

contact



PHOTO: GUNNAR ASK

Setting sights on network management 14-18



PHOTO: ECKE KÜLLER

Tina backs Nuremberg employees

8-10



PHOTO: BOB ATHERTON

Superlab for all antennas

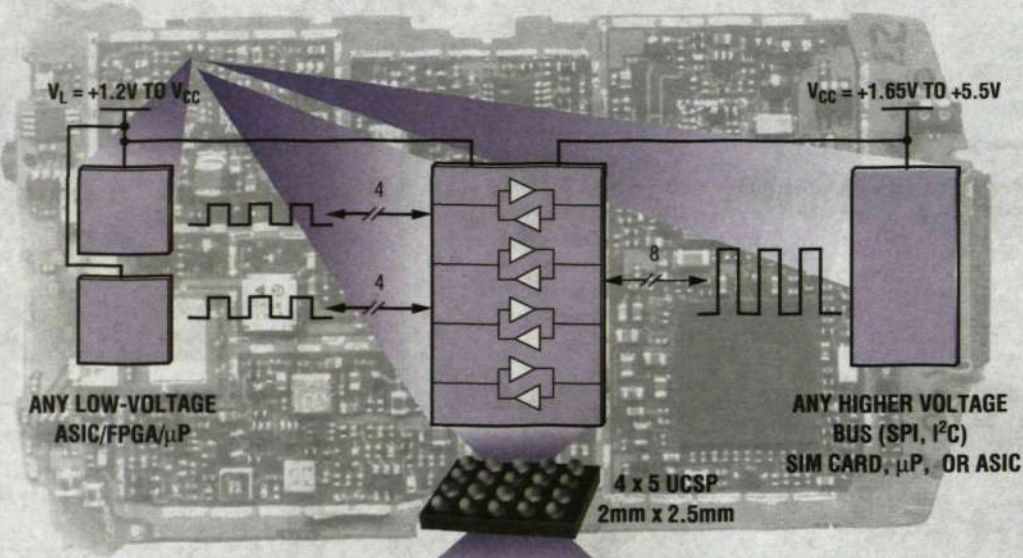
12-13

no. **22**
December 20, 2002

P800 on the market in time for Christmas	3
A confident Hellström looks ahead	4-5
Bluetooth on the highway	19
Strong performance at Telecom Asia	22

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Safe service in Austria

Austrian mobile operator Mobilkom Austria has signed a contract for Service Assurance with Ericsson. The solution provides one focal point for monitoring network and application performance.

Service Assurance monitors the quality of service offered to the end-users. The solution helps the operator keep track of whether customers get the required content within a certain time. If a customer for example buys movie tickets over the mobile network, he or she receives a message when the purchase has gone through.

Besides improving the level of security for the customers, Service Assurance helps operators track down failures and also act proactively to secure the

network. It measures performance in for example run-time and failure percentage, and compares it to the service level objectives.

"Having a partner like Ericsson, with competence and outstanding track record in handling complex system environments is very important for us," says Fritz Klinger, head of Division Operation and Maintenance at Mobilkom Austria.

The operator launched Europe's first national UMTS network on September 25. The Service Assurance Solution is designed for Mobilkom Austria's own services as well as services from external content providers.

JESPER MOTT

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Subscribers in Israel have an average talk-time twice as high as the subscribers in Europe.

Take-off for MMS in Israel

Ericsson has been selected sole supplier of end-to-end MMS infrastructure to mobile operator Partner Communication in Israel.

"The contract with Partner is important for us as it confirms our leading position in MMS," says Mats Dahlin, head of Ericsson's Market Area Europe, Middle East, and Africa.

"We have been present in Israel since 1996 and I am convinced that we are here to stay. The country is moving in to a hectic period of build-up for 3G and we have big ambitions in this area."

Partner Communication is the first GSM operator

in Israel and a part of the Hutchison Group. The operator has over 1.7 million subscribers.

"Subscribers in Israel have an average talk-time twice as high as subscribers in Europe. They are quick in picking up new services and this makes Israel a good market for the launch of MMS," says Bo Andersson, head of Ericsson in Israel.

Ericsson has delivered 50 percent of the MMS solutions for subscribers world wide and has 37 commercial agreements so far.

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Suspension lifted

One of the two Ericsson employees suspended from duty due to the ongoing espionage investigations, has now returned to work. The internal inquiry showed no breach of security and confidentiality regulations, and the employee is now completely cleared from suspicion.

The two suspended employees were never suspected of criminal activity by the Swedish police. There were, however, clear and early indications of relationships between the two and the main suspect.

Ericsson's internal investigation aims to clarify the scope of these relationships and to check if violations of internal regulations have been committed. The internal investigation continues and the second employee remains suspended.

ADSL contract in China

Ericsson has been awarded a contract by China Telecom to expand the operator's Digital Subscriber Line (DSL) network in the Anhui Province in Southern China. The order is one of the first commercial contracts for Ericsson's Ethernet DSL Access solution, which features the world's smallest DSL Access Multiplexer (DSLAM). Ericsson will provide China Telecom with Asymmetric DSL (ADSL) lines across five cities in the Anhui Province, mostly for residential subscribers.

