# contact

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# TEMS best at tests

14–15

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Rapid shift to GSM in Canada 10–11

Antennas for Japanese 3G network 13

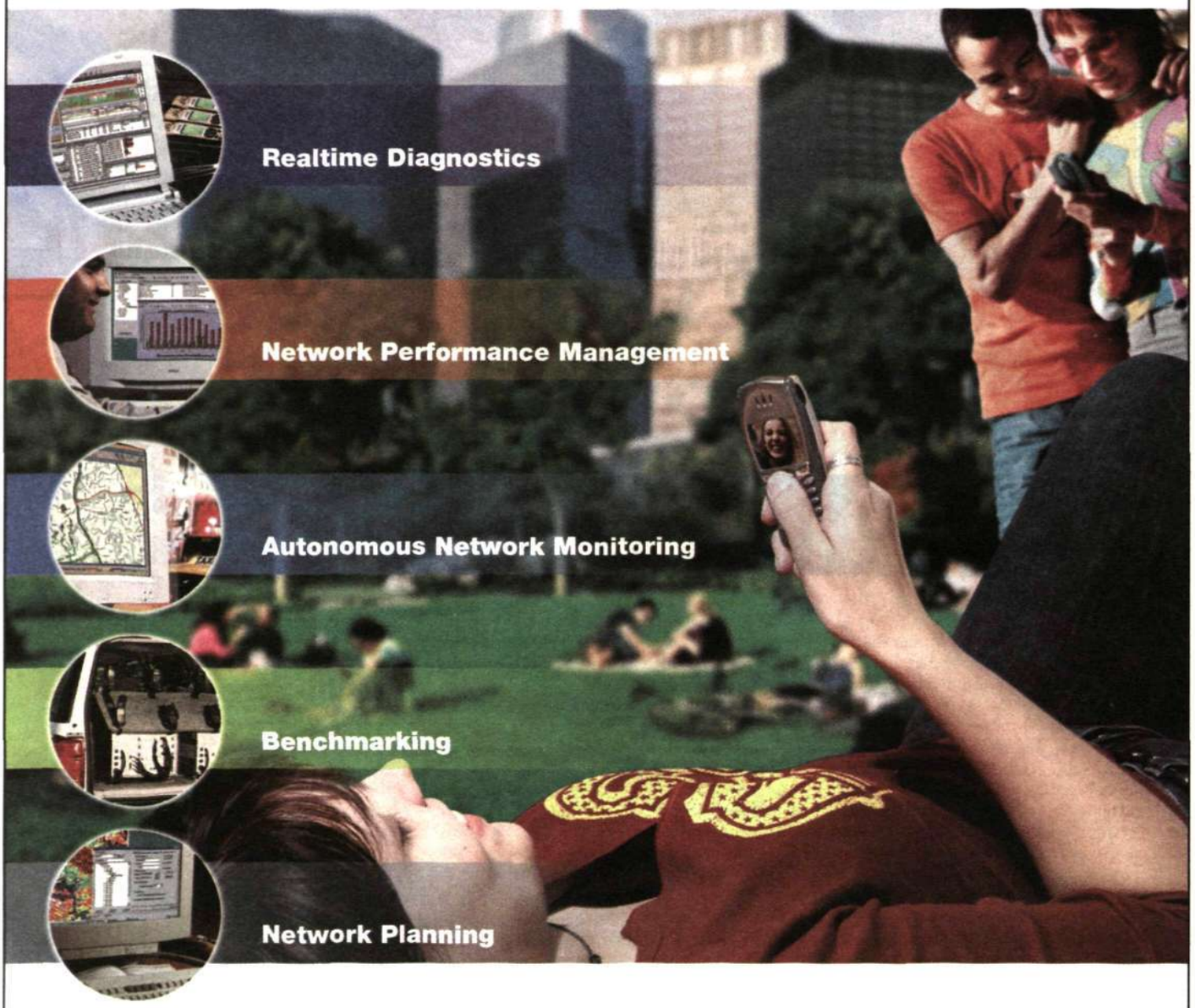
no. 3
February 21, 2002



THE PUBLICATION FOR ERICSSON EMPLOYEES ALL OVER THE WORLD

ERICSSON

# TEMS™ – Making Wireless Better

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The opening ceremony of the Olympic Games in Salt Lake City, in the US.

PHOTO: HENRIK MONTGOMERY/ PRESSENS BILD

# Ericsson present in Salt Lake City

**The Olympic Torch has arrived in Salt Lake City, Utah, for the 2002 Olympc Winter Games. Ericsson has delivered a crucial part of the overall telecommunications and data communications network that Qwest Wireless has built to support the Olympics.**

The Salt Lake City system is a multi-vendor system with Ericsson's radio network, consisting of multiple BSCs and hundreds of BTSs. The multimedia capabilities of Qwest's network enable every voice, every word and every picture to be transmitted to followers of the Olympic Games worldwide. The Swedish Olympic Team has also been equipped with T-68:s from Sony Ericsson. Richard Pratt, Ericsson's key account manager for Qwest Wireless, says:

"It's been a great cooperative environment with our customer. We have moved hand-in-hand building the right team and the right plans to ensure a smooth operation and a great network. Qwest is very pleased with our people and our technology."

Several teams including the North American Key Account Management (KAM) team, Global Services in North America and Mobile Systems CDMA have contributed to the success of the project and have worked long hours to finalize the network and to put all of the business continuity and recovery mechanisms into place. Ericsson's on-site team of 33 people will help support operations in ten competitive venues, as well as four non-competitive ones. The network supports all major sporting, cultural, and business events during the 17-day spectacular.

As Qwest Wireless stated in a press release they are "...proud and ready to showcase our network capabilities to the world and making the seemingly impossible possible for the 2002 Olympic Winter Games." Without the Ericsson team partnering with Qwest to carry the technology torch behind the scenes, the games would remain silent.

The Olympic Torch, a celebration of unity and competition, was lit November 19, 2001 in Olympia, Greece, and has made its way across the United States through 250 cities in 46 states. Many hundred millions of sports fans all over the world follow the thrilling events on news channels which all depend on efficient and reliable telecommunications.

HOLLY GAGE, MARKUS FISCHER
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# Ericsson supports streaming media solution

**Apple, Ericsson and Sun Microsystems have announced a relationship that will enable network operators to deliver standardized multimedia content to a variety of wireless devices, including mobile phones and PDAs.**

"The Content Delivery Solution will open up new revenue streams for operators by providing users with high quality multimedia services, such as movie clips and instant news on demand," says Torbjörn Nilsson, senior vice president, Ericsson Marketing and Strategic Business Development.

The carrier-grade, MPEG-4 based content delivery solution will expand the market for streaming media, opening new distribution channels for content providers. This standards-based solution is an end-to-end platform that includes: Apple's QuickTime for content creation and encoding, Sun's reliable and scalable software and systems to enable content distribution, and Ericsson's ability to provide mobile operators with a full infrastructure and services solution.

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## R&D in Norway is consolidated

**As a result of Ericsson's** efforts to consolidate its research and development operations, the number of employees involved in development work in Norway will be reduced. Ericsson intends to organize its operations in larger research and development centers, thereby increasing cost efficiency. A total of between 250 and 300 employees will be effected in the Norwegian towns of Asker and Grimstad.

A similar reorganization in the area of research and development has already been implemented in the US, Denmark and the UK, among other countries.

## New i-Mode phone launched

**NTT DoCoMo,** Japan's largest mobile phone operator – has announced a new i-Mode phone by Sony Ericsson. NTT DoCoMo launched the MOVA SO211i throughout the Tokyo metropolitan area on February 6. The MOVA SO211i is stylish, compact and weighs only 99 g.

Having more than 4,000 colours, its 1.74-inch LCD screen shows JPEG images with clarity. Appealing to the user's need to use e-mail services over the phone, the MOVA SO211i lists the 20 most frequently used addresses. Likewise, an animated character named 'Sarugecyu' appears in the screen saver and functions as an agent when the user sends or receives e-mail.

## Multi-Service Networks forecasts strong future

**At business unit Multi-Service Networks'** annual summit on February 14, Johan Bergendahl, head of the business unit, gave a promise to the employees:

"I will keep your business secure and lead you to a profitable 2003–2004," he promised.

Johan Bergendahl

Among the most important announcements was the breakthrough objective (BTO) for 2002: for the unit to become the preferred solutions provider for five of the largest operators in the world by 2005. Other key focus areas for Multi-Service Networks are profitability, and customer and employee satisfaction.

Also on hand was Per-Arne Sandström, chief operating officer for Ericsson, who said that the business unit had taken the lead within Ericsson in becoming a solutions provider.

networknews.ericsson.se

## Proactive approach for WCDMA and GSM

**Einar Lindquist,** head of business unit Mobile Systems WCDMA and GSM, and the management team said at their summit on February 13 that teamwork and leadership were key to the business unit's strategies to turn the company around and beat the competition.

A proactive approach instead of defensively responding to the market is the focus for 2002. The business unit's goals concern operating margin, cash flow, 3G on time, and 2G on cost.

"Understanding the goals and how each person contributes to them is vital," says Jan Ögren, head of Business Control.

bmob.ericsson.se

# Sharing services

If everyone did what they do best, it would save both time and money. Furthermore, it would reduce the risk of serious mistakes. This is the concept behind Ericsson Shared Services, which aims to assemble all administrative expertise in one place.

**FACTS** ERICSSON SHARED SERVICES

- Operations were launched in August 1999
- Employs 650 people
- Office is located in Stockholm
- The first Shared Service company in the Nordic region to receive both environmental and quality ISO certification
- Handles one million supplier invoices annually
- Oversees USD 1.8 billion in purchasing

Ericsson Shared Services has assembled a broad range of expertise within the areas of finance, purchasing and travel. Its goal is to become the best provider of administrative services to Ericsson companies located in Sweden.

"Ericsson's business units are able to concentrate on their core business, and we are concentrating on ours. That way, everyone is performing the job that they do best, resulting in greater efficiencies, and we can afford to invest in better systems and make use of best practice," says Gösta Burlin, head of Ericsson Shared Services.

By implementing shared systems and best practice – i.e. ensuring that tasks are always performed in the most efficient manner – Ericsson Shared Services envisions cost savings of between 30 and 40 percent. Renegotiations of existing contracts have already resulted in major price reductions. Staffing company expenses have, for example, been reduced by 20 to 25 percent.

Cellular Phone Registration, CPR, is a web-based routine for registering information about mobile phone subscriptions. The system saves money by reducing fixed subscription costs and lower interest on overdue payments. Currently, the system handles 17,000 subscriptions.

