.

From the Taxen and crossbar switch to mobile phones and talking refrigerators. Looking back over the last hundred years, developments at Ericsson have been impressive. Contact has chosen to highlight a few events from the company's 20th century history.

A century of telephony

Two world wars, a revolution and a stock market crash are some of the challenges that Ericsson has faced during the 20th century.

Early on, Ericsson realized the importance of establishing itself outside the borders of tiny Sweden. Consequently, offices and factories were quickly opened in New York, Paris, Russia and elsewhere. The Russian Revolution in 1917 resulted in the nationalization of Ericsson's factory in St. Petersburg without a penny in compensation. After that, the Russian market was closed to Ericsson for many years.

Sold to ITT

The Krueger crash in Sweden was almost the downfall of the company. In 1930, Krueger and Toll acquired a majority interest in the company. The following year, they sold their voting majority to the American company International Telephone & Telegraph Corporation (ITT), which quickly converted the purchase into a loan against which Krueger and Toll used Ericsson shares as collateral. Krueger's suicide in 1932 resulted in a serious liquidity crisis for the company. The Board was reduced to begging for funds from both Swedish and foreign banks. Losses reached SEK 23 million. A change in the articles of association also resulted in increased voting rights for foreign owners. At the time, ITT owned 34 percent of the voting rights in the company.

At the beginning of the 1940s, Ericsson

had outgrown its facilities in central Stockholm and moved to Midsommarkransen, on the southern outskirts of the city. During World War II, Ericsson lay low. Manufacturing exploded following the end of the war, however, since there was a huge demand for telephone equipment. It was during that decade that Ericsson in Sweden started the tradition of issuing gold medals for long and faithful service. The Gold Medal Banquet is still a big event for many employees.

The 1950s saw not only the first integrated circuits, it also marked the birth of the Ericofon, otherwise known as the Cobra telephone. It was probably Ericsson's biggest design success ever, with all due respect to the T28.

The final chapter of the relationship between Ericsson and ITT was written in 1960 when a consortium led by Marcus Wallenberg, bought back the American voting shares.

During the 1970s, the first microchips made their appearance and the AXE switch became Ericsson's big seller. Saudi Arabia was a major customer. In 1979, the MD110 business switch was launched.

The three sausages

The expression "Ericsson's three sausages" was coined in 1981 with the company's new logo, depicting a stylized letter E. The first mobile telephone systems were marketed using Harry Hotline as the pitchman, a strategy that produced results. By

the mid-1980s, Ericsson had 45 percent of the world market share for mobile phone systems. "The mobile phone soon became the Yuppie's favorite pet.

During the 1990s, the race was on to develop the world's smallest mobile phone. Ericsson succeeded three times in being the first to build the smallest phone. The T28 is the latest example. In 1996, a proud Lars Ramqvist introduced Ericsson as the largest telecom supplier in the world.

Demanding requirements

Deregulation has continued throughout the 1990s. Numerous new operators have appeared on the scene; operators which place demanding delivery requirements. The sale of manufacturing facilities to external suppliers, otherwise known as outsourcing, has become commonplace in the 1990s.

The AXD301 ATM switch was introduced in 1998 and third-generation mobile phone systems are here to stay. The last year of the millennium has been marked by rising and falling stock values. Creating even more drama, the board removed newly appointed CEO Sven-Christer Nilsson in July this year.

Today, Ericsson is one of the world's leading telecom suppliers with over 100,000 employees in more than 140 countries. Not bad for a workshop that began with a manually-operated lathe in a Stockholm courtyard building.

Lotta Muth
lotta.muth@lme.ericsson.se

UPCOMING

December 31 and the entire New Year holiday: Around 10,000 Ericsson employees throughout the world will be working to ensure that the millennium shift is problem-free for Ericsson.

January 5: Special issue of Contact on the millennium shift.

January 28: Ericsson presents its preliminary results for full-year 1999.

UPDATES

The Mediterranean Association of International Schools (MAIS) has awarded Raimo Lindgren, President of Ericsson in Spain, for his contributions to education. For more than 40 years Raimo Lindgren has been a leader and a driving force in the growth and leadership of Ericsson.

Ericsson and Visa have begun cooperation to design intelligent and secure solutions for payments via the Internet. The solutions will be based on WAP and Bluetooth technology.

There is major interest in the Ericsson properties that are for sale. Indicative bids for the properties in Sweden are currently being submitted.

NEW ASSIGNMENTS

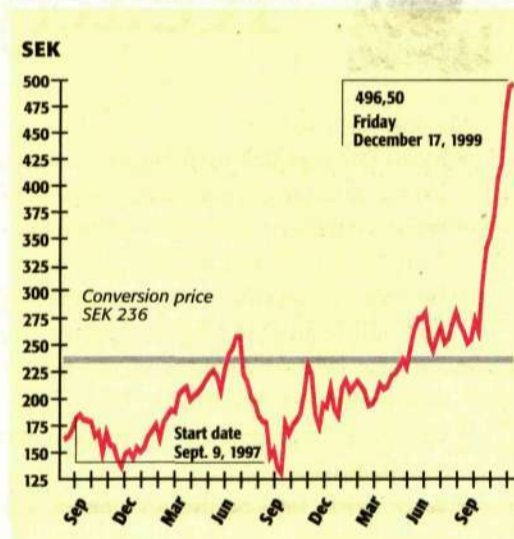
Jan Campbell became responsible for the Bangladesh market unit from December 1. He replaces Ivar Lunde, who is moving to Ericsson in Norway.

Roland Guillou has been appointed head of Ericsson in Nigeria. John-Erik Vesterlund is leaving the post and returning to Ericsson Sweden.

Julien Sideris, general manager of Ericsson Costa Rica, has decided to retire after 32 years with Ericsson.

Kaj Helander, currently director corporate market coordination Latin America, will take up his position.

THE ERICSSON B SHARE



An Extraordinary General Meeting of shareholders on September 9, 1997, approved a proposed convertible debenture program. The conversion period extends through May 30, 2003. For additional information, access the web site: <http://inside.ericsson.se/convertibles>

