

# contact



PHOTO: GUNNAR ASK

## Glimmer of hope in gloomy report

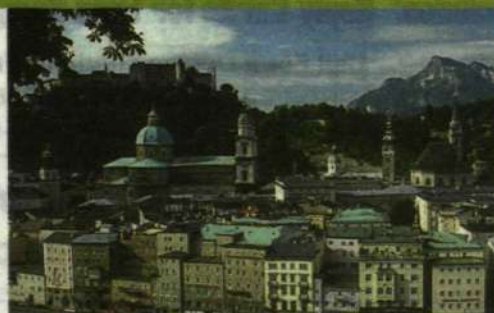
3, 4-5



PHOTO: FERNANDO MORENO

First  
in Spain  
with MMS

12-13



Mobilkom Austria  
grows with UMTS

10-11

no.  
October 31,  
2002

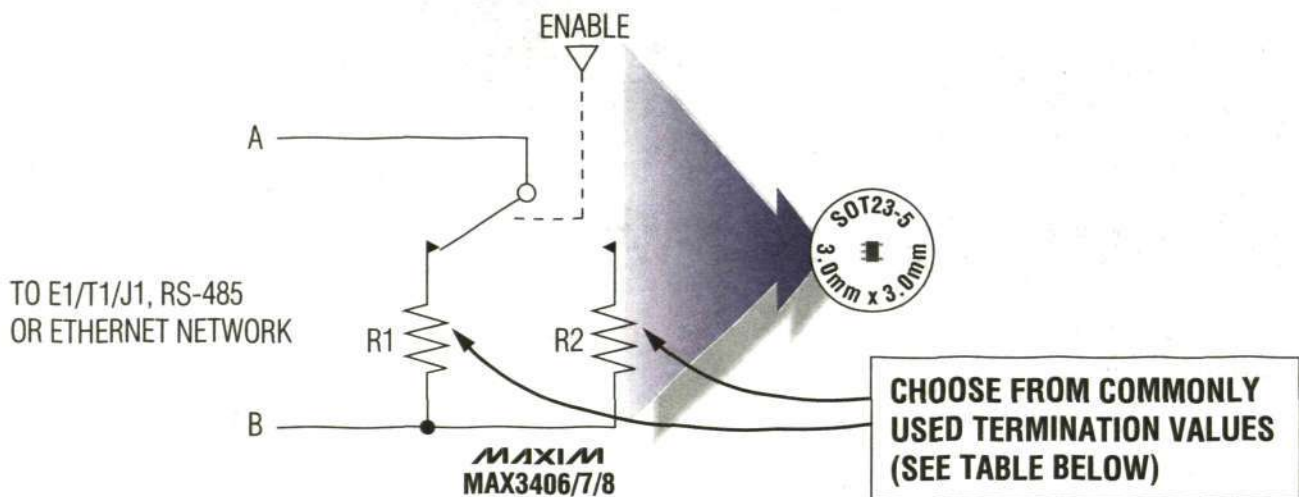
# 18

- Mobile world cooperates 6-7
- More effective names 8
- Positive news for mobile operators 9
- Well positioned on CDMA market 14-15

# INDUSTRY'S FIRST SOFTWARE-PROGRAMMABLE TERMINATION RESISTANCE IC

**±2.5% Resistance Accuracy, Draws Less than 50µA Supply Current**

- ◆ Software-Programmable Termination Resistance Can Be Changed from Remote Location Without Opening Equipment!
- ◆ Minimizes Maintenance Cost
- ◆ Available in Space-Saving 5-Pin SOT23 Package
- ◆ ±2.5% Accuracy Maintained Over Temperature
- ◆ Replaces Multiple Discrete Components



## Select the Ideal Termination for Coaxial Cable or Twisted Pair Wires

PART	TERMINATION RESISTANCE R1/R2 (Ω)	SUPPLY CURRENT (µA)	TEMPERATURE RANGE (°C)	PIN-PACKAGE	PRICE† (\$)
MAX3406	75/100	30	-40 to +85	5-SOT23	0.75
MAX3407	75/120	30	-40 to +85	5-SOT23	0.75
MAX3408	100/120	30	-40 to +85	5-SOT23	0.75

†1000-up recommended resale. Price provided is for design guidance and is FOB USA. International prices will differ due to local duties, taxes, and exchange rates. Not all packages are offered in 1k increments, and some may require minimum order quantities.



**FREE Interface Design Guide—Sent Within 24 Hours!**  
Includes: Reply Cards for Free Samples and Data Sheets

Call For a Design Guide or Free Sample  
U.K. (44) 118 9303388  
Toll-Free in the U.S. 1-800-998-8800

**MAXIM**  
www.maxim-ic.com

2002 EDITION!  
FREE FULL-LINE DATA CATALOG  
ON CD-ROM



MAXIM DALLAS SEMICONDUCTOR  
**DIRECT!**  
DISTRIBUTION

1-888-MAXIM-IC (44) 118 9303388

# Market received Q3 numbers well

Ericsson reported a loss of SEK 3.9 billion for the third quarter of 2002 on a market that still shows no sign of an upturn. Cash flow was negative, order intake was down and the outlook for sales of mobile systems has been lowered.

But Systems, excluding a credit loss of SEK 1.3 billion, actually demonstrated a zero result. That news pleased the market and made the share price rise.

Other highlights from the quarterly report are, among other things, that operating costs are significantly down, savings are showing results, and the market position for GSM/WCDMA shows improvement.

The situation on the whole is, however, very difficult for the telecom industry, as the report clearly reflects. Ericsson's assessment is that the market for mobile systems will shrink by 20 percent during 2002, compared to 2001. The earlier forecast was a reduction of 15 percent.

The lower order intake within Systems is mainly due to a weak demand for TDMA and PDC systems, as well as reversals of 3G orders. On the other hand, GSM/WCDMA invoicing increased by two percent during the quarter. That means Ericsson further secures its position as a market leader within these systems.

The market situation for wireline is harsh. Order intake and invoicing is expected to fall by 60 percent during 2002.

The downturn can mostly be attributed to the weak market for traditional circuit-switched networks in Latin America and Western Europe. But it should be emphasized that Ericsson's Engine solution has 40 percent market share.

The company's operating costs were cut by five billion during the quarter. The savings programs go on as planned. The company's annual run cost level stands at about 52 billion, but is well on the way to reaching the goal of 38 billion. That should be attained during the third quarter of 2003.

At the end of September, Ericsson had 71,700 em-



Ericsson's CFO Sten Fornell and CEO Kurt Hellström presented the third quarter report at Ericsson's headquarters at Telefonplan in Stockholm.

PHOTO: GUNNAR ASK

ployees. 4,500 employees left Ericsson during the quarter. By the end of next year, the company aims to have less than 60,000 employees.

Sony Ericsson sold 5 million telephones during the quarter. Sales of SEK 8.2 billion were however not enough to show profit. A loss of SEK 1 billion was reported, of which SEK 500 million affect Ericsson's reported income.

The outlook from the company management for next year is that the market will not shrink as much as it did this year, and that it is starting to stabilize somewhat. Sales in 3G are expected to increase measurably, when compensates for the lower demand within TDMA and PDC. Management stands by its objective of reaching profit sometime during 2003.

HENRIK NYGÅRD

henrik.nygard@lme.ericsson.se

## CDMA contract in China

Deployment has already begun of CDMA2000 1X to update China Unicom's cdmaOne networks. Deals worth more than 150 million USD were signed that also call for expansion of Ericsson's original Phase one contracts with China Unicom. Ericsson will provide the total solutions as well as services. All networks are expected to be commercial by the end of 2002.

## Triad boosts Public WLAN

Ericsson will team up with Agere and Proxim to develop and supply telecom operators with complete solutions for integrating Wireless LAN with mobile networks. Commonly called Wi-Fi, the local access to high-speed data technology is gaining importance for users of a wide range of hand held devices like PDAs, laptops and notebook computers. The three partners will work to integrate hot spot access with mobile 2G and 3G networks. Today, mainly pure stand-alone "hot spots" solutions are available on the market.

## Ratio change on Nasdaq

In order to comply with the listing requirements of the Nasdaq National Market, Ericsson's Board of Directors has authorized a change in the ratio of American Depositary Shares with regard to Class B shares. Whereas the old ratio was 1:1, from now on, one new ADS will represent 10 Class B shares. The change was effected October 23, 2002. ADS holders will not pay for the change.

In addition, the Board has asked CEO Kurt Hellström to de-list Ericsson from stock exchanges in France, Germany and Switzerland. 99 percent of Ericsson's B shares are traded in Stockholm, New York and London.



BSNL launched its complete GSM service with pomp and circumstance, during which the Prime Minister Shri Atal Behari Vajpayee placed the first mobile phone call.

PHOTO: BRIJESH KAPIL

## Two major deals in India

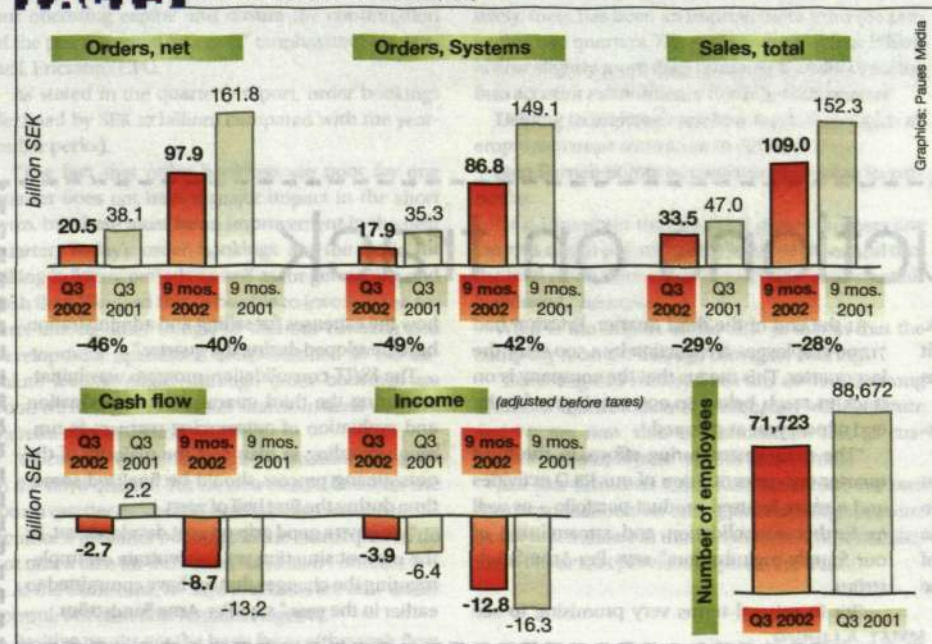
Ericsson succeeded in launching an all-new nationwide GSM network for India's largest telecom, BSNL, in mid-October. Ericsson provided infrastructure and services to launch within eight months of signing the contracts.

Other cities in India's North and East zones will see service by the end of December. Also in India, Hutchison Group selected Ericsson to provide GPRS infrastructure and integration for four existing networks in Mumbai, Delhi, Kolkata, and Gujarat. Hutchison will also launch MMS with Ericsson's solution.