Since ETX affiliated itself with Ericsson Shared Services and started using CPR, 32 percent of all mobile phone subscriptions have been cleared out, either by cancelling or shifting them to other companies. It has also been possible to lower the volume of overdue accounts receivable by 75 percent.

"I am very optimistic about the changes that have resulted from engaging Ericsson Shared Services – administration has noticeably improved. The demands of my job have become more defined and it is easier to figure out who is responsible for what," says Johan Uhlander, company controller for ERA and ETX.

Ericsson Shared Services currently serves approximately half of the Ericsson companies in Sweden. Soon, however, that workload will increase significantly. The new Swedish company, Ericsson AB, will be a formidable challenge to handle, according to Gösta Burlin:

"We're going to play a very important role there since we will be the ones to oversee all of the administration. Initially, it will be difficult to bring together all the various parts of the company and prepare a consolidated financial statement."

For the European Ericsson companies outside Sweden, a similar service known as Business Support Center is available.

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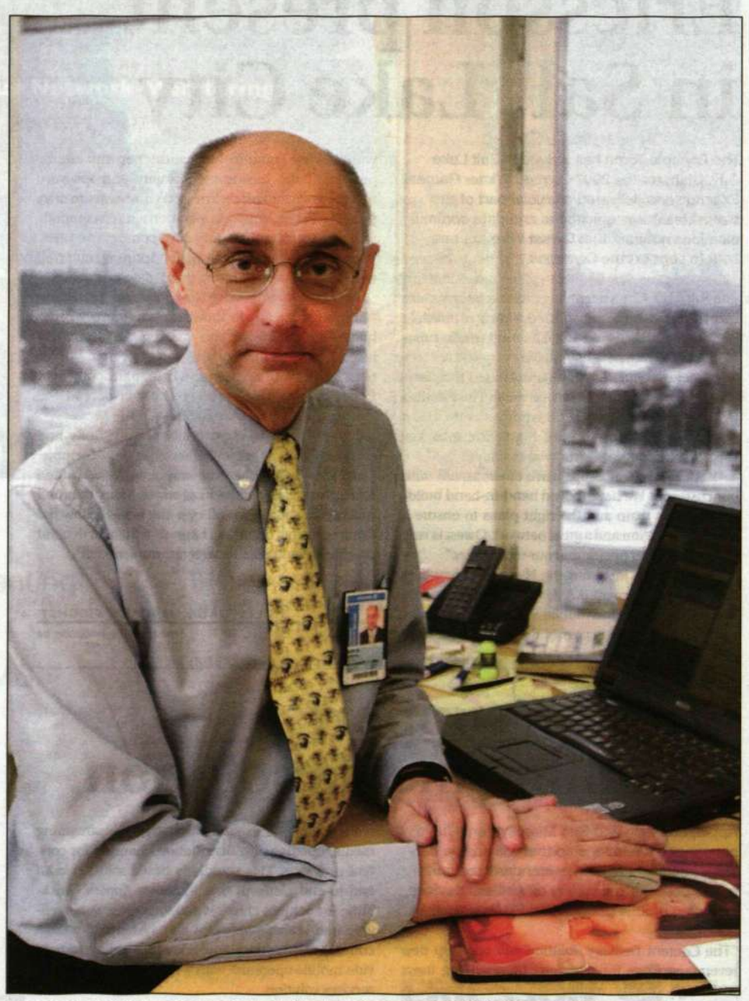


Ericsson Shared Services has assembled a broad range of expertise within the areas of finance, purchasing and travel, with the goal of becoming the best provider of administrative services for Ericsson companies in Sweden. "We can achieve considerable savings, enabling us to invest in better systems," says Gösta Burlin, head of operations.

PHOTO: ECKE KÜLLER



# is better

## Careful planning improves earnings

**The differences between** a poorly implemented purchase from a supplier and one that is well executed can be dizzying. If all purchases throughout the company were always conducted in the best possible manner, the result would be enormous savings for the company and a clear effect on annual net income.

"I would like everyone within the company to understand that purchasing is an area where everyone can be involved and contribute to helping the company save money," says Catrin Sundgren, buyer at Ericsson Shared Services.

Catrin Sundgren recounts a project where Ericsson, thanks to pressure applied to a supplier, was able to lower the total price by 30 percent.

"The supplier had run with all of its usual terms, without anyone questioning the high prices and, from an Ericsson perspective, poor contract terms. Only after the buyer accepted bids from other suppliers did the original supplier radically lower their prices," explains Catrin Sundgren.

It would have been even better if Ericsson had avoided paying the high prices from the beginning. In an ideal situation, there would already have been an experienced buyer involved from the outset. That way, even more money could have been saved.

This applies not only to large supplier contracts. Simply ensuring that a purchase order is correct, regardless of whether it involves office suppliers or large items, can save both time and money. Half of all supplier invoices received by Ericsson Shared Services lack a purchase order number, resulting in irregular and more expensive handling costs for Ericsson.

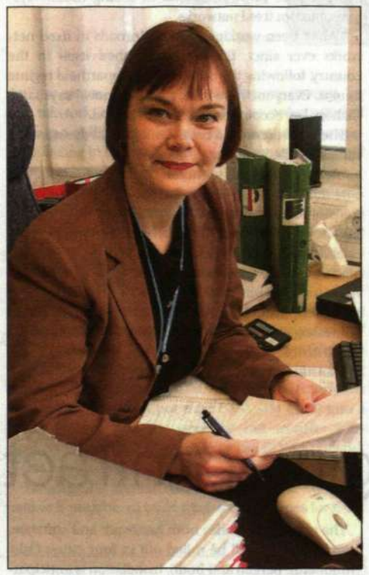
Another important factor when it comes to purchasing something for one's department, is to make a point of relying primarily on suppliers with whom Ericsson already has agreements.

"Sometimes it might seem strange that one should purchase a cable from a particular supplier when the same cable might be cheaper at the store just around the corner. But you have to look at the big picture. We receive a better price in the end if we purchase larger volumes from selected suppliers, but of course it is important to question the price."

Catrin Sundgren believes that being particular about purchases can save considerable sums of money.

"Thinking twice before placing an order can involve substantial savings for the company, resulting in a noticeable impact on the company's annual earnings."

SARA MORGE



Catrin Sundgren, buyer at Ericsson Shared Services, believes that a properly placed order can save large sums of money for the company.

PHOTO: ECKE KÜLLER

**FACTS** THINGS TO CONSIDER WHEN PURCHASING

- All purchases should have purchase order numbers
- Make click-to-buy or e-commerce systems your first choice
- Use preferred suppliers
- It is always better to use Ericsson contracts than to simply sign a supplier's contract proposal
- Contact Ericsson Shared Services/Sourcing in plenty of time for bid proposals, contract management, et cetera.

hello there...

PHOTO: KURT JOHANSSON

**Per Zetterquist,** Ericsson's new head of internal communications since February 1.

***What did you do previously in your career?***
"Most recently, I was president of a small consulting firm that focused on external and internal communications. Prior to that, I actually worked as an information director at several places within Ericsson over a four-year period of time. I also served as press secretary for Carl Bildt from 1992-1994, during his years as Sweden's Prime Minister."

***Why are you returning to Ericsson after having previously left the company?'***
"Because I think this is a fantastic company with a huge number of talented people. To be honest, in my heart I never really left Ericsson. Moreover, I have now been offered an exciting job in a key area."

***What previous work experience will you be able to draw on in your new job as head of internal communications?***
"I've learned what conducting enterprise, in all its various dimensions, is all about. I believe that experience will be invaluable in a staff job, which this actually is."

***What sort of ambitions do you have for your new job?***
"One important task will be to make the company's goals and strategies known within the organization. I would also like to provide Ericsson with a leadership style that is even more forthcoming and visible to employees. And to contribute to an increased awareness among the company's managers about how important it is to lead by providing a good example. We must fulfill our strategies and goals to a greater extent than we are, rather than simply displaying them in a PowerPoint presentation."

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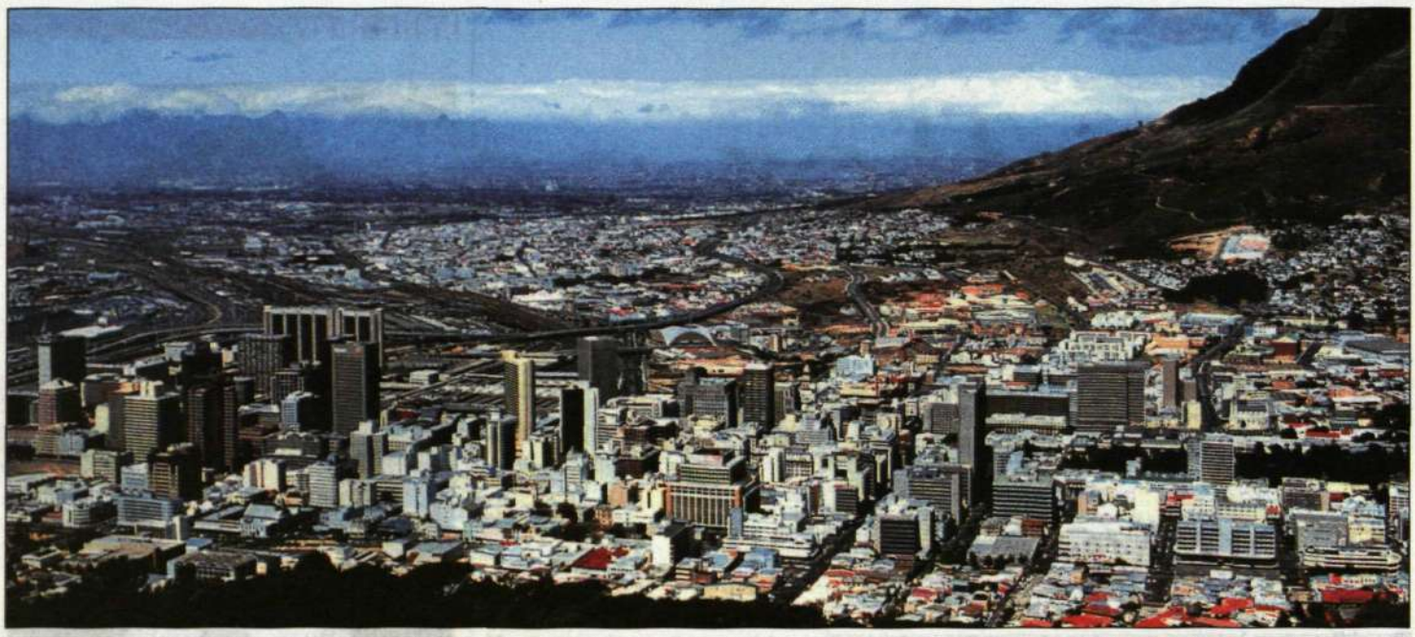

Cape Town is one of the South African cities where Ericsson's Engine network will be rolled out in the near future. Ericsson's contract with Transtel is the first of its kind for a fixed network in that country. It came to fruition through close collaboration between Ericsson's units in Sweden and South Africa.

PHOTO: CLAES LÖFGREN/PRESSENS BILD

# Breakthrough in South Africa

**South Africa's Transtel recently signed a contract for Engine, making theirs the first multi-service network in the country. The transaction is the first for Multi-Service Networks in South Africa and could lead to others in the developing region.**

South Africa has opened up to yet another fixed-network operator, giving Ericsson the opportunity to enter the market. Transtel, the privately owned network operator that recently purchased Engine, is one of the stakeholders in the new nationwide network. The initial contract includes telephony servers and media gateways – the intelligent components within the network – as well as half of the access network. Transtel had previously chosen Ericsson to be its technical partner for consulting services, design, implementation and more.

"We wanted to have a future-proof system. We compared systems from all of the major suppliers and selected Engine. Engine's ATM-based solution provided the quality we required and had the clearest transition path to multimedia and IP," says Angus Hay, chief technology officer for Transtel.

For Ericsson, the contract marks a breakthrough into the fixed-network segment in South Africa. To date, Ericsson had been successful in selling mobile systems, but not fixed networks.

"We've been working to make inroads in fixed networks ever since Ericsson established itself in the country, following the collapse of the apartheid regime in 1994. Everyone here is very pleased now," says Jarek Cichon, key account manager for Transtel.

The deal is seen as a breakthrough and the start of a valuable collaboration.

"Being entrusted to build the core network is very important for a customer relationship and could lead to much more. It involves establishing a new operator in the market with all the necessary services, training, business and operational support," says Anna-Karin Klinteskog, business manager for South Africa.

Anna-Karin Klinteskog

Transtel will start up its network sometime in mid-year and will initially focus on attracting business customers. With the Engine solution, it will be able to offer a combination of services that include voice, data, Internet and video over the telephone network. In the long term, the operator would like to achieve as broad a customer base as possible.

"South Africa is a growth market with great potential. While there is a population of 46 million people, market penetration is low. Nevertheless, its largest cities are every bit as modern as cities in the US or Southeast Asia," says Anna-Karin Klinteskog.

Unlike many other regions in the world, telecom investments increased in Africa last year. This makes the Transtel contract especially important since operators in other parts of the continent frequently use South Africa as a model.

"Especially interesting are developments in northern Africa. Egypt has already acquired Engine and we have several more deals in the works. Africa has the potential, the money is there and so are we," says Mikael Nyström, head of the customer group for Direct Markets in Africa, the Middle East and Eastern Europe.

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# Important Engine contract in Norway

**Tele2 has signed a contract** for Engine that will modernize and increase the efficiency of its network in Norway. The company currently has operations in 21 countries so the transaction is considered to be strategically important.

"The reason why Tele2 is upgrading its network is to save money. Using our telephony servers and media gateways, it's possible to take advantage of local switching. This will allow Tele2 to avoid leasing so many costly transmissions," explains Anders Rian, sales representative for Tele2 at Ericsson in Norway.

In the future, Tele2 will also be able to add data, multimedia and IP services.

The contract includes both hardware and software. Initially, Engine will be rolled out in four cities: Oslo, Trondheim, Bergen and Bodö. Installation is anticipated to be completed by mid-year.

While Tele2 in Norway previously used AXE in its network, this does not mean that landing the current deal was a walk in the park.

"It was a difficult campaign lasting 18 months. Cisco was a major competitor, but the customer still chose us.

Anders Rian

"Our solution is more stable and our migration path to IP is more reliable," says Anders Rian.

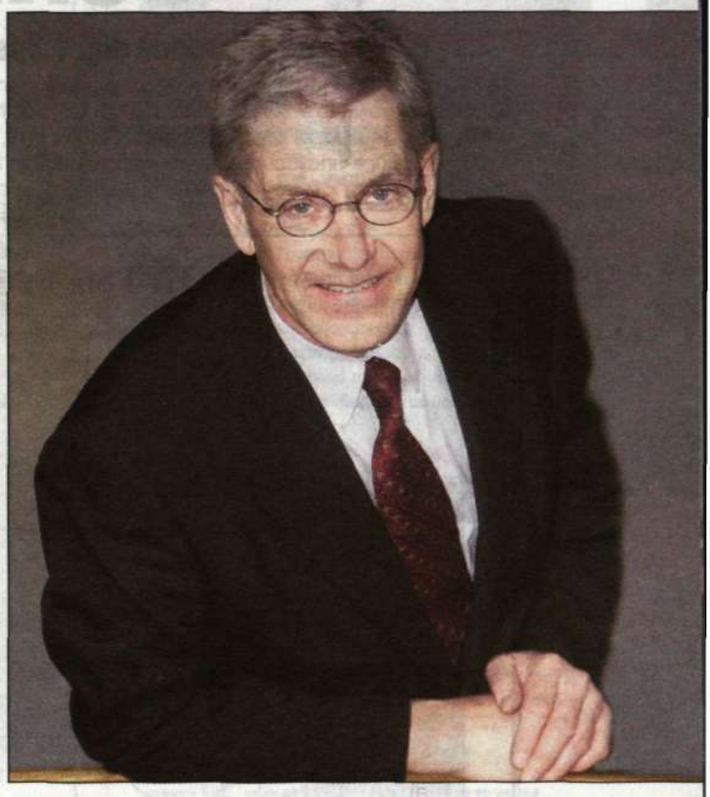
Tele2 has 13 million subscribers and operates in 21 countries including all of Western Europe and Russia. The current contract is Tele2's first for Engine, and therefore strategically important for Ericsson.

"Tele2 will be monitoring this project closely. Our goal is for this deal in Norway to be a success. If it is, Tele2 will see that the concept is sound and hopefully purchase our solution for its companies in other countries," says Anders Rian.

LARS-MAGNUS KIHLSTRÖM

# CDMA a key feature in Ericsson's offering

"It is extremely gratifying that the largest CDMA operator in the US has opted for our technology," says Åke Persson, head of Ericsson's CDMA business unit, referring to Verizon Wireless' purchase of AAA servers from Ericsson for its new CDMA2000 1X network.



**"We are the only supplier in the market that has a real 3G product, the others are upgrading their cdmaOne platforms. Our technical solution is therefore future-proof and we have gained a large amount of respect in the market," says Åke Persson, head of Ericsson's CDMA business unit.**

PHOTO: ECKE KÜLLER

**At the end of January,** it was announced that Verizon Wireless was to purchase key components of its CDMA core network from Ericsson. The order pertains to only one node in the core network, but it is nevertheless of major strategic importance for Ericsson. CDMA has its roots in America and is a leading standard in the US, with approximately 47 million subscribers, corresponding to one third of the total number of users. The forecasts indicate that this will increase to 43 percent in 2006.

"If we are serious about our investment in the US, we must be able to offer the market CDMA products – both infrastructure and terminals," says Åke Persson. "This is one of the reasons why Ericsson joined the CDMA train in 1999 and acquired the infrastructure division of the leading CDMA developer and previous competitor, Qualcomm, and then established its head office in San Diego.

CDMA standards currently account for approximately 20 percent of the total mobile market, primarily in North and South America and Asia. In Latin America, 23 percent of all subscribers have CDMA, a proportion that is expected to rise in the next few years. Asia and Latin America are markets with a low level of mobile density, which is why it is foreseen that CDMA has major potential to expand rapidly.

Ericsson's share of the CDMA market is currently about 5 percent, but the target is to attain 15–20 percent within three to four years.

## Major transaction in China

Previously, Ericsson's largest CDMA transaction was the contract with the Chinese mobile operator China Unicom, whose network was placed in commercial operation on January 8, 2002.

"I don't know of any network of this size that has been installed so quickly," says Åke Persson, commenting on the nationwide Chinese network.

Asia, and China in particular, is where most activity is under way in today's cautious telecom market, and Asia is also the fastest growing market for CDMA, which is now migrating to 3G services.

In only six months China Unicom installed a nationwide CDMA network that will serve approximately 16 million users. Ericsson supplied the equipment for the network in seven provinces at an order value of USD 200 million. In addition, an expansion order corresponding to approximately 25 percent of the original order has already been signed.

"China Unicom has now entered a new phase of procurement aimed at completing a network for a total of 40 million subscribers by the end of the year, a large portion of which will be CDMA2000 1X," says Åke Persson. "At the end of 2003, the network will have a capacity of more than 50 million subscribers."

The network being built in China is a mix of the second-generation cdmaOne and the first version of the 3G system, CDMA2000 1X. Since China Unicom also has a GSM network, SIM card roaming is being used between GSM and CDMA. In practical terms, this means that users can put their GSM SIM cards into a CDMA phone and the operator can transfer subscribers from the GSM network to the CDMA network if this is required.

"During the second half of the year, the chip that makes it possible to build dual-mode phones for GSM and CDMA2000 1X will be available. It is anticipated that these phones will be on the market at the beginning of 2003," says Åke Persson.

"CDMA subscribers will then be able to use GSM networks throughout the world and vice versa."

Developments in China mean a great deal for CDMA throughout Asia. More countries – Japan, Taiwan, Thailand, Indonesia and Korea – are moving ahead, and there are already several CDMA networks for 3G in Korea, with five million subscribers.

## Future-proof solution

Ericsson's 3G solution for CDMA builds on the same platform as WCDMA. This is called CPP (Cello) and is the foundation of the new radio base stations, in Radio Network Controller (RNC), Media Gateways and the new real-time routers for the IP network.

"We are the only supplier in the market that has a real 3G product, the others are upgrading their cdmaOne platforms. Our technical solution is therefore future-proof and we have gained a large amount of respect in the market."

Åke Persson also explains that Ericsson built its first cdmaOne network in only 18 months by using existing products.

"General global platforms are Ericsson's strength and they are what makes it possible to offer China Unicom a common service platform for GSM and CDMA for such areas as Mobile Internet services and billing. This also provides Ericsson unique economies of scale."