## Two sites for joint venture

Ericsson and Juniper Networks will concentrate their joint venture operations to two sites - Sunnyvale, California and Gothenburg, Sweden, as part of ongoing cost reductions. The sites in Boston, Massachusetts, and Montreal, Canada will discontinue developing products for the joint venture. The product AXB 250 06 (also known as J20) is a key element in the 2.5 and 3G networks being the gateway between Internet and the mobile system. More than ten operators have already selected the AXB. The second release of the AXB is planned to ship at end of 2002, and the third release is expected to ship Q3 2003.

THIRD QUARTER 2002 (Q3)



# Restructuring ahead of schedule

Although Kurt Hellström foresees no imminent bright spots in the market, he is full of confidence about the future. Ericsson's market position for GSM and WCDMA has been reinforced and the stringent savings measures are proceeding as planned.

"It could have been better, but it could also have been worse, and the result we presented is no worse than our competitors'. Even if Nokia is an exception because of its success with phones, it also reported a poorer systems result," says Kurt Hellström, commenting on the third-quarter interim report.

Despite the current gloomy atmosphere, there are bright spots, such as the strong position for MMS, in which Ericsson now has more than 35 agreements with various operators.

Other bright spots include services, in which Ericsson continues to gain new business and is now the company selling most services among telecom suppliers. Licensing also continues to perform favorably. Ericsson recently signed a 3G contract with Mobitel in Slovenia, which is something of a milestone because it is the first 3G contract in Central and Eastern Europe.

"Our efforts to restructure the company and reduce

costs are on the right track and we are even a little ahead of schedule," he says.

"Lowering costs also means reducing the number of employees, always a difficult task. I am impressed by the loyalty and commitment shown by employees, especially those who know they have to leave."

For many operators, especially in Western Europe, expensive 3G licenses have meant that they have large debts and are therefore postponing investments. To help them increase their revenues, Ericsson has started its Business Growth Initiative, in which the company will cooperate with customers to find solutions that will increase traffic and quality in mobile networks. It is important for Ericsson to help operators out of the vicious financial circle that they are in.

"Despite the gloomy market today, I am an optimist and believe in a turnaround. The consolidation now taking place among operators could be the start of a brighter future. But before we get there, we still have a tough time ahead, although I am certain that we will handle it," concludes Kurt Hellström.

GUNILLA TAMM

gunilla.tamm@ime.ericsson.se



Kurt Hellström is impressed by the pace of restructuring efforts. "We are on the right track and are even slightly ahead of our schedule," he says.

## Cost reductions on track

Ericsson's cost reduction efforts are on track. This will make it possible to return to profit at some point in 2003, at sales levels as low as SEK 120 billion.

During the third quarter the operating expenses run rate was reduced by SEK 5 billion.

"This shows our strength in controlling what we can control today – our costs. Now we have to continue these efforts at full speed. With the plans announced so far, we have another year of cost reductions ahead of us," says Per-Arne Sandström, Ericsson's Chief Operating Officer.

At the end of the third quarter, Ericsson had 71,700 employees, a reduction by 4,500 since the last quarter. This means that the company is on track to reach below 60,000 employees by the end of next year as planned.

"The main restructuring efforts in the third quarter are concentration of our R&D activities and a more focused product portfolio – as well as further consolidation and streamlining of our Supply organization," says Per-Arne Sandström.

"It's in general terms very promising to see

how the expenses for selling and administration have developed during the quarter."

The IS/IT consolidation program was initiated during the third quarter. The identification and evaluation of outsourcing partners is running according to plan and the majority of the outsourcing process should be finalized sometime during the first half of 2003.

"We have a good grip on cost development. In the present situation we concentrate on implementing the changes that we have committed to earlier in the year," says Per-Arne Sandström.



Per-Arne Sandström



According to CFO Sten Fornell, costs are now under control, but for Ericsson to report profit next year, sales must increase.

PHOTO: GUNNAR ASK

## Increased sales most important

**"It is now more important than ever** to focus on our customers and generate business and order bookings. At the same time, we must work to reduce our operating capital and ensure the continuation of the positive trend for costs," emphasizes Sten Fornell, Ericsson's CFO.

As stated in the quarterly report, order bookings declined by SEK 12 billion, compared with the year-earlier period.

"The fact that order bookings are poor for one quarter does not have a major impact in the short term, but there must be an improvement in the next quarter. Today's order bookings are the basis for billing in future periods as well as for generating and cash flow. We need this to be able to invest in the future, among other things, so that our research and development operations are positioned at the absolute leading edge. Although order bookings are poor, we haven't lost market shares, instead we have increased for GSM and WCDMA.

"Of course, order bookings are traditionally weak in the third quarter, but we now need a boost for the fourth quarter more than ever. We can have more difficulties if the order bookings in the fourth quarter do not take a turn for the better," says Sten Fornell.

At the same time, he says that costs are now under control, but cash flow remains negative.

Positive results are the basis for positive cash flow.

Ericsson is not there yet and this makes it especially important that measures to reduce operating capital contribute to a positive cash flow trend. Comparatively, there has been an improvement from the preceding two quarters. The earlier minus of four billion is now slightly more than minus SEK 1 billion, taking into account extraordinary items in each quarter.

Helping to improve cash flow is a task to which all employees must contribute in different ways.

Sten Fornell points to accounts receivable in particular.

"It is important that we don't give customers any reasons not to pay within the allotted time. And that the total credit time, what we call DSO, is substantially reduced," he says.

What is the impact of the SEK 30 billion that the company received through the rights offering?

"Receiving this money from our owners is strong evidence that Ericsson is a company with a future and we are now able to demonstrate this to customers and employees," replies Sten Fornell.

Just like Ericsson's CEO, Kurt Hellström, he sees the consolidation now taking place among operators as the first indication that the market is now stabilizing, a factor that provides hope for the future.

GUNILLA TAMM

## Positive tones from analysts

No one had really expected Ericsson's report to set any champagne corks popping, and the analysts' disappointment over Ericsson's order bookings was palpable. But as soon as the news was released that Systems had broken even, there was a hysterical rush to buy Ericsson shares.

The analysts were initially disappointed, but scarcely surprised, by the figures in Ericsson's third-quarter report. They identified three factors as really negative: order bookings, the outlook for the fourth quarter, and the fact that Ericsson gave no clear indications regarding next year.

"I was really disappointed about the order figures in particular," comments Helena Nordman-Knutsson of the Öhman brokerage company. "Looking to 2003, there seems to be a risk that Ericsson will not break even, although efforts have never been so focused."

The average prediction before the report was released was that Ericsson would record a third-quarter loss of SEK 3.6 billion, some USD 400 million, meaning that the analysts had been somewhat over-optimistic. Even so, the share did not go into free fall, and although it declined, the fall was no worse than on a normal day at the exchange, and after the market had analyzed the figures in more detail the share shot up instead, closing on a substantial gain. The report prompted an increase in buy recommendations, reflecting the strong positive signs detected by the analysts in the report. Most of them thought that Ericsson deserved gold stars for the speed and effectiveness of its cost-cutting measures. Håkan Wranne of Fischer Partners had this to say to Swedish newspaper Svenska Dagbladet:

"The cost-saving program is going better than expected, and Ericsson's finances look healthy after the rights offering – far better than those of some of its toughest competitors."

Johan Strandberg of Deutsche Bank was impressed by what Ericsson had achieved during the third quarter:

"The company has maintained its gross margins, reduced its operating costs as planned, and cash flow is better than we had dared hope. There are some highly positive signs in those areas where Ericsson can control the situation."

Despite the disappointment over Ericsson's order bookings and the misgivings about next year, Helena Nordman-Knutsson is cautiously optimistic about Ericsson's prospects – it is always darkest before the dawn.

"I think there is hope. 3G is the answer, of course, together with economic recovery in Europe. It's the same with all technology shifts: just before the new technology really takes off, there is a period when no one dares to invest in the old technology because everyone knows what enormous advantages the new technology offers."



Johan Strandberg finds several positive aspects in Ericsson's report.

SARA MORGE

sara.morge@ime.ericsson.se

# World gathered in largest mobile alliance to date

Open Mobile Alliance, the newly established cooperation body, is the strongest concentration of resources to date in efforts to develop mobile services that provide total solutions. Ericsson's Senior Vice President, Marketing, Torbjörn Nilsson, says the alliance is a necessary concentration of strengths, and Ericsson will be one of its driving forces.

The Open Mobile Alliance, OMA, is the first cooperation body intended to develop mobile standards in which the entire value chain will be represented. The telecom industry's biggest equipment suppliers and operators will work side by side with prominent IT companies and the largest players in the entertainment industry and the financial world. OMA has two main objectives: to support standardization of mobile services and to secure end-to-end functionality of these services. This means the services should function regardless of which terminal brands end-users have or which networks are used to transport their calls. The technology that is used - GSM, GPRS, EDGE, CDMA or UMTS - should not be an issue either. Torbjörn Nilsson, senior vice president, Marketing and Strategic Business Development, says that Ericsson offer its full support to OMA.

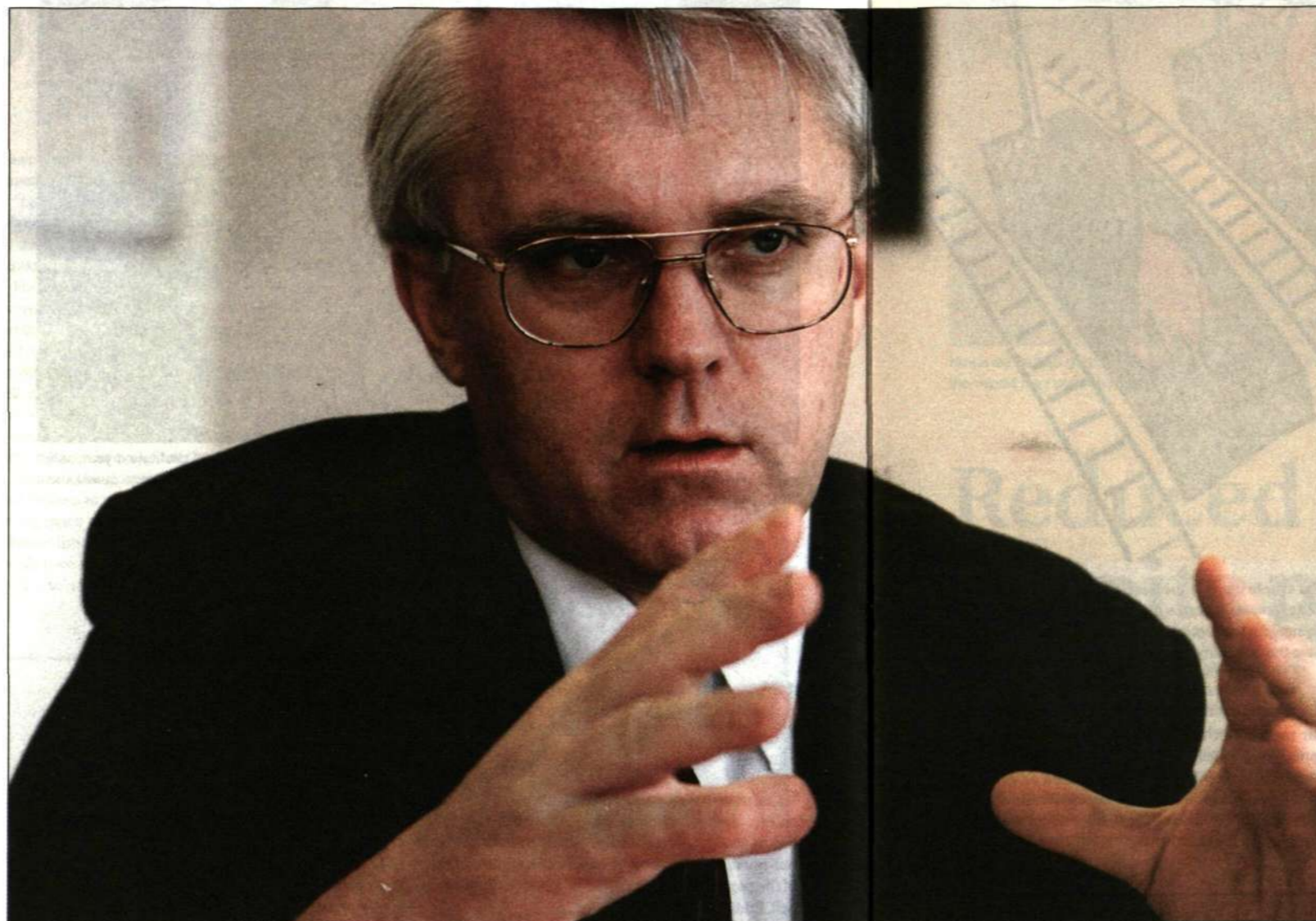
"OMA promotes open, common standards that will benefit the industry, which is also Ericsson's fundamental approach. This is a necessary consolidation of strengths, and we'll play a highly active role within OMA, particularly with regard to questions related to communication services, such as SMS and MMS."

## Fragmented telecom market

One of the reasons for forming the OMA is the fragmented nature of standardization for mobile services in the telecom market, which is divided into two factions. One of these consists of several open forums, such as the Wap Forum and Wireless Village. A number of operators and equipment suppliers, including Ericsson, have joined forces in these forums to promote various standardization activities. The other faction comprises companies that have developed and tried to promote standards over which they have exclusive rights.

All members of OMA agree that these different modes of operation have made it more difficult for end-users to utilize the services and, in turn, delayed the growth and expansion of mobile services.

"Naturally, it's self-evident that different MMS telephones should function in communications with each other, but, until now, there hasn't been a controlling body with the leverage needed to force the issue," says Torbjörn Nilsson.



Ericsson's most critical, short-term objective within OMA is to protect the standards that already serve as end-to-end solutions.

"We have Java, streaming, MMS and SMS, for example. It's important for these services to function across interface barriers before we define new standards," he says.

## More complete standards

But the question may be asked: will OMA remain intact, or will it fall apart when differences of opinion become too great?

"I believe the industry has realized that it needs a common fundamental platform (standards, functionality) for all telecom market players - a platform that will serve as a departure point for competition between the players," says Torbjörn Nilsson.

He also believes the assumption of active roles in OMA by the financial world and entertainment industry will create favorable effects.

"It's a prerequisite for creating standards that will provide as complete coverage as possible. Companies such as Disney will have their opinions on copyright, and the banks will naturally show significant interest in security aspects of the standards. It's important for Ericsson, which supports more services-driven standards, to be receptive to the needs and preferences of these companies."

Microsoft, which is known for promoting its own interests in standardization issues, is also a member of OMA.

"This illustrates even more clearly that no single player can afford to remain outside this form of cooperation. Naturally, Microsoft will actively promote its own agenda but, as long as it's prepared to comply with open standards, I welcome the company's participation as a member of OMA," says Torbjörn Nilsson.

JENZ NILSSON

jenz.nilsson@lme.ericsson.se

# World gathered in largest mobile alliance to date

## MEMBERS

### Some of the members of OMA

#### Suppliers:

Aspiro  
Ericsson  
Lucent  
Matsushita  
Motorola  
Nokia  
Siemens  
Samsung

#### Operators:

Cingular Wireless  
NTT DoCoMo  
Vodafone

#### IT companies:

Hutchison 3G  
NEC  
Orange  
Sprint

#### IT/Software suppliers:

Hewlett-Packard  
IBM  
Microsoft  
Openwave  
Sun Microsystems  
ST Microelectronics  
Texas Instruments  
Websoft International

#### Service companies:

AOL Time Warner  
Disney  
MasterCard  
Nordea  
SAS  
Time Warner  
UBS Warburg  
VISA

Torbjörn Nilsson thinks it's self-evident that different MMS telephones should function in communications with each other. Thanks to OMA, equipment suppliers will now be able to work together to promote global standards.

PHOTO: EGKE KÖLLER

## OMA

Nearly 200 of the world's leading telecom companies, IT companies and service providers met in Vancouver, Canada on June 12 of this year, to sign a cooperation agreement called the Open Mobile Alliance.

The main objective of the organization is to accelerate utilization of mobile services in all parts of the world. OMA hopes to achieve its goals by developing open standards on which services can be built that will attract end-users and function regardless of operating networks or mobile telephone brands.



OMA is the result of a merger of the Open Mobile Architecture Initiative and Wap Forum, and the Wap Forum's legal company was used to create OMA.

Other open forums united under OMA are the Location Interoperability Forum, MMS Interoperability Group, Sync ML Initiative and Wireless Village. OMA has 200 members today.

## FOUR VOICES

### Comments by four OMA members

#### Mike Short, technical manager, MMO2:

"I believe OMA will contribute to much improved functionality between terminals, services and infrastructures. The integration of MMS in mobile networks has not been implemented at the speed we originally wanted and, for telecom operators such as my company, it's extremely important to accelerate the process."

#### Håkan Persson, president, Aspiro:

"OMA is an important forum that also brings together many other standardization-oriented forums. I believe our participation will help us remove many of the obstructions that block the road to more effective business. For example, our services now have to be adapted to meet the requirements of every new telephone that comes on the market. Instead, I believe all new telephones should have a standardized format."

#### Jon Prial, development and sales manager, IBM:

"We intend to concentrate strongly on security questions. We will try to ensure that the potential achievements within OMA are reliable and fulfill the requirements IBM has on security issues. We also want the industry to think more about households and telematics, when we develop new services, and reduce their focus on mobile telephones."

#### Weiye In, mobile technology manager, UBS Warburg:

"The alliance will provide us with greater knowledge of how mobile telephony's potential can influence the entire industry. As an investment bank, we will naturally devote a great deal of energy to develop various network security solutions, but we also want to be involved in decisions on which service contents should be included and how the infrastructure should be built."



# Right name – less confusion

Cheaper, simpler and more customer-friendly. An orderly system for assigning names to products and solutions has many advantages. Mattias Isaksson, Ericsson's brand identity manager, explains that descriptive product names make it easy for customers to understand Ericsson's offering. They also support faster market rollout by eliminating delays caused by legally mandated branding processes.

In the spring of 2000, when Mattias Isaksson started work on introducing regulations for naming products and solutions, there was a lack of clarity in the area. A survey showed that customers as well as employees were confused by product names.

"Some names provided accurate descriptions of the products, while others were simply fancy labels. As a result, names that did not have logical links to the products created a risk that could undermine the Ericsson brand, since they formed small sub-sections of the brand," says Mattias Isaksson.

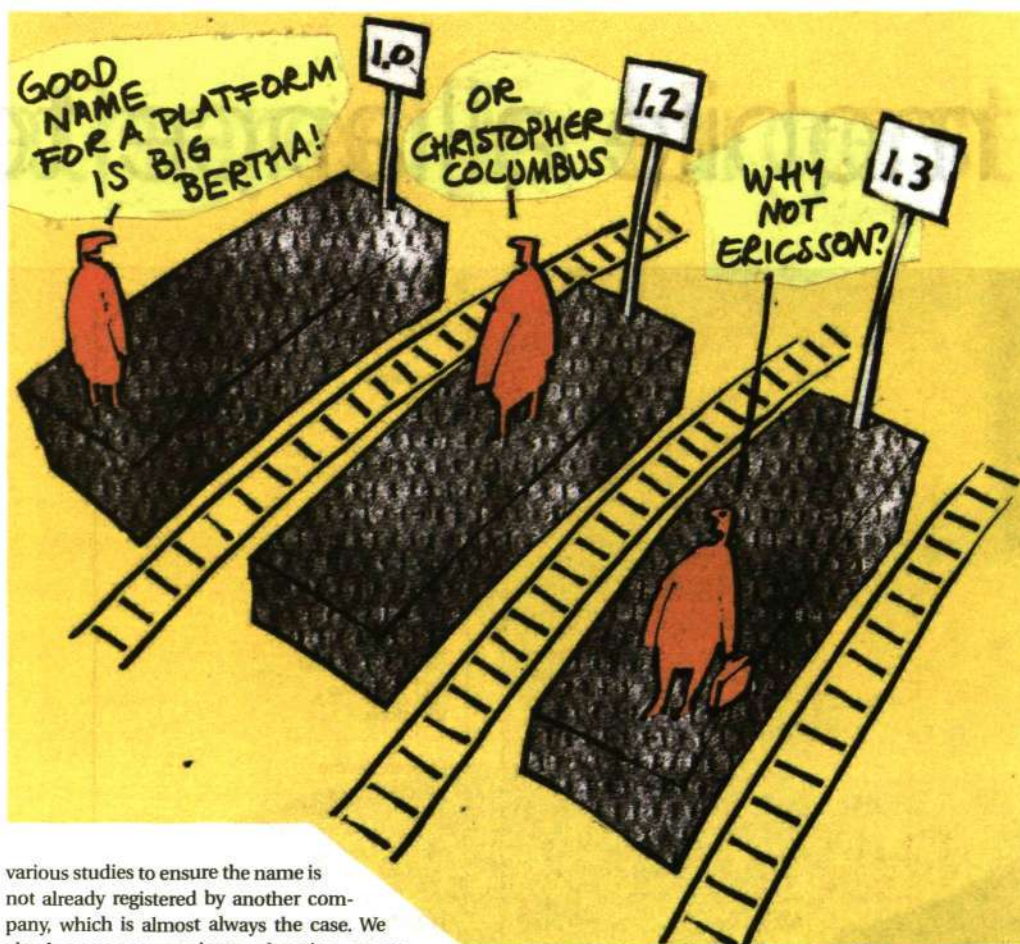


Mattias Isaksson

The strategy for naming products is based on functionality and strengthens the Ericsson brand. Products and solutions should be named in accordance with the following criteria: the first designation should clearly state that the product comes from Ericsson, followed by the product's function – for example, a mobile switch, followed by its model specification, such as GSM. It is also possible to indicate that a product has been further developed or upgraded. The name would then be stated as follows: Ericsson Mobile Switch GSM 1.2.

Mattias Isaksson says there is a significant risk of legal action for trademark infringements if the regulations are not followed. He also points out that it is expensive for companies with many brands to register and promote them.

"It's expensive, in terms of time and money. First, we have to find a good name, and then we have to conduct



various studies to ensure the name is not already registered by another company, which is almost always the case. We also have to communicate, educating our customers and employees so they understand that when we say XYZ, we actually mean IP routers. Of course there are companies that use contrived or non-descriptive names for their products and services, but they also have a branding strategy based on this approach. They are prepared to make the investments required to implement their strategy."

A comparison between 2000 and 2001 shows that Ericsson has saved about USD 8 million, or SEK 80 million, in costs incurred for product name registration requirements alone. In 2000, 1,600 new names were registered, and the following year 385 names were registered.