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### FACTS CDMA

CDMA (Code Division Multiple Access) is a radio access technology that is based on all calls being mixed over a broad frequency channel and being kept separate by each being allotted a code. This compares to TDMA, the technology for GSM, in which each call is allocated a recurring time slot. The CDMA systems are narrow-band, with a 1.25 MHz channel, while Wideband CDMA (WCDMA) uses 5 MHz as its carrier wave.

An advantage of CDMA is that it is easy to move from 2G (cdmaOne) to 3G (CDMA2000), since the system is based on the same radio channel and network solution.

CdmaOne provides voice and packet data at 64 kbps, while CDMA2000 1X, the first 3G version that has now been launched, provides 144 kbps and the future 1XEV will offer 2 Mbps.

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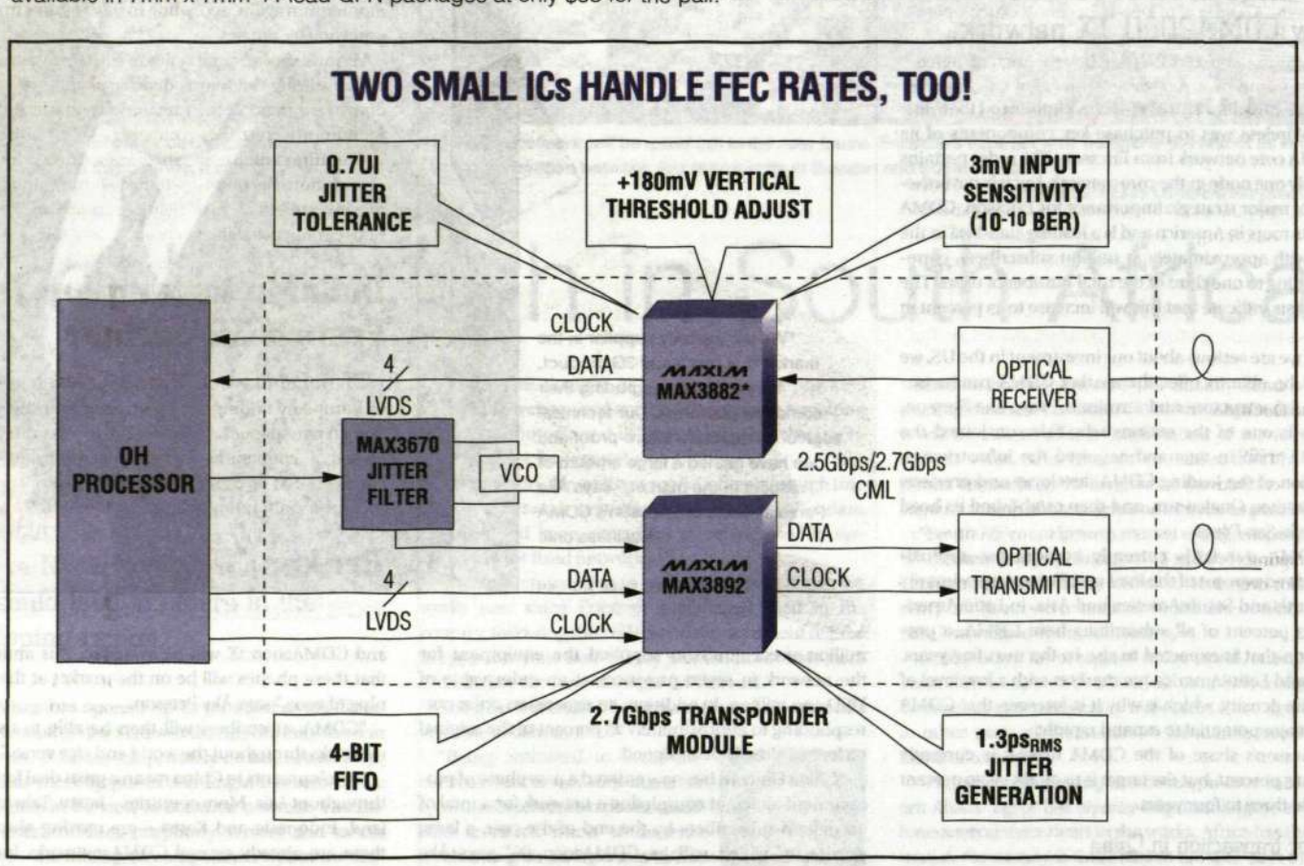


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# European i-Mode – no revolution

**NTT DoCoMo wants to conquer the world. Listing of the company is pending on both the London and New York stock exchanges, and, during the spring, i-Mode will be introduced in the Netherlands and Belgium. Does this mean good times are ahead for those who develop Mobile Internet services? Perhaps not, according to a new report.**

There has long been talk of a European version of i-Mode. At the end of December 2001, Dutch operator KPN Mobile finally began testing the successful Japanese service. KPN has already signed agreements with over 100 service providers and expects approximately 60 certified i-Mode sites in the Netherlands prior to the launch, which is planned for March this year.

While interest from service developers has been great, they are probably wise to lower their expectations, according to Bengt Nordström, president of Northstream, a consulting firm that has thoroughly analyzed i-Mode.

"There is a perception that i-Mode content providers are profitable. The truth is that half of those who sell content earn less than USD 40,000 per month, and that 87 percent of the total revenues go to DoCoMo."

### No charge

Another discovery is that a majority of the 900 companies that deliver content to i-Mode do not charge for services. They view it as one of many avenues for marketing. In other words, a lot like the Internet.

"Not even in the world's most successful market for mobile data can you live off of the revenues. This is an important lesson for content providers around the world. You have to adapt to what people are actually prepared to pay, and for that you need volume," says Bengt Nordström.

With that in mind, it seems laughable that a number of initiatives in the Mobile Internet market over the past two or three years brought in a couple of hundred people, scraped together several billions from investors and started developing services, according to Bengt Nordström.

"The key is to have companies with just a few people who develop a few services and then expand if they go well," he says.

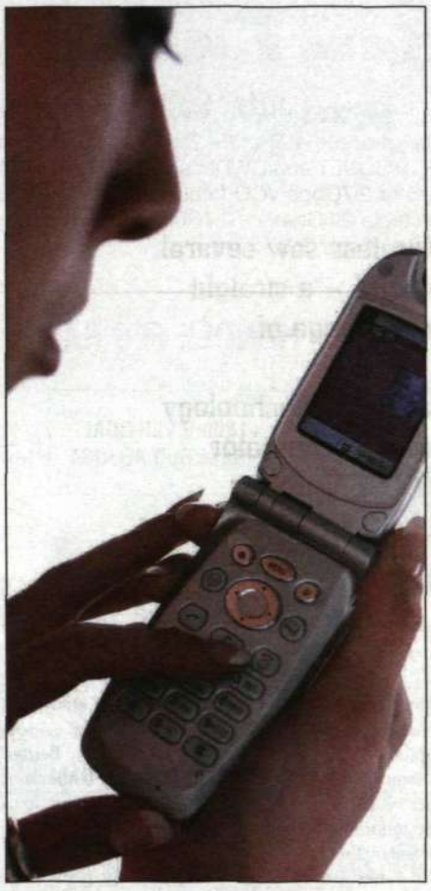
He lavishes both praise and criticism on the world's most successful Mobile Internet concept to date.

"DoCoMo is not attempting to control the content and there is a clear structure in place for distributing revenue. That is something that the rest of the world should learn from."

### Better carrot needed

One disadvantage of i-Mode is that content providers receive a fixed amount per user.

"It would be better to give content providers a portion of the variable revenues. That would be a better incentive to develop attractive services."



When i-Mode comes to Europe, service providers will need to have realistic expectations, according to a report by Swedish consulting firm, Northstream. PHOTO: KPN

But, of course, the rest of the world can learn a great deal from i-Mode. At Northstream, they do not accept the theory that Japan is such a different market from Europe. A recent study conducted by Forrester Research reinforces this belief. It concluded that the use of SMS services in Europe is more or less resembles how the Japanese use i-Mode.

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Northstream's report is entitled: Lessons from i-Mode II.

www.northstream.se

### NOT JUST I-MODE

*In conjunction with the arrival of i-Mode in Europe,* a broader initiative is underway to harmonize the Mobile Internet. The project – known as M-Services – was initiated by the GSM Association in June 2001.

The focus of the project is on mobile phones. The GSM Association is working to get mobile phone manufacturers to follow certain guidelines when they build new mobile phones. This way, operators and content providers will be able to concentrate on creating services that work regardless of the terminal used.

The initiative is supported by most of the major manufacturers, including Ericsson.

PHOTO: TOBIAS RÖSTLUND/PRESSENS BILD

## Markets warm to venture capital

**The market for venture capital** is gathering momentum again, according to fresh figures from PricewaterhouseCoopers.

Venture capital companies in the US invested USD 7.1 billion during the fourth quarter of 2001, reversing the downward trend of the previous six quarters. Prospects for Europe were also encouraging.

"Venture capital companies are starting to look at new propositions, as opposed to just shoring-up their existing investments," says Keith Arundale of PricewaterhouseCoopers to Silicon.com.

## DoCoMo looking for French 3G partner

**NTT DoCoMo would like to increase** its presence in Europe by finding a 3G partner in France, writes the French newspaper La Tribune. The company has already signed a cooperative agreement with the country's smallest GSM operator, Bouygues Telecom. The companies are collaborating to launch i-Mode-like services.

## Broken 3G promise could cost Tele2 dearly

**Norway's Tele2 was to have installed** 821 3G towers by December 1, 2001, but did not succeed in putting up a single one. Now the operator is facing fines of between USD 33,300 and 45,000 per day if it does not proceed with construction.

"The fines have been set at level intended to motivate Tele2 to decide whether it will proceed with construction or not," says Will Jensen of the Norwegian Post and Telecommunications Authority, to Digi.no.

Norway's other 3G operators – Netcom and Telenor – have not fulfilled their promises either, although they have made more progress than Tele2. Another 3G operator, Broadband Mobile, declared bankruptcy in August 2001. That license will soon be available for bidding again.

## US mobile users get SMS fever

**Text-messaging in the US** has increased dramatically. Mobile phone operator Cingular Wireless reports that the number of messages sent has grown by 450 percent since summer 2001, and AT&T Wireless experienced a 30-percent increase during the Christmas and New Year holidays. That growth is expected to be even greater once all the operators are able to send messages to competing operators' networks. According to Ted Theologis, senior analyst at the Arena Intelligence Group, this will occur sometime this year, writes Total Telecom.

AT&T Wireless customers have been able to send text messages to subscribers of other networks since last November. Already, approximately 30 percent of the operator's messages are being sent to other operators' networks.

# Change to GSM in record time

The Canadian operator Rogers AT&T Wireless saw several advantages in changing from TDMA to GSM – a straight path to 3G, economies of scale and a wide range of terminals and applications.

Robert Berner, senior vice president and chief technology officer at Rogers AT&T Wireless, says that the operator made its decision when its US partner AT&T Wireless decided to change to GSM. In cooperation with Ericsson, the change was made in record time.

Toronto was one of the first cities in Canada to be included in Rogers AT&T Wireless GSM and GPRS network. This year, the network will provide coverage for 93.5 percent of the Canadian population.

PHOTO: CLAUDE GARIEPY

**Ericsson and Rogers AT&T Wireless** have been working together since the 1980s, when the operator's analog network was built. In the early 1990s, Ericsson built a digital TDMA network on top of virtually the entire analog network. To date, the two networks have complemented each other, and subscribers are able to use phones that work in both. Rogers AT&T Wireless is very pleased with the voice service in these networks.

"Previously our strategy for migrating to 3G was to use the TDMA network for voice traffic and to overlay it with an EDGE network for data traffic. The two would be merged in the subscriber's terminal," says Robert Berner.

## Too different

In mid-2000, the operator nonetheless decided to change from TDMA to GSM/GPRS and let the new network overlap the old. According to Robert Berner, there were several reasons.

The economic advantages and economies of scale provided by the global GSM standard were obvious. The wide range of terminals and the ability to combine applications and products was also appealing. EDGE was certainly the right way to go, but with TDMA as the platform for voice traffic, Rogers AT&T Wireless feared that they would be too different from the rest of the world.

"It appeared to be more economical to follow global trends and invest in an integrated GSM/GPRS network for 3G migration. When our American partner AT&T Wireless made its decision, we were completely convinced. We then knew which standard would dominate in North America," continues Robert Berner.

The transition is a logistical challenge of enormous proportions. The operator selected Ericsson as sole supplier of GSM/GPRS. According to Robert Berner, Ericsson won the contract thanks to a combination of expertise, products and dedication. Ericsson lived up to expectations and even managed to beat the tough deadlines set by the operator.

"In November 2000, we announced our plans publicly. We counted on the new network providing the same coverage as the TDMA network, meaning about 85 percent of the Canadian population, no later than December 31, 2001. There was no room for mistakes, and people took to the task as if their lives depended on it. We actually succeeded in completing the work within the deadlines that we had set. In part, I believe that was because we were working with equipment that had been tested previously in other places," says Robert Berner.

## Work distribution important

Andy Swainson, vice president for service solutions at Ericsson Canada, explains that distributing the work was extremely important.

"We began by carefully defining the scope of the work we had ahead of us. We then dedicated two working groups from both our organization and the Rogers organization that worked very closely and were in daily contact with each other," says Andy Swainson.

The GSM/GPRS network is now in operation, and Rogers AT&T Wireless is in the initial phases of a marketing campaign to generate interest for the mobile Internet.

"There is great interest for mobile communications in Canada, but users don't care if they are using GSM or GPRS. They are interested in applications. GPRS opens many new opportunities, but mobile data services are still something new for users. We are working on several data services based on packet technology that we expect to be very successful," says Robert Berner.

Rolfe Philip, vice president and general manager, Rogers AT&T Account Group at Ericsson, relates how Ericsson is working with the operator to attract customers.

"Roger's subscribers can now customize WAP services according to personal preferences using a WAP portal developed by Ericsson. The portal can be accessed via the Internet or the mobile phone," explains Rolfe Philip.

Subscribers will gradually start using GSM/GPRS exclusively. Rogers AT&T Wireless is not offering dual-mode phones that work in both networks, since they overlap each other.

## Build-out continues

Network build-out will continue for some time yet. This year, the operator expects that the new network will overlap the old analog network and provide coverage for 93.5 percent of the population.

"Another important process is establishing roaming agreements with other GSM operators in North America so that we can really take advantage of the uniform standard," concludes Robert Berner.

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Rolfe Philip, vice president and general manager, Rogers AT&T Account Group at Ericsson, Robert Berner, senior vice president and chief technology officer at Rogers AT&T Wireless, and Andy Swainson, vice president for Service Solutions at Ericsson in Canada. Rogers AT&T Wireless and Ericsson have cooperated to build out GSM and GPRS in record time.

### FACTS ROGERS AT&T WIRELESS

Rogers AT&T Wireless is Canada's largest mobile operator with 2.9 million subscribers and covering 93 percent of the Canadian population.

Rogers Communications Inc. owns 51 percent of the company, while the US operator AT&T and the UK's BT own equal shares totaling 33.3 percent of the company.

Ericsson is the exclusive supplier of GSM and GPRS to the operator, and the companies have collaborated since Rogers AT&T rolled out an analog network in the mid-1980s.

# New standard is wake-up call for operators

**Designing services for the mobile Internet is dead easy, thanks to the new application programming interface Parlay. This was shown to operators by college students in a project initiated by Ericsson in the Netherlands.**

Students at the Hogeschoole Brabant in the Netherlands demonstrated their applications to the representatives of the country's largest operators.

PHOTO: FLORIN VAN SLINGERLAND

At the Hogeschool Brabant in Breda, the Netherlands, nervous activity reigns. Clusters of young men stand in front of the screens in the computer room, putting the finishing touches to applications that they have devoted the past few weeks to developing. Soon they will present them to the operators who have ordered them, and then everything must work.

In November last year Ericsson brought together the students with representatives of the operators KPN, Telfort and Libertel-Vodafone for the first time. The task was to develop ideas for mobile services that would then be developed by the pupils on assignment of the operators. After a crash course in the Parlay programming language, it was time to get going.

Stefan Dingenouts

"We were a little nervous because we had to do it all in three weeks, and we didn't know much about telecommunications and had hardly heard of Parlay before we got started," says Stefan Dingenouts, a student on the Hogeschool Brabant's vocational computer science course and a participant in the project. His group developed a wake-up call service for telephones on behalf of KPN, the largest operator in the Netherlands.

The short development time was one of the aims of the project. That way, Ericsson can show the operators that Parlay is the solution when it comes to accelerating the development of services for the mobile Internet.

"Parlay makes it possible for programmers with no previous experience of telecommunications, to easily and quickly develop new services," says Edwin van Eck, project manager.

Edwin van Eck is also the person behind the initiative and has worked hard to involve various parties in the project, a task that has not been entirely easy, since Parlay is relatively new and unknown. In addition to coordinating the project, Ericsson's role has been to support students during the development phase.

"There was not much documentation on Parlay, but the technical support was very good. All the problems were solved at once," explains Stefan Dingenouts.

It is now time for the presentations. The various groups disappear with "their" operators and KPN's representatives sit down in front of Stefan Dingenouts to hear about the progress on the wake-up service that they ordered about a month earlier. With technical assistance from the others in the group, Stefan Dingenouts shows on an overhead how to place an order and after a few breathless seconds, a ringing tone is heard from the yellow T68 on the slide.

Afterwards, Armando Voets from KPN is extremely impressed – not about the service itself, which is really rather simple, but the fact that they succeeded in developing it in such a short time.

Edwin van Eck, project manager at Ericsson in the Netherlands.

"This really shows that Parlay is fast, simple and easy to use, even without previous knowledge. For those who are looking to launch new services quickly in the market, Parlay is definitely the standard of the future."

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# Parlay interface opens up networks

**Parlay is an open global standard** that works as a bridge between telecommunications and information technology. Using the interface, computer programmers can develop telecommunications applications and services without having to know anything about how a telephone network functions.

"Parlay opens up telecommunications networks to IT developers, and Mobile Internet to telecom operators, allowing creativity to blossom as more people are able to develop applications," says Ronne Hamerslag, director of value added solutions for Ericsson's fixed and mobile network solutions.

Parlay can "speak" with all kinds of networks – both fixed and wireless, GSM as well as GPRS, and UMTS. Ericsson developed the standard in conjunction with a large number of suppliers and operators in the telecom industry. BT, Telenor, IBM and Cisco are just a few examples of the companies that are backing Parlay.

Ronne Hamerslag

"The strength of Parlay is that it is a standard that was developed jointly by telecom manufacturers and operators, and is consequently especially suited to fulfilling the requirements of the industry," says Ronne Hamerslag.

Just as with all other standards, the more who use it the better, so now it is important to quickly market Parlay to operators and IT developers. The student project in the Netherlands is part of that effort and was implemented in conjunction with Ericsson's release of its Jambala Service Capability Server last December.

"We are the first to launch a Parlay Gateway of this class. Telecom Italia Mobile (TIM) was our first customer and they are very satisfied. We have already received three or four new orders, as well as a couple of ongoing global purchases."

Everything points towards the prospect of Parlay becoming a global standard to reckon with in the future.

"Parlay is still new. While it has not yet taken off, it is on its way up," concludes Ronne Hamerslag.

TONYA LILBURN

Ericsson is one of the three companies that will supply antennas for NTT DoCoMo's 3G network. This is further proof that Ericsson is among the world's top companies for leading-edge technology and quality.

"There is no customer other than NTT DoCoMo that uses so many advanced antennas in its mobile network," says Per-Erik Pettersson, Ericsson Microwave Systems, in Sweden.

Ericsson's 3G antenna Jass as it looks during the test phase. For normal operations, it has a horizontal position and a casing.

# Demanding customer selects Ericsson's 3G antennas

Everyone now knows about the success of the Japanese packet-switched data service, i-Mode. Fewer people know that half of all i-Mode calls are switched via Ericsson equipment.

This earlier transaction has led to Ericsson being selected to supply a third of the antennas required for NTT DoCoMo's new 3G network that is being built out at a rapid pace.

"It is a rather large transaction," says Sven Eriksson, Ericsson NRJ's account manager for NTT DoCoMo. "However, in this case, there are factors other than money that are important."

NTT DoCoMo is an operator that brings a special sparkle to the eyes of Ericsson's engineers and market manager. There is no mistaking that this is a prestigious customer.

"In purely technical terms, NTT DoCoMo is one of the world's most demanding customers," says Per-Erik Pettersson, head of Market Operations, WCDMA & PDC Products at Microwave Systems, which has worked with NTT DoCoMo as a customer for many years. "This is why it is an extra challenge for us to meet DoCoMo's needs."

Nobuo Ohki is a member of the Ericsson NRJ project group that is working closely together with both NTT DoCoMo and Ericsson Microwave Systems. He is carrying an antenna prototype.