"We continue to emphasize the importance of this. Product names, or designations, are still assigned late in the development process, and that's not good. Some products that are still sold in the marketplace have names that, to a large extent, are clearly in conflict with

The simple name is the best. Ericsson's new names for technical platforms are descriptive and, by complying with the regulations for product names, they save the company time and money.

ILLUSTRATION: ULF FRÖDIN

our regulations, but no decision has been made yet concerning which names should be changed. We decide from one case to another, based on how well-established the names have become with our customers and how much longer the product is expected to remain in the market."

JESPER MOTT

jesper.mott@lme.ericsson.se

© brand.ericsson.net

## New names adopted for platforms

When Ericsson adopted a new strategy document earlier this year, the company decided to concentrate on two technical platforms for packet and server-oriented applications. The platforms have now been assigned new names and a collective name has been adopted for the architecture.

The technical platforms that were previously grouped under the name TSP for control functions and service networks, and CPP for transport and connectivity, are now called Ericsson Telecom Server Platform and Ericsson Connectivity Packet Platform, respectively.

TSP and CPP are no longer proper names, but rather acronyms that may be used for purposes such

as internal documents and presentations, provided the correct nomenclature is clearly stated. The collective name of the architecture for the technical platforms is Ericsson Packet Platform Architecture.

The name Ericsson Connectivity Packet Platform is the new interpretation of the acronym CPP. Ericsson Telecom Server Platform was adopted because the platforms are normally used for applications included in telecom network servers. The new names are effective immediately in all documentation and communications. For existing application products using the platforms, the new names will be introduced in conjunction with communication of new product releases.

Göran Rasmussen, director within Corporate Marketing and Business Development, has managed the efforts to introduce new names for the platforms.

"In the past, there was a lack of clarity surrounding the definitions of product names and, in the case of TSP, there were also obvious branding problems with the name. Both platforms are core elements in Ericsson's product development, and it was only natural for us to comply with the new regulations for product names. The common architecture also needed a new name, because it could not be presented clearly without a definitive name," says Göran Rasmussen.

JESPER MOTT



Nokia again had good news for the stock market and the company's share rose like a hot-air balloon after the report was published. PHOTO: PRESSENS BILD

## Reduced forecasts despite profits

Unlike Nortel, which reported its eleventh successive loss-making quarter, both Nokia and Motorola were able to report positive growth during the third quarter of 2002. However, both companies warn of reduced sales in the future. And there the similarities end. Motorola's report caused its share to sink like a stone, while Nokia's report acted like a blast of hot air and sent the share soaring.

First came Motorola's report, giving the market a real cold shower. To be sure, the company made its first net profit for one and a half years, but what good is that when the outlook is grim? Motorola now expects sales of around USD 7.1 billion during the last quarter, which is USD 400 million less than was previously forecast. The anticipated EPS figure has been adjusted downwards from USD 0.14 to USD 0.10. Earnings forecasts for 2003 are also being lowered, since the market – for systems and mobile phones – is thought to be weakening. The revised forecast estimates sales for 2003 at USD 27.5 billion, compared with the earlier forecast of USD 29 billion.

### 400 million estimated for Nokia

Motorola is also lowering its forecast for mobile phones sales. The company estimates that total worldwide sales for the year will amount to 390 million units. But Nokia does not agree; Jorma Ollila is sticking to his earlier forecast that total worldwide sales of mobile phones during 2002 will reach 400 million, and he also believes that Nokia's future growth will be driven by sales of mobile phones.

"The market for mobile phones is entering a new

growth phase as we achieve volume production of handsets with color screens and MMS," says Jorma Ollila.

This comment, combined with third-quarter earnings of EUR 1.245 billion and the fact that Nokia anticipates taking further market share during the rest of the year, was music in the ears of the investors. The share rose like a balloon, drawing other telecom shares up with it.

Nokia's third-quarter earnings were up 16 percent on the year-earlier period and exceeded analysts' forecasts by USD 65 million. In addition, the company anticipates that EPS will be around EUR 0.25.

### Gloomier for Nortel

The mood was not quite so upbeat on the systems side, however. Sales of mobile systems fell 7 percent and operating profit was a full 48 percent lower than for the corresponding period in 2001. But despite this decline, Nokia is still making money on its systems.

Nortel had considerably gloomier news as it reported its eleventh successive loss-making quarter. Sales were down 36 percent, and the net loss was nearly USD 1.8 billion – although it is worth noting that this is considerably less than the company's loss of USD 3.47 billion during the third quarter of 2001. But it would be surprising if it were otherwise, considering that Nortel has cut its workforce from 96,000 at the end of 2000 to fewer than 39,000 today. So costs should be very much lower today.

SARA MORGE

sara.morge@ime-ericsson.se

## Lucent lowers forecast

Lucent Technologies is lowering its forecast for the fourth quarter of 2002, which will necessitate releasing another 10,000 employees. The company hopes that these drastic measures will enable it to return to profit during 2003. According to CNNmoney, Lucent is anticipating a per-share loss of USD 0.65 for the fourth quarter, compared with its earlier forecast of a loss of USD 0.45 per share.

Lucent's fiscal year closes at the end of September, and the company plans to cut the total number of employees to around 35,000 by the end of its fiscal year in 2003.

## Hutchison launches "3"

Hutchison has launched a new brand for mobile services. The new company – with the minimalist name "3" – has branches in Australia, Denmark, Hong Kong, Italy, the UK, Sweden and Austria.

"It is easy to remember, it exists everywhere, and it is not affected by language or cultural differences, or even technical requirements. In numerology, three is a lucky number that is associated with happiness, optimism and clarity," writes the company in a press release.

## FT drops Mobilcom

France Telecom is to totally withdraw from Mobilcom, according to German business daily Handelsblatt. FT is selling its 28.5-percent holding in the mobile operator to a consortium of banks. In return, the banks will continue to provide credit to Mobilcom, which has liabilities of more than USD 6.5 billion. The Mobilcom share rose strongly on news of the deal.

## 4G call in Japan

Japanese operator DoCoMo has announced that it has conducted a successful 4G call. The call was transmitted at a speed of 100 megabits per second (Mbps) via a satellite link, compared with the 2 Mbps transmission speed of 3G. According to Reuters, Japan's postal and telecommunications authority plans to push for development of the main 4G technologies by 2005 and a commercial launch not later than 2010.

## Increased growth forecast

Growth in the telecom sector will increase next year in terms of investments by end users, believes market analysis group Gartner Dataquest. Its analysts predict market growth of 7.5 percent, a 2.7-percent increase compared with the expected growth rate for 2002. If we are to believe Gartner, the world's consumers will collectively spend nearly USD 1.445 billion on telecom services and products next year.

## Tele2 quickens 3G pace

Sweden's second largest telecom operator, Tele2, plans to quicken the pace of its 3G investment program next year.

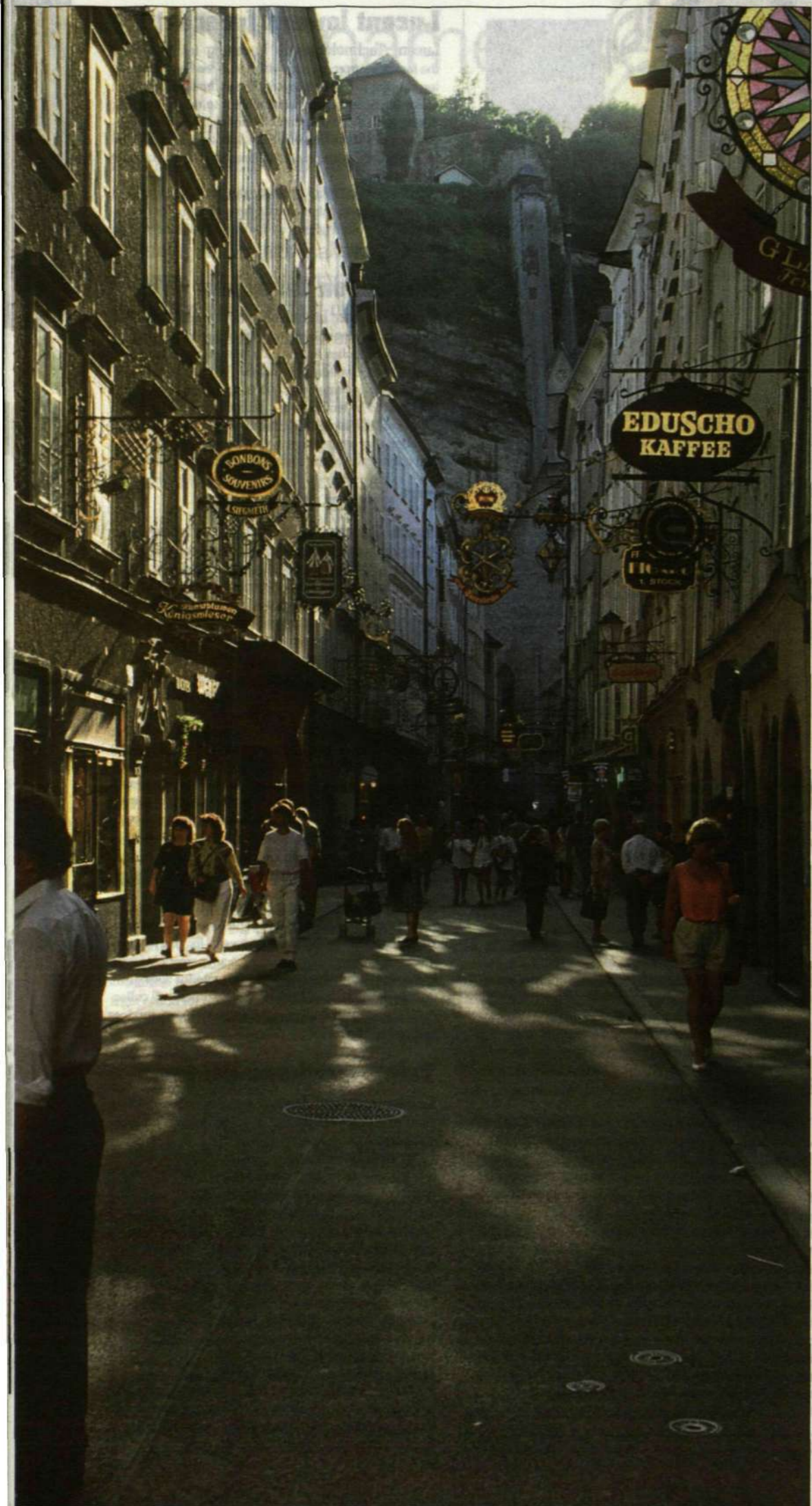
"We have told Ericsson we will be doing some shopping," says Tele2 President Lars-Johan Jarnheimer in an interview with business daily Dagens Industri. "Our investment level will be high next year. In terms of volumes, the UMTS build-out will really pick up speed in the new year – it will be full steam ahead."

On the other hand, Tele2 is holding off a while longer before launching MMS, despite the fact that competitor Vodafone has already taken the plunge.

"We could press the start button today if we wished, but why should we, when there are not yet enough phones out there with the capability? If you are going to launch a campaign, it has to be worthwhile."