PHOTO: MARGARETA JONILSON

"But it is also significant that DoCoMo can contribute major resources when this cooperative venture has been firmly established. They want to work very closely with us and the exchange between Mölndal and Tokyo is extensive.

"It is wonderfully stimulating for us to be able to balance our expertise against theirs in a way that is based on trust. In addition, they understand that, although they are skilled price negotiators, their customer-specific demands must cost money," says Per-Erik Pettersson.

The traffic flow between Narita Airport, in Tokyo, and Landvetter Airport, in Gothenburg, has been continuous for more than ten years.

It began with Ericsson, as one of four manufacturers, supplying MDE modems for NTT DoCoMo's PDC network, the Japanese version of 2G mobile systems, such as GSM and TDMA.

The MDE modem, which is completely different to what we normally associate with modems (see Fact-box), was developed by Microwave Systems in Mölndal and was manufactured by ERA in Gävle, in northern Sweden.

"A little way into the second half of the 1990s, we were assigned to develop a modem for packet-switching of data," says Lars-Erik Pettersson. "At the time, we didn't know exactly how it would be used: not until February 1999 when DoCoMo launched its i-Mode service did we see the full value of packet data."

Ericsson was by that time one of two suppliers to DoCoMo and it has had about half of the market ever since.

After this, the cooperation between Ericsson and NTT DoCoMo has continued to develop. *Contact* previously reported that Ericsson manufactures entire base stations for NTT DoCoMo's network. Now it has also been decided that the company will buy antennas for its 3G network from Ericsson.

Once again, it is not a matter of just any antennas. Japan's topography, the earthquake risk in the Tokyo area and the densely built, metal-reinforced buildings are all factors that, when combined with NTT DoCoMo's high demands, to create extremely special needs.

"It is not unusual that antennas have slightly different properties depending on the coverage required and the environment in which they are to be located," says Per-Erik Pettersson. "What makes DoCoMo unique is that it uses this type of advanced antenna everywhere."

NTT DoCoMo works with some 60 variations, all of them customized for various external conditions. In addition, it must be possible to remotely control the antenna and, in the longer term, adjust them automatically. It is such features that make Ericsson's engineers starry-eyed.

NTT DoCoMo has attracted a large amount of attention in recent years, partly because it has succeeded with i-Mode, but also because it decided to be first in the world to launch 3G.

However, it is NTT DoCoMo's competitor J-Phone that remains Ericsson's largest customer in Japan. J-Phone will roll out its 3G network in the summer.

MARGARETA JONILSON
freelance journalist

**FACTS** **MDE, MODULATOR DEMODULATOR EQUIPMENT**

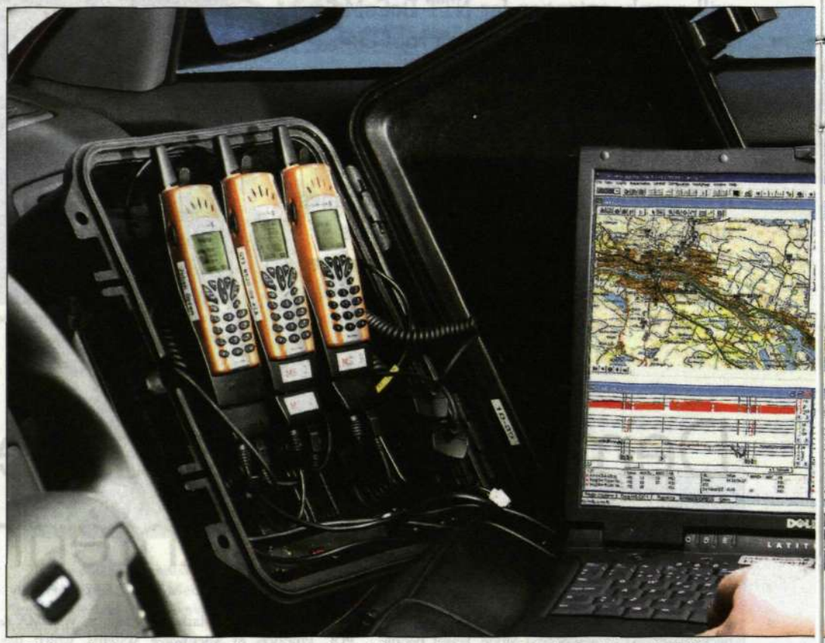
MDE is the vital part of NTT DoCoMo's radio base station, where the signal for the call or data transfer to the mobile phone is coded and modulated and where the signal from the mobile phone is demodulated and decoded.

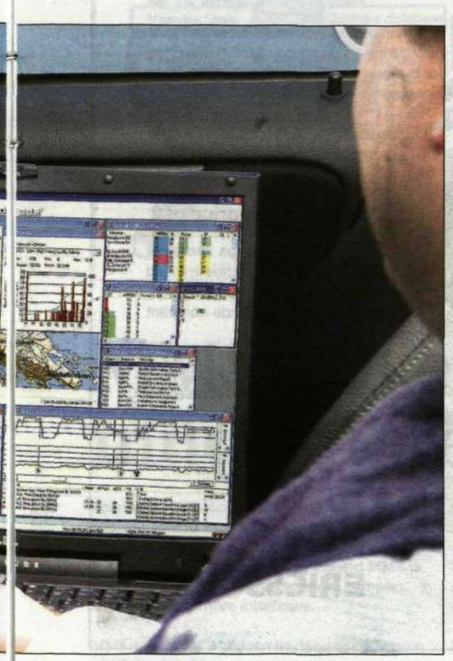
The MDE contains the radio and communications components in the base station, but not the antenna, amplifier and service equipment.

Amplifiers are included in the microbases that Ericsson supplies to NTT DoCoMo.

# Technology shift benefits TEMS

**There is a huge demand among operators for efficient and reliable equipment that can make mobile phone networks less expensive to operate. One indication of this has been the level of interest shown by customers in Ericsson's TEMS products, which are used for optimizing and planning mobile phone networks.**





TEMS Investigation is the name of the testing equipment that has become a best seller for Ericsson's TEMS product unit. The tool simulates a mobile phone user and can be operated from an ordinary car. By driving around its mobile network, an operator can gather information about network operation and quality. Of the 20 largest mobile phone network operators, 18 regularly use the tool for testing their networks.

PHOTO: MICHAEL JACOBSSON

During its ten years of existence, the TEMS unit has experienced an increase in orders received and sales made every year. Even during the downturn in the telecom sector in 2001, the unit made a substantial profit.

Mike Bonin

"While 2001 was a difficult year for many, it was actually a very good year for us. Sales increased by 18 percent and profits by 40 percent," says Mike Bonin, head of TEMS.

He envisions a very bright future. Customers have already started purchasing equipment to optimize their 3G networks and Mike Bonin predicts that the next three years will generate an average of 15 percent growth per year in both sales and profits.

"We're in the midst of a technology shift towards 3G, and every technology shift has resulted in increased sales for us. For operators, the transition to 3G networks involves acquiring all kinds of new equipment. This equipment must be planned for and tested prior to being put into use, and we have the products that help them do that," says Mike Bonin.

The most popular TEMS product to date has been the TEMS Investigation testing tool. It is a mobile phone with modified software and an optimization application that is loaded onto a laptop computer. With TEMS Investigation, it is possible to simulate mobile telephone users and collect data about a mobile phone network's operation and quality.

Rikard Lundqvist

"It is commonplace for operators to drive around with the equipment in a car. The tool places calls at regular intervals to base stations and real-time data appears on the computer screen, showing what is going on within the network. It's possible to find out what kind of signaling is occurring, where in the network calls are being dropped and why," says Rikard Lundqvist, product manager at TEMS.

## Improved service and profits

A GPS receiver is built into the product, allowing the unit's geographic location to be pinpointed using a map on the computer screen. Once the operator has collected a sufficient amount of data, it is possible to fine-tune channel distribution and frequencies so that mobile subscribers experience the best possible service.

This, in turn, results in greater profits for operators. TEMS Investigation is available for most mobile phone standards, including CDMA2000 and WCDMA. Of the 20 largest mobile phone network operators, 18 regularly use the tool for testing their networks. Altogether, over 400 customers worldwide use TEMS equipment.

"Recently, our largest sales have been to China. Both GMCC and China Unicom are utilizing our test equipment in conjunction with the comprehensive expansion of mobile phone networks occurring in China," says Rikard Lundqvist.

## Automation the next step

Mike Bonin and Rikard Lundqvist believe that the TEMS Automatic testing tool will become a best seller in the future. It, unlike TEMS Investigation, is completely automated.

"I'm convinced that operators will soon arrive at a point where they will be forced to operate their networks extremely efficiently in order to become more profitable. Once that occurs, the demand for fully automated testing equipment will be huge," says Rikard Lundqvist.

TEMS Automatic consists of a central unit and several mobile testing units. The mobile testing units can be positioned virtually anywhere (i.e. a taxi, delivery truck, or other vehicle) and independently collect information about the network. This data is then transmitted to a central unit located on the operator's premises.

"The intention of TEMS Automatic is to enable operators to easily and cost-effectively gather large amounts of data about their networks. That way, they can focus their engineering resources on installing new mobile networks."

Rikard Lundqvist believes that TEMS is in a very good market position when it comes to fully automated optimization systems.

"As far as I know, none of our competitors has yet succeeded in creating a fully automated optimization system. Currently, most of our product families are complete for GSM, TDMA and GPRS, cdmaOne and iDEN (an American mobile radio standard that is based on TDMA technology) and have already released several products for WCDMA and CDMA2000."

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### FACTS: TEMS

TEMS is a unit within the Global Services business unit and also the registered trademark for Ericsson's product portfolio for planning, maintenance and optimization of mobile phone networks. TEMS is headquartered in Washington, in the US. Development of TEMS products occurs in Washington and San Diego, in the US, Budapest in Hungary, Skellefteå and Kista, in Sweden.

### FACTS: HISTORY OF TEMS

1991: TEMS formed in Skellefteå, Sweden
1995: Introduced a product portfolio of automatic testing tools for GSM networks.
1995–1997: Sales offices opened in the UK, the US and Malaysia.
1997: Product portfolio expanded to include radio planning tools.
1999: Took over the product division of US telecom consulting firm LCC International.
2001: Unveiled optimization tools for GPRS, CDMA2000 and WCDMA.
2002: TEMS takes over development of planning tools for CDMA2000 (San Diego) and WCDMA (Kista).

# Test unit helps police catch crooks

**TEMS' largest single customer – American operator AT&T Wireless Services – has benefited in more than one way from the unit's products. Recently, the company was able to recover a stolen vehicle thanks to a smart engineer and the accuracy of a testing tool.**

**Like most operators,** AT&T Wireless Services is continually fine-tuning the quality of its mobile network. Last autumn, AT&T completed comprehensive testing of its mobile network in Manhattan, New York, utilizing a TEMS Automatic system based on the Mobile Test Unit (MTU). The MTU consists of a box about the size of a videotape player, and is considered by TEMS employees to be the single most attractive product they currently offer.

The test boxes were located in a number of vans that AT&T drove around Manhattan in order to collect data relating to the network. One morning, when one of the drivers arrived at the parking facility to take the van out on a daily test tour, he discovered that the vehicle was missing. He called AT&T headquarters and explained that the van had been stolen with the equipment still inside.

"One of the engineers at AT&T then came up with the brilliant idea of checking with AT&T's central database outside Seattle. The test units were, in fact, programmed to transmit data – relaying GPS position, time of day and network status – to a central database as soon as the vehicle's engine was turned on," says Rikard Lundqvist.

Once they figured out the stolen vehicle's serial number, it was an easy match. The data received recorded the exact route the vehicle had taken, from the parking garage until its engine had been turned off. AT&T reported the auto theft to New York police and included a map of the van's route.

Later the same day, the thieves were caught red-handed, still sitting inside the vehicle. One can imagine their surprise when they realized that they were the ones who had led police right to them.

JENZ NILSSON

# Europolitan Vodafone acquires testing tools for 3G network

**Mobile phone operator** Europolitan Vodafone is the latest in a long list of customers who have purchased TEMS testing equipment. The company will be using TEMS Investigation WCDMA to ensure the quality of its 3G network in Sweden.

"We have utilized TEMS products for many years in order to maintain the quality of our GSM networks. Now we're looking forward to using TEMS Investigation in conjunction with the rollout of our 3G network in Sweden," says Åke Andersson, head of the radio technology department at Europolitan Vodafone.

The company is purchasing a complete TEMS Investigation WCDMA system and will be utilizing the testing equipment throughout its entire Swedish 3G network.

"Traditionally, Europolitan Vodafone has been very interested in how its customers experience network service. It has been using TEMS Automatic to ensure network quality from a customer perspective and I'm convinced that the acquisition of TEMS Investigation WCDMA will help ensure that their customers receive even better service," says Julian Lowe, head of TEMS product sales in the Nordic region.

JENZ NILSSON


Last autumn, mobile operator AT&T Wireless Services recovered its stolen van thanks to TEMS testing equipment. The signal emanating from the Mobile Test Unit (MTU) inside the van led police directly to the thieves.

ILLUSTRATION: BJÖRN HÄGGLUND

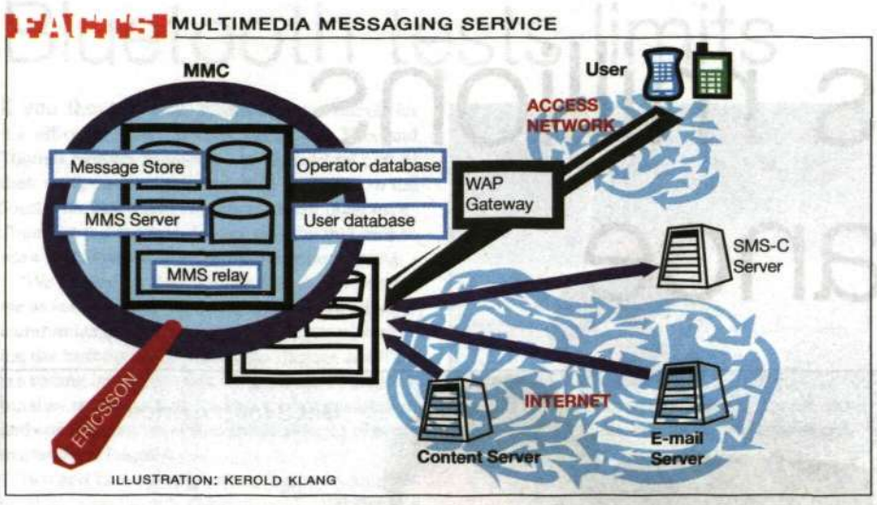


ILLUSTRATION: KEROLD KLANG

# MMS – like SMS, but much more capable

**Following the success of SMS is MMS, which allows users to send images and sound from their mobile phones. Although it is just as easy to use as SMS, the technology behind MMS is much more capable, but also more complex and with many more interfaces.**

MMS stands for Multi-media Messaging Service, which by definition means that the message consists of at least three different elements, such as text, image and sound, which are synchronized. Initially, the MMS standard will support still images, animation and sound clips, but support for video clips and mp3 files is on the way. Unlike e-mail, MMS messages are not retrieved from a server on which they are stored, but rather pushed directly to the mobile device. An MMS message can be sent to and from a mobile phone, to and from an e-mail account or from a content provider on the Internet. Examples of MMS from content providers may include stock information or cartoons. There are no real limits on the size of MMS messages, but initially a limit will be set of about 30 kilobytes, which can be compared with the 140-byte limit for SMS.

MMS is specified in 3GPP (Third-Generation Partnership Program), which is the standards body for 3G networks, and in the WAP Forum, since MMS uses WAP as a bearer for transmission. In practice, at least GPRS packet data is required for MMS to function as intended.

Lars Ljunggren

"Based on these standards, Ericsson has developed a turn-key solution for MMS that includes mobile phones, applications and the nodes that operators must add to their networks," explains Lars Ljunggren, project manager and the person responsible for the introduction of MMS.

### Ericsson's new MMC

To be able to offer MMS, an operator must have a number of nodes. The operator must have a WAP gateway, which is the link between mobile users and a WAP web server, which among other capabilities must support WAP Push, which Ericsson's solution does already. The operator undoubtedly also has an SMS server, but an MMS node will also be needed.

Ericsson has developed its own solution for this node called the Multimedia Message Center (MMC), which is based entirely on the open 3GPP and WAP standards," says Lars Ljunggren. "This node, which becomes an integral part of the network, is based on commercially available products and consists of several components."

At the heart of the MMC is an MMS server that handles all incoming and outgoing MMS messages and ensures that they are placed in a temporary message store before being forwarded. An MMS Relay handles contact with other nodes, such as an e-mail server, which is required for sending to an e-mail address, an MMS content server, an SMS server and the billing system.

The node also includes a user database containing a profile for each user, which may include information on how many times the system should try to resend an MMS message and what type of phone the user has so that the MMS message can be converted to the correct resolution, format, et cetera. According to the standard, the system will be able to determine what phone the user has so that users who only have an SMS phone can receive MMS messages as SMS and read the MMS message later over the Internet.

### End-to-end solution

Lars Ljunggren emphasizes that Ericsson provides an end-to-end solution for MMS and the MMC system has already been sold to several operators.

"In January, we signed a contract with the global generator, Vodafone, which was secured amidst competition with all the most prominent players. We also have more than 50 MMC test systems installed, half of which are controlled by the operators."

The development work for MMC was carried out at Ericsson's design office in New York. Extremely rapid development of applications that use MMS is now taking place through Ericsson's global network, Ericsson Mobility World.

MMS has all the prerequisites to quickly gather momentum.

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www.ericsson.com.review

www.ericsson.com/mms/

internetapplications.ericsson.se

Ingrid Sandström and Klas Holgersson show the new boards that support mixed transmission over optic fiber, coaxial cable and paired cables.

PHOTO: ECKE KÜLLER

## Universal interface eases introduction

**When the new AXE810 platform** is released on the market, it will support transmission over optic fiber at a speed of 155 Mbps or over coaxial cable or paired cables at a speed of 2 Mbps. The AXE810 has an optic STM1 interface called ET 155-1 for SDH transmission, while the classic solution for PDH is a 2 Mbps interface called E1/T1.

A new product has therefore been developed in a short time in a cooperative effort involving ECA, ERA, ETX, UAB and ERI. The interface is a multiplexer called ET4-1 that converts optic SDH to electrical PDH, thus paving the way for Ericsson's ET 155-1 board. When this product is released in May, Ericsson will have an SDH/PDH solution that is far ahead of the competition.

"Ericsson can deliver new switches with an optical interface, yet we also have a solution for customers who have PDH," says Klas Holgersson at ECA who coordinated development. "Operators will continue to use some PDH in their networks, which means that this product will be much in demand."

cnmsales.ericsson.se/products/axe810.shtml

## Voice and handwriting recognition in cell phones

**The US company ART,** Advanced Recognition Technologies Inc., which is a leader in voice and handwriting recognition, is now making its products available to Texas Instruments for inclusion in its signal processors for the next generation of mobile phones.

ART's smARTspeak NG voice recognition algorithm, for example, will make it possible for manufacturers to customize functionality using a mass production model, rather than choosing between different technical implementations. ART's smARTwriter can recognize ordinary handwriting and supports all major Western languages.

## tech tips

**There is much money** to be made and efficiency to be gained by using IT tools optimally," says Gunilla Ahrens at Solution Management IT, which is responsible for coordinating efforts to ensure that all employees make the best possible use of existing tools.

To support these efforts, Technical Tips will be a regular feature in the Technology section in which we will present tips on how to encrypt your hard disk before traveling, how to use the functions included in our phones, how to make phone calls most cost efficiently, how to access our IT environment from outside the office, et cetera.

The first tip, however, is to visit the portal, which will get you started.

Infosverige.ericsson.se/it_stod/our_it_environment/index_eng.asp

# He saves millions on insurance

**Ericsson is back at the negotiating table with its insurance and retirement fund providers. The last round resulted in huge savings for Ericsson without missing out on employee benefits. This time, Ericsson's corporate benefit manager is looking to fine-tune even more.**

Hans Eklund, Ericsson's corporate benefit manager, is again trying to reduce insurance companies' additional charges during this round of negotiations. PHOTO: ECKE KÜLLER

About one-third of Ericsson employees earn USD 3,100 per month or more. At that salary level, they can participate in a defined contributions scheme, whereby they specify retirement benefits beyond the standard deals negotiated by unions and Ericsson.

By eliminating commissions paid to insurance companies each time a broker closes a deal, Hans Eklund shaved about USD 16 million off the cost of those benefit plans.

## No middle man

"We brought in brokers as consultants, so their first and only loyalty would be to Ericsson." Their income was thus set, regardless of which insurance carrier was used. The next step was to select ingredients in the benefits package.