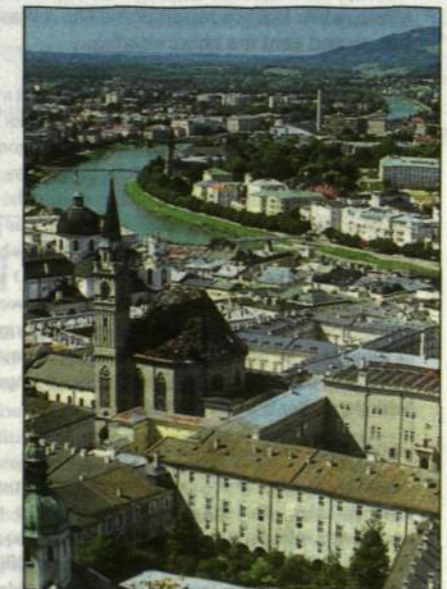




# Austria bucks trend in Europe

On September 25, 2002, Mobilkom Austria launched its national UMTS network. Despite the dismal European market, the operator has both a strong financial position and satisfied customers. With a network delivered by Ericsson and services in place, the operator is now waiting for more 3G terminals to be launched.

Initially, the 3G network covers 25 percent of Austria's population. Boris Nemsic, CEO of Mobilkom Austria, explains that 40 percent of the population will be covered by year-end. The operator estimates that a larger amount of terminals will be available in the next two to five months. "We have worked hard to put in place network and services. Now we're hoping that the terminals will soon become available. As soon as there is a



Mobilkom Austria paid EUR 171 million for its 3G license. This is one explanation of the operator's strong financial position. Another is the company's dominance in GSM.

larger range of 3G terminals, we will undertake a commercial launch," says Boris Nemsic. Ericsson is one of two suppliers that have helped the operator to launch its network ahead of schedule. Georg Donaubaue, Mobilkom Austria's UMTS manager, explains the early launch. "We dominate our market and are used to working with systems from several suppliers. We have a high level of GSM expertise and our personnel can quickly familiarize themselves with new technology. This has been key to our launch," says Georg Donaubaue. Despite the challenging market situation, Mobilkom Austria has maintained a strong financial position. One of the reasons is that the company had to pay a relatively low fee for the license - EUR 171 million. But the most significant reason is the strength of the operator's GSM business, with a market share of 42.8 percent. "Each GSM subscriber generates about EUR 35 a month in revenue. The cost of the 3G rollout we are conducting in 2002 amounts to about EUR 25 per subscriber. This means the investment cost for the full year is lower than the revenue from GSM for one month," says Georg Donaubaue. Boris Nemsic points out that the 3G launch is an evolution, not a revolution. From the customer's perspective, services development is a seamless process. "Customers need never concern themselves with whether the service is based on GSM, GPRS or UMTS," says Boris Nemsic. Mobilkom Austria has put considerable muscle into creating a complete portfolio with exciting services - for example, the company's collaborations with Reuters

- MOBILKOM AUSTRIA**
- Mobilkom Austria was founded in 1996
  - For the owner, Telekom Austria Group, it is the most successful venture.
  - In the first half of the year 2002, Mobilkom Austria group counted 4 million customers and 3,518 employees - bringing in revenue of 906.9 million EUR.
  - Mobilkom Austria launched Europe's first national UMTS network on September 25, 2002.

and with Austria's ORF television channel. The operator also has a license for banking operations in Austria, creating opportunities in e-commerce services. "We started by carrying out a customer segmentation, and found that we had to offer services with both local character and personal design. Customers in large cities have certain preferences and businesspeople have others, and so on. Here in Austria, people are interested in sports results, so we offer services whereby people can check the results quickly and view them with pictures via MMS or via streaming video," says Georg Donaubaue. Six operators have obtained 3G licenses in Austria. At least one of them has backed out. Mobilkom Austria expects that four of the six original players will invest in and deploy a network.

**JESPER MOTT**  
jesper.mott@lme.ericsson.se



Boris Nemsic says that Mobilkom Austria has worked intensively to put a network and services in place. The operator is now waiting for a larger range of terminals to become available.

## Success despite late start

It took many years for Ericsson to achieve a breakthrough in system sales in Austria. As one of Mobilkom Austria's two 3G suppliers, however, the company is demonstrating its leadership. "The Austrian launch is important for us and the entire industry," says Anders Runevad, business development manager for Ericsson's business unit Systems.

In June of 2001, Ericsson was one of two suppliers awarded 3G contracts by Mobilkom Austria. Both suppliers are delivering core and radio access networks in two separate geographic areas. It is expected that about 1,000 base stations will be deployed throughout the country by year-end. "Previously, we had almost no system sales. Austria was a white spot on Ericsson's GSM map. I believe, that the breakthrough was made possible

by two achievements: In 1998, local teams, each targeting one customer, were assembled. Since then we have had a dedicated team for Mobilkom. We could build up the relationship with them on a personal and daily basis. "Thus, we could instill the confidence that Ericsson has the right solutions and the right local competence and support to become supplier to Mobilkom. The other important achievement

was the successful GSM roll-out to VIPnet in Croatia. Mobilkom Austria is the principal owner of VIPnet, and the good experiences with Ericsson in Croatia inspired mobilkom to do business with Ericsson also in Austria," says Kurt Oberndorfer, key account manager for Mobilkom Austria. Until now the roll-out has gone smoothly. The customer has launched 3G before the competition and ahead of schedule. "This is a customer that aims to be first with everything they bring to the market. It has a high level of technical expertise within its own organization, and is thoroughly familiar with the market. This has helped in our work with the roll-out. The relatively low license fee has only been a minor reason for their speed," says Kurt Oberndorfer.



**JESPER MOTT**  
jesper.mott@lme.ericsson.se



From GSM to MMS. Reliable solutions and fast reaction time are two reasons that Amena keeps using Ericsson as supplier, according to Javier Viviente, service engineering manager at Amena.

PHOTO: FERNANDO MORENO

# Market drivers in the

Amena may be one of the youngest operators in Spain, but that doesn't mean they let others lead the way. With Ericsson as supplier, they have managed not only to establish themselves in the market in record time, but also to beat their Spanish competitors in the race to launch Multi-Messaging Services.

When Amena chose Ericsson as supplier for their Multi-Messaging Service (MMS) solution, the launch date was set for only one month away. This kind of time-plan could make the most hardened project leader panic, but for Key Account Manager Maurizio de Dominicis, it was business as usual.

"After we were selected to deliver a test-system, I was quite confident that we would get the contract. So I started making preparations, placing orders for equipment and so on."

Investing money without having an order is of

course risky business. If the deal doesn't go through, the equipment must be sold back to the supplying business unit and penalty payments are incurred. But this kind of gamble is necessary," says Maurizio de Dominicis.

"Business today is a matter of evaluating the risks against the long-term benefits. If you don't take the risk, you may not get the deal. In this case, the fact that we



Maurizio de Dominicis

could guarantee an MMS launch before July helped us get the contract."

Fast roll-outs have been part of Ericsson and Amena's relationship from the very beginning. Their first deal was in 1998 and covered the deployment of a GSM network, a turnkey solution that gave the newborn operator time to focus on getting its organization in place.

Javier Viviente, service engineering manager at Amena says that Ericsson, being number one in the GSM business, was a natural supplier choice.

"This was a very ambitious project, and a big task. Ericsson was to deliver a large part of the radio network in up and running condition. We let them take care of almost everything, from site acquisition to network planning and installation."

The radio network was rolled out in three phases. First the largest and most important cities were covered, then the smaller cities and highways, and in November 2000 the final goal of national coverage

# Dreaming of an MMS Christmas

Amena and Ericsson won the Spanish MMS race with their launch on June 29, but work does not end there. After warming up the market with campaign prices, operators are now preparing to charge full price for their MMS services.

Ericsson's MMS solution is fully integrated in Amena's network, which means that the services are charged through the company's billing system. The EUR 0.15 it costs to send an MMS is a campaign price, designed to stimulate the market.

"Personally I think these prices are too close to short messaging prices," says Javier Viviente, service engineering manager at Amena. "But MMS is basically an evolution of short messaging, and we must make the transition as smooth as possible for the consumers. At the end of the campaign period we will evaluate and perhaps make pricing adjustments."

The deal between Ericsson and Amena includes MMS technology, as well as access to services developed at Ericsson Mobility World. However, a more far-reaching cooperation is now being discussed, according to Javier Viviente.

"We are in close contact to see what else Ericsson can provide in terms of MMS services, and right now we are closing a strategic deal between our Innovation Center and Ericsson, where Ericsson Mobility World will have a key role developing new services with Amena."

Relevant and user-friendly services are key to introducing MMS among consumers. Pioneering a new market can be tough, but as other operators in the country follow with their MMS launches things start to spin faster. "As always with new technology, it is a matter of educating the end-users as well as to the market. So far we have had a learning phase, and now we are getting ready to take the next step. We think that Christmas 2002 will be an MMS Christmas," concludes Javier Viviente.

TONYA LILBURN



Amena's Javier Viviente and Key Account Manager Maurizio de Dominicis are proud that cooperation between their companies made Amena the first Spanish operator to launch MMS. Now they are counting on Santa Claus to help them promote the services.

# fast lane

was reached. In two years, the Ericsson team installed 3,000 base transceiver stations. Maurizio de Dominicis recalls this period as very intensive.

"It was an enormous job. The entire organization was totally dedicated to finishing the project on time, and we were working day and night. When we made it, it felt like we had broken a world record."

This successful completion of the turnkey project did by no means mark the end of Ericsson and Amena's cooperation. Since then, Amena has selected Ericsson as one of the main 3G radio network providers, as well as its MMS solution ven-

dor, and they continue to work closely together. Daily meetings on all levels of the organization and mixed project groups have brought employees from the two companies together into a targeted team.

"Our ties to Ericsson are very strong. We know each other and how to work with each other, and this is very important when we are out there doing business," says Javier Viviente.

TONYA LILBURN  
tonya.lilburn@ime.ericsson.se

YEAR	1998	1999	2000	2001	2002
	January Kick-off for new company		March Granted a UMTS license	January 1.2 million customers	July First operator to launch MMS in Spain
		January Amena offers mobile telephony services with network in ten cities		February 4 million customers	September 6 million customers

## AMENA

Amena is part of the Auna group, a complete telecommunications operator that consists of eight companies covering different areas of the market: fixed telephony and data business (Retevisión); mobile telephony business (Amena); Internet (eresMas); and Cable (Madritel, Menta, Able, Supercable Andalucía and Telecom Canarias).

Auna was formed as a result of the deregulation of the Spanish market and its original backers included Telecom Italia. In 2001 Telecom Italia sold its Auna stake to local investors including the Spanish bank Banco Santander Central Hispano.

# Conquering the CDMA world

Recent contracts are ample proof that the CDMA market is stirring. Ericsson's ambition is still to become one of the top three suppliers of CDMA within two years.

To Åke Persson, head of Business Unit Mobile Systems CDMA, there is no doubt the CDMA market is a growth market.

"This is the time to gain new market share," he says, "there is a lot of interest in CDMA2000 right now and there are good opportunities for CDMA suppliers."

Ericsson is currently the fourth largest CDMA infrastructure supplier in the world. A top challenge is the current price pressure, created by fierce competition



"But with our leading technology and platforms along with the services we offer, and finally our worldwide presence, I think we're better positioned than most of our competitors," says Åke Persson.