"We asked ourselves what we wanted," explained Hans Eklund. "There should be retirement provisions, disability, spousal pensions, et cetera, and it should be as simple as ticking three boxes," he said, noting that he no longer spends thankless hours signing insurance documents.

Hans Eklund says consulting fees were also reduced by making information available on the Internet, at mass meetings and via e-mail. Consultations generally take place on the phone. He admits that the insurance companies were taken aback by his ideas and reluctant to lose the commission income, but relented after a total of 18 months of negotiations. Ericsson's current pension providers in Sweden are SPP, Skandia, AMF Pension and SEB Trygg Life.

## Future benefits packages

In the new round of negotiations, due to be completed in December, Hans Eklund wants to clarify roles and continue paring down extras from the insurance companies.

"The market has changed a lot since the last round of negotiations, so we know the insurance companies are better prepared.

"We need to 'unbundle' the package now. The gross premium could be separate from the spousal benefit and the disability plans," he says.

"We want to make sure we spend money wisely on this, not only in Sweden, but globally," adds Hans Eklund.

He believes the way to do that is to conform with the way insurance is administered in the United States or the United Kingdom.

"It's like being at a cafeteria and choosing what you want to eat. Employees are each alloted X amount of money, then they select their own benefits. I think this system is on its way to Sweden," Hans Eklund predicts.

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# Bluetooth tests limits

**If you thought that Bluetooth** was merely for the office, it's time to think again. For Tina and Thomas Sjögren, Bluetooth was an integral part of their equipment as the two skied their way to the South Pole in icy cold conditions. Their polar expedition, sponsored by Ericsson, was the first ever to use a Bluetooth wireless communication system.

"We wanted to show clearly that at Ericsson we are as committed to exploring the furthest edges of communication as Thomas and Tina are to exploring the furthest edges physically. Thomas and Tina are testing our equipment in an extreme situation, but they are also testing our name, our commitment and our integrity," says Sten Yondt, director of event marketing at Ericsson.

Tina and Thomas Sjögren each carried a computer, about the size of a cigarette pack, next to their bodies. Those were connected to small keyboards attached to their wrists. With the help of Bluetooth technology, the couple was able to maintain contact with each other and the rest of the world by writing and reading text messages on a transparent screen that was hooked over their shoulders. They were also able to monitor their daily position on their screens as they inched their way closer to the South Pole.

On the last day of January, after an almost three-month journey across the frozen expanse, they reached their goal. The temperature was close to minus 70° C, but the crew at the South Pole station recieved them with open arms. On their homepage, the couple writes:

**With the help of a screen carried over the shoulder, Tina Sjögren was able to monitor the expedition's progress towards their goal: the South Pole.**

PHOTO: WWW.THEPOLES.COM

"We must have made some sight, frozen solid. After 60 days of isolation this was a very warm welcome. Well, we are in a tent now, very tired and immensely happy. Hey guys, we made it!"

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## from the archives

**Most people are familiar with Steinway pianos, but has anyone ever heard of an Ericsson piano? At the turn of the last century, Ericsson actually constructed a player piano called a Melograf. When a piece was played, the keys would trigger small knives that would cut holes of varying lengths into a role of paper. A piece could then be replayed, this time without the pianist. Ericsson did, in fact, received a large order for Melograf pianos from a firm in Leipzig. However, World War I broke out before the deal could be completed and other matters intervened. A Melograf player piano is now on display at the Technical Museum in Stockholm.**

## Kofi Annan writes to Kurt Hellström

PHOTO: ADAM NADEL/ PRESSENS BILD

United Nations' secretary general Kofi Annan recently took the opportunity to in writing thank Ericsson for assisting relief efforts in Afghanistan.

"The United Nations is grateful to Ericsson for the solid example it has set through its generous contributions in support of the work of the Organization," he writes in his letter, adressed to Kurt Hellström.

Earlier this year, Ericsson response installed a GSM network in Kabul, Afghanistan, dedicated to supporting the UN humanitarian operations in the area.

## Vegetables pay cellphone bills

PHOTO: COREL

**"Two minutes,** that will be two cauliflowers please."

This might be the response from the telephone operator when a resident of the Indian state of Uttar Pradesh pays for a phone call to Delhi. The mobile phone operator Escotel has, in fact, implemented a system where milk, fruit and vegetables can be traded for mobile phone calls. Goods can also be exchanged for telephone cards in many places, reports the newspaper Business Standard.

"Paying the bill with cane and milk is a boon for us since these commodities are usually available. Cash becomes difficult at times," says one customer to the newspaper.

## new assignments

Kinson Loo

Effective February 1, 2002, Hutchison will have its own global customer unit. Kinson Loo, based in Hong Kong, has been named global account manager.

Erik Löwenadler has been named head of Ericsson Microwave Systems, starting April 1, 2002. He succeeds Ulf Berg, who becomes head of the new Swedish company Ericsson AB.

Jan Kemvall

Jan Kemvall, former head of Ericsson in Thailand, has been named head of the Turkey and Israel market area from March 1, 2002. He succeeds Ersin Pamuksuzer.


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MILJÖMÄRKT 341 Trycksak 058

PRINTED AT:
Nerikes Allehanda Tryck Örebro, 2001

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no. 3
February 21, 2002

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Nils Olander, curator at the Stockholm Telecommunications Museum, has a new colleague. Her name is Pixie and she assists visitors at the new Imagine exhibition. PHOTO: ECKE KÜLLER

# Home to the future

A virtual maid, a bathroom mirror that provides make-up advice, a cat-flap that senses when your cat wants to come in. The futuristic Imagine exhibition (Swedish name: Tänk om) at the Telecommunications Museum in Stockholm takes us ten years into the future, into the high-tech home.

**"Do you want full lighting**, soft lighting, or cozy lighting," asks Pixie from a computer monitor on the wall. Frida Jonasson thinks for a moment and then gives her reply in the microphone. At once the lighting is dimmed to a weak glow behind the head of the bed.

"It works," she exclaims with a laugh, before leaving the bedroom to meet Pixie on another monitor in the next room.

We are at the Telecommunications Museum's new exhibition, Imagine, where the visitor has the opportunity to view a modern home, as it could look in ten years' time, and to try out the technology solutions of the future. Visitors are helped by Pixie, a virtual agent, who guides them through the home and answers questions.

"In the future, it will not be necessary to carry around computers the way we do today. Instead, computers will be built into our homes and will sense when you enter. Pixie is an example of this – she is a kind of virtual maid," says Nils Olander, curator of the Telecommunications Museum.

The exhibition is sponsored by Ericsson and Telia and is a kind of continuation of the Mobilen cell phone exhibition that opened at the Telecommunications Museum in 2001. The various technological solutions have been designed by small companies and provide examples of how broadband and mobile networks could be put to use in our homes in the future.

"Through cooperation, the small companies, which are often operated by talented young people, have secured the possibility to demonstrate that this technology exists today and that the solutions could soon be turned into reality," says Nils Olander.

Inside the high-tech apartment, Frida Jonasson has reached the bathroom, where there is a spacious clover-shaped bath, as well as a large mirror on the short side of one of the walls. This is an interactive mirror that reveals your height and weight, and also functions as a personal stylist. By entering images of various hairstyles and providing suggestions of clothes from your closet or from online stores, the mirror can help you to find the right style for the evening.

Frida Jonasson is extremely fascinated by the various technical solutions at the exhibition. An item that she found particularly attractive was the cat-flap that prevents unwanted visitors. Through contact with a transmitter on the cat's collar, it can admit your cat and keep the neighbor's cat out. However, Frida cannot envisage living in the home of the future. She doesn't find it particularly homely and has difficulty in seeing the need for all of the technical refinements.

"But the cat-flap was actually a cool idea. I could imagine having one of these at home, but I would have to get a cat first!"

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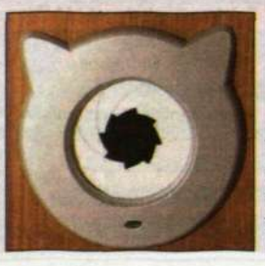


The electronic cat-flap lets your cat in and keeps the neighbor's cat out.

column

LARS-GÖRAN HEDIN
corporate editor

# Clearing the jungle of proceedings

**Large companies and organizations** have always had a strong tendency to develop into bureaucracies with rules and procedures for most matters. I have often asked myself over the years: How much time do the average employee and the average manager spend each year on filling in papers and forms?

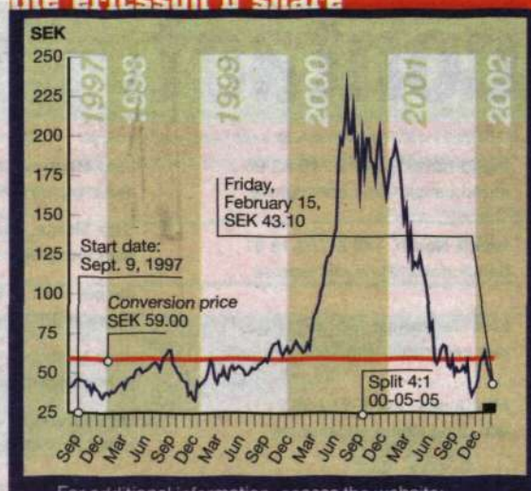
**Now – at last – a light is starting to appear** at the end of the tunnel. Primarily, there are increasing numbers of web-based tools, which, despite occasional deficiencies and teething problems, are making life much easier to live. Many procedures have been streamlined, redefined and centralized. Our article about Shared Services in this issue highlights a very positive trend. Suddenly, there are specialists available who can help to straighten out most problems.

**The beauty of it** is that Ericsson will make a great number of gains on the new initiatives that are now emerging one after the other. Poor contracts are being renegotiated as they finally come under the jurisdiction of experts: expensive suppliers are being replaced by those with more justifiable prices; centralized invoice-handling will liberate us – I hope – from the torment of reminders. And so on and so forth.

**However, it is important** that the new procedures are based on new and smarter ways of handling various tasks. A web-based tool is no better than old-fashioned forms if it is created using the same bureaucratic principles as its predecessor. Unfortunately, there are many examples of this. Sometimes, it feels like there has been too much of a rush in demanding the compulsory use of innovations.

**In the future**, may we learn to always test and consult intended users before we launch half-finished or poorly thought-out tools. If everyone is forced to use tools that are even more time-consuming than the old procedures, or that obstruct a healthy range of choice for products or solutions, there is a risk that the tools will be a hinder rather than a help. That is, they put a stop to the possibility of working efficiently.

**the ericsson b share**

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