As Ericsson ventured into CDMA a few years back, the strategy was to retain the customer base and develop a leading 3G system. Both goals have been met, and Ericsson can now offer 3G-solutions for both WCDMA and CDMA2000. A cdmaOne contract and successful CDMA2000 1X trial with China Unicom are two examples of last year's strategic victories. Another recent success is a contract with BellSouth International in Panama. The latter is a win of particular significance, as Åke Persson foresees that other Latin American operators are likely to consider CDMA2000 as well.

"It's a real balance to achieve our market share objectives and at the same time manage our efficiency programs to help Ericsson become profitable," Åke Persson says, smiling at his own understatement. "It will be an intense year."

ELIN AHLÉN  
elin.ahlden@ime.ericsson.se



Continued success for the Business Unit Mobile Systems CDMA in San Diego.

## Best of the best in

Chilean operator SmartCom PCS is a pleased Ericsson customer. As far as Chief Technical Officer Felipe Gonzalez is concerned, he is getting both the best technology and supplier.

There are four nationwide operators in Chile, making it a rather competitive market. Of the nation's 14.5 million inhabitants, roughly 5.5 million use a mobile phone, leaving penetration at around 40 percent.

"All the operators are offering good services, so the challenge for us is to differentiate ourselves. Being the only one to provide a true wireless Internet solution has helped us create an image as flexible and innovative," says Felipe Gonzalez.

SmartCom is the only CDMA operator in Chile, and will be the first to offer 3G services - CDMA2000 1X was recently launched in Santiago. But Felipe Gonzalez emphasizes that the

cooperation with Ericsson goes beyond technology. They meet regularly to discuss the market, the customers' demands, service and marketing.

Felipe Gonzalez emphasizes that he is more than pleased with the support he gets from Ericsson, both locally and centrally.

"We're doing very well together. We feel that we are close to Ericsson and that Ericsson is close to us," he says.

Cooperation with Ericsson has been ongoing, practically from the moment that SmartCom first deployed in Chile.

"It's an advantage that our relationship goes so far back. Actually, it's a double advantage in our eyes - we're getting the best technology from the best supplier."

ELIN AHLÉN



## Chile



"We feel that we are close to Ericsson and that Ericsson is close to us," says Felipe Gonzalez, chief technical officer at SmartCom PCS in Chile.

## Future-proof platform brought home the contract

Ericsson in China faces tough competition from other CDMA vendors. But when Morris Zhang, account manager for China Unicom argued for CDMA2000 1X he presented the customer China Unicom with an offer they couldn't refuse: a future-proof hardware platform.

Moving to a new technology platform can be a hurdle when pressure is on to keep up with competitors. But the future-proof Connectivity Packet Platform (CPP) was a key reason that China Unicom chose Ericsson to upgrade its cdmaOne network to CDMA2000 1X.

"We recently changed to the CPP platform, and this slowed us down somewhat. But it also meant that we were the only ones who could offer a solution that supports a smooth upgrade to 3G without having to change the underlying technology. Now they will be able to use the same platform for another three to five years," says Morris Zhang.



Morris Zhang

To date, the deal is worth a total of USD 170 million and covers expansion of China Unicom's 2G network in seven provinces as well as upgrade to CDMA2000 1X. A substantial part of the network is to be in commercial use by the end of the year, and a nation-wide launch of the service is planned for the first quarter of next year, so deployment will take place in only a few months.

"We have the competence and the resources, and we are used to working fast. We learned a lot when we worked with the cdmaOne roll-out. And of course this contract is no surprise for us, so we have been making certain preparations," says Morris Zhang.

The full rollout includes a CDMA 2000 1X radio network, the AXE 10 switching solution, and the Telecom Server Platform (TSP) based HLR, as well as network management and a full portfolio of features and services. Jonathan Kahn, product manager of CDMA at Ericsson China is proud of Ericsson's strategy to move to a new platform.

"Many vendors are just expanding their old equipment, but we are the only ones that can offer a solution that is designed for future services. I think China Unicom found the compact and high performance of the new platform attractive, including the possibility to migrate to next generation technology without making new investments," he says.

China Unicom is China's second largest mobile operator, with around 60 million subscribers, of which around four million are CDMA subscribers. Following deployment of the CDMA2000 1X network, the capacity will be around 30 million CDMA subscribers.

"This is Ericsson's largest CDMA network, and of great importance in the region. I think it will spur the growth of CDMA globally as China Unicom's continuing commitment will strengthen other Asian operators' confidence in this technology," concludes Jonathan Kahn.

TONYA LILBURN  
tonya.lilburn@ime.ericsson.se

### CDMA

- CDMA is the world's second largest digital standard with 130 million subscribers.
- 15 million subscribers are already using the 3G-technology CDMA2000.
- 40 percent of all mobile subscribers in the US use CDMA, and 40 percent of all infrastructure investments in the US are in CDMA equipment. The situation in Asia Pacific is about the same, and in Latin America, the numbers are around 20 percent.
- Worldwide, 20 percent of infrastructure investment is in CDMA, but industry analysts expect that number to grow to 30 percent within the next few years.
- Ericsson has CDMA customers worldwide, for example China Unicom, Bell South International, SmartCom, and Verizon Wireless.

The biggest drain on productivity is right under your nose

Develop better software faster with Telelogic Tau® Generation2!

Development Visualized · Productivity Realized

To learn more visit: [www.telelogic.com/taug2\\_nordic](http://www.telelogic.com/taug2_nordic)

Telelogic - Strategic Supplier to Ericsson



Telelogic  
[www.telelogic.com](http://www.telelogic.com)



## Everyday Learning

When times are hard, financial realities may restrict your opportunities for attending certain courses, but don't let this spoil your desire to learn. You can learn at your workplace and you can learn on your own.

Ericsson University offers more than 250 free Net-based courses! The courses are available to all Ericsson employees via the Internet. This means you can take them at work or at home.

[university.ericsson.se](http://university.ericsson.se)

ERICSSON

# Conquering the CD/DVD

## Uniform tools simplify work

In a rapid change process, Ericsson's Research and Development operations is switching to uniform methods and tools for its development work. The aim is to achieve major savings in license expenses and create ways of using resources more flexibly among units.

"We have three assignments," says Ronald Ingman, who works in the organization for technical platforms and is responsible for managing change related to methods and tools, for all of Ericsson.



Ronald Ingman

"We have decided to switch to uniform methods and tools in order to reduce license expenses and increase productivity. We are well on the way, and most of the process will be complete within the year or at the beginning of next year."

The current situation is that every technology platform - AXE, CPP, TSP, et cetera - largely requires its own set of methods, that is, processes, procedures and tools. The common portion is relatively small. The aim is for this portion to be considerably larger, and users will only continue to use specific tools when there is good reason to do so. These decisions are made by the R&D Efficiency Board, which consists of development unit managers, with Ericsson's Senior Vice President, Technology, Jan Uddenfeldt, as chairman.

Altogether, R&D will end up with considerably fewer tools, which in six months will mean a 50-percent cut in license expenses that currently amount to approximately USD 100 million a year. The number of tool suppliers is also expected to decrease sharply, the aim being to have no more than two per function.

Regarding applications, the level of abstraction is to be raised by means of modern tools that permit developers to invest more effort in the applications than in the tools.

### Common list

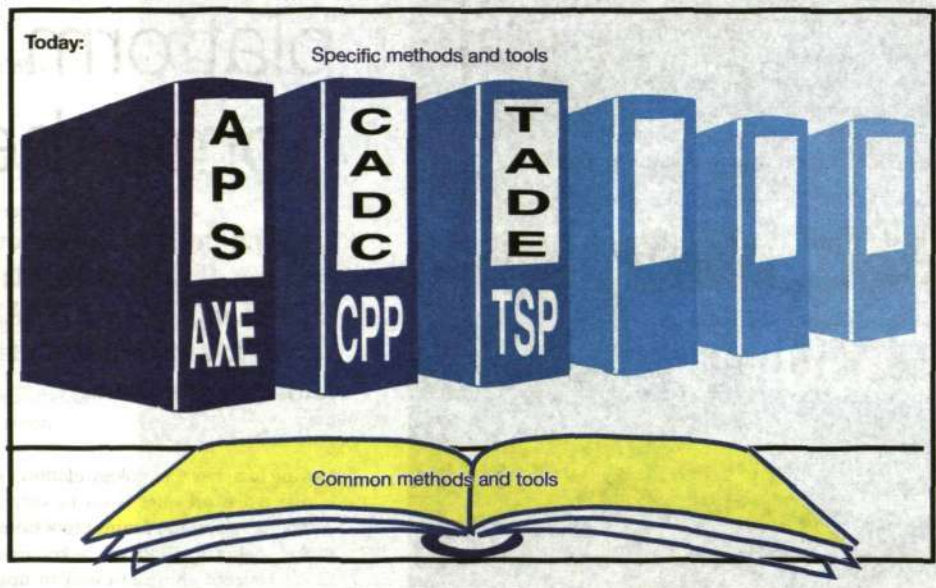
To implement the change, a new product is being introduced: Common Ericsson Development Environment, CEDE. This is a development environment that prepares a list of valid tools. The first version, CEDE 0.5, is scheduled to appear in December this year, while CEDE 1.0, with considerably fewer tools, is to appear in the first quarter of 2003. Plans for the organization's transition to the new tools must be ready by then.

"We are expecting to be able to handle about 80 percent with the help of CEDE," says Ronald Ingman. "The rest we should be able to manage via click-to-buy, whereby we can steer our purchasing of new tools."

An inventory of current tools was carried out in September, and a plan for convergence toward a common set was to be prepared in October.

"This is a necessary change, and it's a matter of making the best of the situation, so that we obtain the best assortment of tools."

To reduce license expenses, an internal second-



This is how things will look:

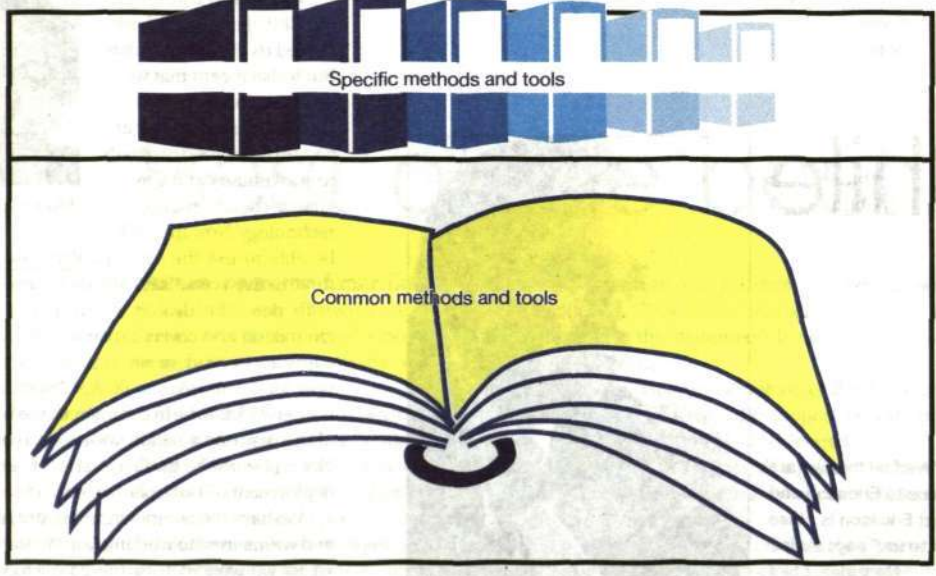


ILLUSTRATION: KEROLD KLANG

hand market is to be set up - this could make some licenses available for one-sixth of the price of a new license.

### Fast enough

The change is being touted as a paradigm shift, a shutting down of internal tool development. Internal tools will now only be developed when the right tool cannot be obtained in the open market, or when the tool required is intimately connected with Ericsson's internal interface.

"We know that many designers may feel that this inhibits their creativity, but we are certain that the advantages outweigh the disadvantages," says Ronald Ingman. "It won't damage the project and Ericsson now will have an organization that can always answer questions and help the designers."

The new organization will have so-called TAMs - Technical Area Managers - who define methods and tools, a unit that is in charge of distributing the solutions throughout the R&D organization, as well as a

unit that ensures that the solutions are introduced according to plan.

Next on the schedule is the completion, in October, of the convergence plan, which is designed to identify suitable times to introduce changes to ongoing projects - for example, through automatic conversions between different tools.

"You can't postpone change too long," says Ronald Ingman, adding that it will become important to be close to Ericsson University and to implement Best Practices to refine the process.

Introductory seminars on CEDE 0.5 will be held on December 5 and 6.

LARS CEDERQUIST

[lars.cederquist@lme.ericsson.se](mailto:lars.cederquist@lme.ericsson.se)

[essex.ericsson.se](http://essex.ericsson.se)

[inside.ericsson.se/technology/dtl/efficiency.html](http://inside.ericsson.se/technology/dtl/efficiency.html)

# Higher cooling requirements

The miniaturization of electronics, involving ever higher-capacity components and microchips, creates higher demands on the cooling of base stations and other equipment. At Ericsson, there is a competence center that studies different methods of removing heat from chips, which can become so hot that the energy per surface unit corresponds to the surface of the sun.

"Cooling with air is still by far the most common method and will no doubt remain so, since it is simple and cheap," says Mikael Arvidsson, head of Ericsson's department for cooling methods. "But it is not possible to improve air-based cooling endlessly using fans; other methods will be needed – for example, various forms of fluid-based cooling."

The trend is that the continuous improvements in electronics, with more transistors being packed onto minute surface areas, are generating much more heat. This heat must be removed to prevent damage to the component. Granted, research is also being done toward creating more heat-resistant components, but it won't solve the entire problem.

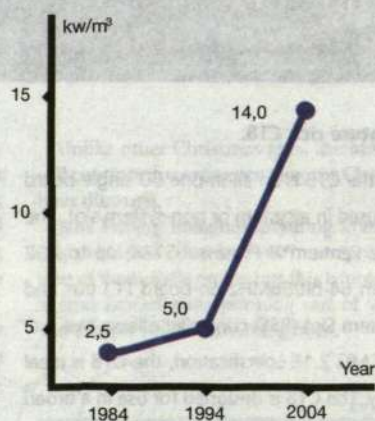
Björn Gudmundsson, Ericsson's specialist in this area, cites a list of methods that are currently the focus of research in the industry. The list includes the entire range of methods, from cooling the component itself to effectively removing heat from the cabinet or the premises in which the base station is mounted.

"We survey the methods available and test the technology, but we also develop our own solutions," says Björn Gudmundsson.

The principle is that heat is removed in several steps. It is created in the chip which is mounted in a package which is soldered to the printed circuit board. The heat is both transferred directly from the casing to air and is also spread out in the printed circuit board where it's transferred to air. For PA-transistors heat is spread to the surrounded packaging and to a metal plate with cooling flanges. Air is forced through the flanges.

Ericsson deals with the entire chain, focusing on materials and construction techniques for packaging, optimal cooling flanges, and different types of heat-exchange mechanisms to remove the heat. The main problem today is the cooling of radio equipment, particularly base stations with power amplifiers, which can become extremely hot. Currently, about one-third of any base-station rack is occupied by the cooling unit in the form of fans, cooling ducts, et cetera.

"If we were to switch to fluid cooling, we could reduce the cooling component in the transmitter to one-seventh of its current dimensions, and the total radio base volume to one-third of its current size," says Björn Gudmundsson. "Moreover, we would obtain a more efficient cooling system, particularly



Electronics development and new construction methods are constantly increasing the available power per unit of volume. The above graph shows the development of AXE cabinets.

considering that water conducts heat about 3,000 times better than air."

The fluid cooling solution that Ericsson has investigated is based on a closed system of conduits in the metal plate, where the fluid is pumped around and cooled in a cooler or heat-exchanger. This of course demands that the system really is leakproof, since water and electronics are not a good combination and there has always been considerable skepticism in the telecom industry toward such solutions.

It may seem remarkable then that the company is also directing models involving fluid that evaporates in direct contact with the components. The fluid disappears as steam, is collected and circulated in a closed system. This is closer to the root of the problem, and it is effective.

Designing base stations in such a way that the transmitters are mounted closer to the antennas on the masts is also an interesting idea, since it saves energy. It also requires new cooling methods that reduce both volume and weight and are highly reliable.

"We are developing methods for this purpose," says Björn Gudmundsson.

There are many problems to tackle at the competence center. It is not merely a matter of finding the best cooling method: the method must also be economical. The cooling of a transmitter should not use more energy than the actual transmitter, for example. Air-cooled fans also generate high noise levels.

"We deal with simulations, calculations and measurements at all levels," says Mikael Arvidsson, "and we have both purchased and internally developed tools and laboratories with climate and test chambers."

LARS CEDERQUIST

lars.cederquist@lme.ericsson.se

## New test tool for WCDMA

Ericsson has just launched its first handheld test tool that allows operators to study how their WCDMA network functions during operation. With this tool, which is called TEMS Investigation WCDMA 1.0, operators can see in real time and from a user's perspective how WCDMA terminals behave in a live WCDMA network and locate areas with poor coverage. This can be used to resolve quality problems and optimize the network. The tool measures both application performance and the radio link, allowing problems to be solved at the application level.

TEMS Investigation is part of Ericsson's TEMS test portfolio, which also includes Cell Planner for network design and TEMS Automatic for continuous monitoring of networks under operation.

In November, a new version of TEMS Investigation GSM for optimization of GPRS will be launched.

www.ericsson.com

## "Ring signals are not enough"

In a lecture held at the beginning of October, Östen Mäkitalo of Telia Mobile Sweden, one of the founders of mobile telephony, gave some advice as to how the industry might stimulate 3G.

"It's not enough to entice technology buffs to adopt new services: the industry must bridge the gap to the mass market. Ring signals are not enough. We must offer services that give people some real advantage. You don't pay for a mobile service simply because it's mobile, but because it's better than other channels."



Östen Mäkitalo

Östen Mäkitalo drew a parallel with ISDN, which took off in Germany, but not in Sweden. The reason was that Sweden had AXE, which was already offering smart services. Same story with digital TV: It doesn't offer anything over and above analog TV, and is therefore struggling to succeed. The Internet, too, stood still until the World Wide Web entered the picture. Suddenly the doors were opened to a whole new world of knowledge. Once customers perceive value, they are quick to adopt something new. Östen Mäkitalo views GPRS as a port of entry to 3G.

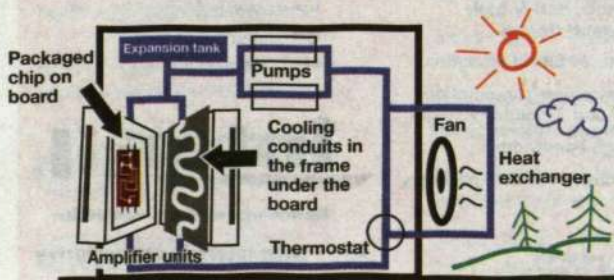
"There are already terminals, and a whole slew of GPRS services – voice, games, MMS, e-mail, positioning, video clips, et cetera – under way, with transmission speeds of about 80 kbps or more if EDGE is also in place. Why are we not using these services already? It must be due to inadequate marketing."

## Stamp your e-mail with a "Best Before" date

Old e-mail that is no longer current simply takes up space in your Inbox. So, why not stamp your outgoing e-mail with a Best Before date? Say if it's an invitation, or information that becomes irrelevant after a certain date. If the receiver reads the message before that Best Before date, and still retains it after that time, it will remain in the mailbox, crossed over and highlighted in gray. If, however, the receiver has not read the message by the final date, the message is automatically deleted.

Instructions: Open a New Message in Outlook. Before you send it, click Options. Under Delivery Options, check Expires after and enter the date and time. To indicate "Do not deliver before," proceed in the same way.

If you expect a response and want to set a last possible date and time for it, click the flag symbol before you send your message. You will be prompted to select a preset phrase, but you can also write one of your own. On the date indicated, a message will appear in the receiver's Outlook window with your phrase in it.



Fluid cooling in a closed system with conduits in the frame under the printed boards is considerably more efficient than conventional air cooling with flanges and fans.

ILLUSTRATION: KEROLD KLANG

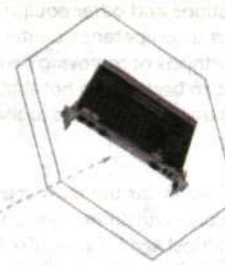
## Packing high performance and versatility on a 6U CompactPCI® single slot CPU board

Integrated low power GHz processor speed and dual Gigabit Ethernet Channels



### Optimize your CompactPCI system solution with a feature rich CT8.

A new addition to the Gigaboards™ series of CPU boards, the CT8 is an all-in-one 6U single board computer supporting full hot swap and is capable of being used in a system or non-system slot. The CT8 provides a unique feature set, including a low voltage Pentium®III Processor-512K, up to 2GB SDRAM (133MHZ, ECC), two Gigabit Ethernet channels with 64-bit/66MHz on-board PCI bus and two PMC interfaces. An optional integrated Redundant System Slot (RSS) controller allows two system CPU boards to backup each other. Adhering to the PICMG 2.16 specification, the CT8 is ideal for high availability systems requiring full hot swap capability. The CT8 is designed for use in a broad range of applications such as wireless, voice over packet, enterprises devices, edge devices, medical systems, and high-performance test & measurement systems.



### WE ARE EXHIBITING:

Electronica, Munich,  
12-15 November, Hall A3.620

SPS/IPC/DRIVES, Nuremberg,  
26-28 November, Hall 2-321

For more information, please visit  
[www.sbs.com](http://www.sbs.com)

Globally positioned to serve the commercial, communication and government markets with locations in 5 countries.

SBS Technologies GmbH & Co.KG  
Memminger Str. 14  
86159 Augsburg

Tel +49 821 5034 0  
Fax +49 821 5034 119  
sales@sbs-europe.com

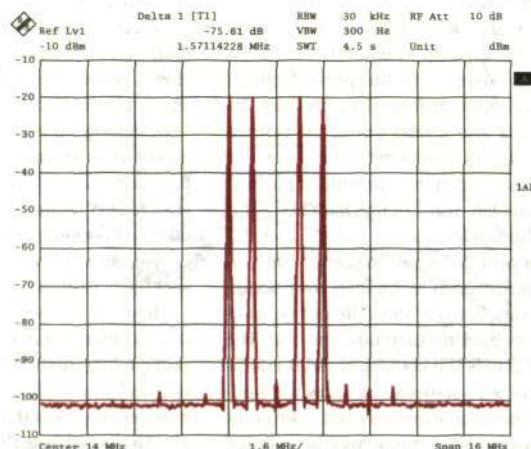


## Let Intersil evaluate your ADC/DAC!

- ▶ Log on to [www.intersil.com/testdrive](http://www.intersil.com/testdrive)
- ▶ Choose your ADC/DAC and specify your test
- ▶ We'll email personalized measurement results to you

Intersil's family of High-Speed DAC and ADCs are designed for a wide variety of communications systems, including: cellular basestation, broadband wireless access and other wireless communications applications.

### Data Converters



Title: ISLS961, Clock=80MSPS, Fout =14MHz  
Comment A: 6dB ext pad, 4CWs, 800k spacing  
Date: 23.AUG.2001 13:42:08

### Features:

- ▶ High sample rates, up to 210MSPS
- ▶ Superior SFDR performance
- ▶ Single, dual & triple channel devices
- ▶ 6 to 24 Bits of resolutions
- ▶ Low power consumption, 5V and 3V supply voltages
- ▶ High bandwidth
- ▶ Industry standard packages

### Applications:

- ▶ Communications
- ▶ Medical
- ▶ Storage
- ▶ Video
- ▶ Wireless
- ▶ Test Equipment
- ▶ Sensors



130, 210 MHz Dual DAC  
8-, 10-, 12- and 14-bit versions



130, 210 MHz DAC  
10-, 12- and 14-bit versions

# Ericsson Santa's little helper

Operators are asking Santa to make MMS phones the Christmas gift of the year, and Ericsson is happy to help stuff the stockings.



Together with application developer Zellsoft, Ericsson's Mobility World has just finished wrapping an MMS Christmas package. It contains a total of 75 animations and 10 ring signals, and works on all MMS phones. Discussions are ongoing with about 30 interested operators around the world and one important UK operator has already signed on.

"The quality of the content is especially important since this will be many end-users' first meeting with MMS," says Jens Friberg, sales manager for the package at Ericsson.

"If the encounter is colorful, the consumer will want to have that same experience again. We kept that in mind when we chose our partner, Zellsoft."

Unlike other Christmas gifts, the MMS packages will continue to come even after the Christmas lights have dimmed.

Jens Friberg imagines anything from St Patrick's Day to Mother's Day. So if you hear a polyphonic version of Jingle Bells on the bus this winter, or suddenly find leprechauns jumping out of your mobile, you'll know where it's coming from.

ELIN AHLDÉN

elin.ahlden@lme.ericsson.se

© csna.ericsson.se/Ins\_PUIAP/Pa\_3pp/xmas.asp

## from the archives



Thalia and Filmia may have been the stars, but the Ericophone did well as supporting actor in Bollywood already in 1958. The name of the movie remains unknown.

## hello there

Murielle Friedman, who recently moved to Kinshasa, Congo, with her family to work as marketing and sales manager.



### Why the Democratic Republic of Congo?

"I was raised here, and my parents, who are missionaries, still live here. When I first read about the Congo office in *Contact* a few years back, I immediately started thinking about how I could get a job here."

### What do you do at Ericsson?

"I work with marketing and sales, trying to develop the business here. We cover not only Congo-Kinshasa, which is huge, but also Congo-Brazzaville, Angola, and Central Africa. We are working hard to establish backbone networks in these areas, and people are very open to it. There is a great need for infrastructure."

### Things have been turbulent in Congo. How does that affect your work?

"We don't see much of the war in the East, but we have to adapt to peoples' mindsets. After decades of dictatorship and volatility, added to the fact that most people still don't receive regular salaries, they are not used to thinking about the future and planning for more than a year or so ahead."

### So how does it feel to be back, 20 years later?

"From the second I arrived, it felt like home. This is my country and my city, and I'm very happy to be back. During all my years at Ericsson, I always dreamed of taking part in developing Africa, and now I am."

## new assignments

**Hans Karlsson** has been appointed country manager for the Philippines. He is currently head of Customer Solution and Services for Market Unit Middle East and country manager for Oman.

**Håkan Österberg** is the new president of Ericsson Power Modules AB. He was previously vice president and senior investment manager at Ericsson Business Innovation AB.

**Paolo Colella** is the new vice president of Services in Market Unit Italy. He was previously director of Systems Integration.

## appointments

**Kenneth Svensson** has been named expert within Multifunctional Sensor Systems.

# contact

CORPORATE EDITOR, PUBLISHER

Lars-Göran Hedén, +46 8-719 98 68, lars-goran.heden@lme.ericsson.se

### ASSISTANT EDITOR

Ingrid Bävsjö, +46 8-719 08 95  
ingrid.bavsjo@lme.ericsson.se

### NEWS EDITOR

Henrik Nygård, +46 8-719 18 01  
henrik.nygard@lme.ericsson.se

### PRODUCTION MANAGER 5MINUTES

Ulrika Nybäck, +46 8-719 34 91  
ulrika.nyback@lme.ericsson.se

### EDITOR, TECHNOLOGY

Lars Cederquist, +46 8-719 32 05  
lars.cederquist@lme.ericsson.se

### EDITOR, WORLD WATCH

Sara Morge, +46 8-719 23 57  
sara.morge@lme.ericsson.se

### EDITORIAL STAFF

Dodi Axelson, +46 8-719 24 18  
dodi.axelson@lme.ericsson.se

Lars-Magnus Kihlström, +46 8-719 41 09  
lars-magnus.kihlstrom@lme.ericsson.se

Tonya Lilburn, +46 8-719 32 02  
tonya.lilburn@lme.ericsson.se

Jesper Mott, +46 8-719 70 32  
jesper.mott@lme.ericsson.se

Jenz Nilsson, +46 8-719 00 36  
jenz.nilsson@lme.ericsson.se

Gunilla Tamm, +46 8-757 20 38  
gunilla.tamm@lme.ericsson.se

### EDITOR, AROUND ERICSSON

Elin Ahldén, +46 8-719 69 43  
elin.ahlden@lme.ericsson.se

### LAYOUT AND WEB DESIGN

Paues Media, +46 8-665 73 80

### EXTERNAL ADVERTISING

Display AB, +46 90-71 15 00

### DISTRIBUTION

PressData  
Box 3263  
SE-103 65 Stockholm  
phone: +46 8-799 63 28  
fax: +46 8-28 59 74  
contact@pressdata.se

### PRINTED AT:

Nerikes Allehanda Tryck Örebro, 2002

### ADDRESS

Telefonaktiebolaget LM Ericsson,  
HF/LME/DI  
SE-126 25 Stockholm  
fax +46 8-681 27 10  
kontakten@lme.ericsson.se

### CONTACT ON THE WEB

http://www.ericsson.se/  
SE/kon\_con/contact





Former CEO of Telia Jan-Åke Kark and King Carl Gustaf examining the P800 during their visit to Ericsson in Karlskrona. Positioning, payment for mobile services and MMS were demonstrated.

PHOTO: GIV AKT/TELECOM CITY

# Cool services get royal nod

King Carl XVI Gustaf may be in little danger of developing "SMS thumb," but he is keenly interested in the latest mobile technology just the same. Accompanied by the Royal Academy of Engineering Sciences (IVA), the King visited the Telecom City project and Ericsson in Karlskrona, Sweden.

Normally, IVA holds its special visits – referred to as "Royal Technology Missions" – abroad. But this year, it was decided to remain in Sweden. The object was to examine the development-stimulating effect that Telecom City has had on the province of Blekinge, through its entrepreneurship, expertise provision and proximity to universities.

The Karlskrona-based Telecom City is a successful collaboration involving the Blekinge Institute of Technology, Karlskrona Municipality and the local business community. Ericsson was already involved when the project was in its infancy headed by Jan-Åke Kark, then president of Ericsson Software Technology AB. This time, he led the IVA group.

"They had highly specific requirements. They were mainly interested in how the Telecom City collaboration is progressing, and how it benefits us. And they weren't just content to listen; they wanted to try out the solutions as well," says Anna Claesson, communications manager at Ericsson AB, Southern Region.

An Ericsson employee was sent out onto the E22 highway outside Karlskrona to give the visitors an

opportunity to determine his position. The delegates were then invited to see for themselves how payment for mobile services works, by purchasing a movie theater ticket and debiting a prepaid account. The payment took place in real time – that is, the ticket was not delivered until it was confirmed that there were sufficient funds in the account.

"Technology was on our side and everything went smoothly," says Anna Claesson.

Of course a royal academy of engineering sciences would be aware of the technology behind positioning and MMS. On the other hand, there were some facts it was not aware of – for example, that Ericsson's charging and positioning technology is developed in Karlskrona, and that Ericsson has supplied 42 percent of the world's commercial positioning systems.

The delegation was very pleased with the visit. Reports claim that King Carl Gustaf was very interested in the P800.

ELIN AHLDÉN

elin.ahlden@ime.ericsson.se



LARS-GÖRAN HEDÍN  
corporate editor

## A spider spirit's ponderings

**It's the press conference** at Ericsson headquarters in Stockholm. The cafeteria is jam-packed with journalists, TV teams, photographers and a large number of internal Ericssonites – mostly communicators and other kinfolk. On the podium, Kurt Hellström presents the quarterly report and answers questions.

On the floor – an uninvited guest. The only one who on this Friday morning can compete with Kurt Hellström for this captive audience is a big (four to five centimeters), black, hairy spider. Slowly and seemingly unmoved by all the fuss around her, it strolls through the cafeteria. If you can say that a spider strolls.

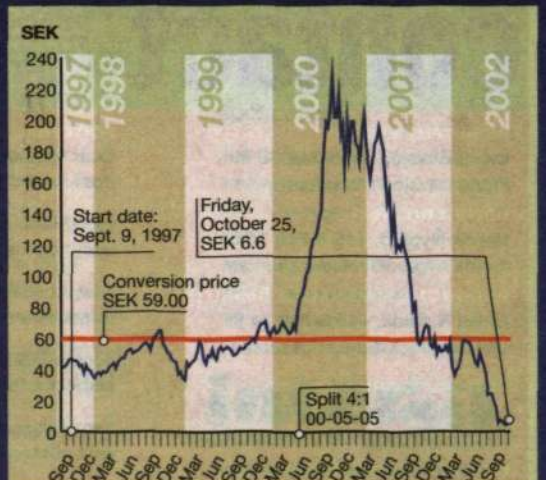
**My children used to listen to** the fascinating story of Spider Woman, one of the spirits in North American Indian legends. A wise and considerate spirit, mother of all life on earth and the source of all good thoughts. I couldn't help but think about her when I stood there listening to the press conference.

Because despite the fact that Kurt presented gloomy numbers and said the outlook was unsure, the mood in the auditorium was not hopeless. In the questions that were posed, you could almost hear that the journalists and analysts were searching for a positive sign to add to the ones that our brothers in Finland presented the day before. The relatively good mood and absence of confrontational questions could not – as I see it – just be explained by the fact that Ericsson's relationship with the press is undeniably getting better. It had to be something more.

**So it might be surprising** to hear that superstition got a hold of me that Friday afternoon and that I therefore am now sending thanks to Spider Woman. Because just by being there, she demonstrated that the famous light in the tunnel is still there, even if there are a few curves on the way that prevent the light from blinding anyone. And I am naturally also thankful that the prominent guest managed to make it across all twenty meters or so across the room without anyone stepping on her.

Because we all know what happens when we step on a spider!

### the ericsson b share



For additional information, access the website:  
<http://inside.ericsson.se/convertibles>