China is experiencing strong demand for ADSL. China Telecom already has 1.5 million ADSL subscribers, and hopes to have two million by the end of 2002, and four million in 2003.

Bluetooth moving ahead

Ericsson Technology Licensing has signed a licensing agreement to provide its latest Bluetooth radio core, the K-D1, to National Semiconductor, a premier analog company focused on the market for wireless handsets. National plans to introduce products incorporating Ericsson's radio next year.

"By signing a licensing agreement with National Semiconductor, one of the world's top semiconductor companies, we have taken a big step toward reaching our goal of integrating our Bluetooth solution into mass market consumer products," says Maria Khorsand, president of Ericsson Technology Licensing.

Limited release of P800

Only a few countries will be able to buy Sony Ericsson's new flagship P800 during the holiday season. With a combined camera, personal digital assistant and telephone, the P800 is the most advanced mobile phone released by Sony Ericsson. "The mobile phone will be released in Sweden, Norway, Denmark, Finland, Italy, Germany, Saudi Arabia and the United Arab Emirates. It could also be released in some African countries. There won't be big volumes, but it will be available in shops in major cities. A large shipment will go out in January," says Sony Ericsson's spokesman Peter Bodor.



SFR orders MMS platform

France's second largest mobile operator SFR has selected Ericsson as its supplier of MMS technology. The agreement includes supply of the MMS platform as well as installation and integration. SFR is an affiliate of Cegetel and the second largest operator in France.

3G call in the Americas

Ericsson and AT&T Wireless have completed the first WCDMA/UMTS call in a live network environment in the Americas. With initial packet data speeds up to 384 kbps, the call demonstrates true 3G capabilities. The joint effort is part of a trial of the first 1900 MHz UMTS/WCDMA system in the Americas, which will have more than 100 cell sites in the Dallas area by the end of the year.



PHOTO: HENRIK MONTGOMERY/PRESSENS BILD

The downside of our industry is that we can never rest. As soon as we succeed, we must make new moves, which is why everyone must be prepared for change.

Kurt Hellström

The telecom industry's situation remains troublesome and there is no indication that the market has turned around. But there are enough positive signs for Kurt Hellström to feel confident about the future.

Kurt Hellström confident in the future

2002 has been another bleak year for the telecom industry, with investments remaining on hold and players leaving the field. The downturn is expected to continue next year, although at a slower pace. Ericsson anticipates that the decline will be between zero and a maximum of ten percent, as stated in connection with the third quarter report.

Nevertheless, there is reason to assume a somewhat brighter view today than some time ago, according to Kurt Hellström, Ericsson's president and CEO. He is now seeing several positive tendencies in the market, while carefully pointing out that this has still not led to an increase in investments.

"A positive sign is that European operators are starting to get a grip on their finances. They have reduced their debt burden and this is one of the factors that will affect their demand for our solutions in the future. It is really only a few major operators that are not yet on track. The operators are basically doing healthy business, with solid profitability and good cash flow. The problem is that their cash flow has been insufficient to pay interest and amortization, as well as investments," says Kurt Hellström.

3G already here

Another positive sign that Kurt Hellström points to is that the new services, in the form of GPRS, MMS and 3G, which the industry has long talked about, are now being rolled out on a large scale.

"People are asking when 3G is going to start. It has to be said that 30,000 3G base stations have been installed globally this year in a value of USD 3 billion – and we have been responsible for more than a third. We can see that 3G is already a significant part of our industry. Hutchison, Vodafone and a long list of other operators are now investing heavily in the new services and this will lead to an increase in demand, which will then generate demand for infrastructure. The networks are now in place, we have subscriber equipment, applications, services, content and the possibility to charge in a reasonable manner. And this is what the third generation is really about – not a frequency range or access technology.

"Another factor contributing to my positive view of the situation is that we have succeeded so well in our painful adjustment. It has not been pleasant for anyone involved, but we had no choice. If we hadn't pulled on the brakes nearly two years ago, we wouldn't exist today. It's as simple as that. At the same time, I must say

that this organization – and the people in it – are fantastic. Despite all the insecurity and the adjustment that everyone must go through, we have continued to deliver, to conduct projects and to sell. I am also very happy that we succeeded in our rights issue. Today, the situation is such that, with the new credit ratings for us and the industry, the credit market is closed to us. This means we must ensure that we have enough money to manage ourselves, which we have done."

Increased network traffic

Network traffic is currently increasing and the addition of subscribers is continuing. This is positive, but we can go even further. Calculations show that if talk time in the European mobile networks increased by 10 percent, which is actually no more than 20 seconds per subscriber and day, this would correspond to three years' subscriber growth, or 30 million subscribers. The idea is far from unreasonable. Today, European subscribers talk far less than in other places. In the US, mobile usage is three to four times higher. Asia is also ahead, a comparison that could be changed by, for example, different pricing.

"Our vision is that the mobile phone should be the personal phone, while the wireline network is used for broadband. There is nothing to say that it must be less expensive to talk on a fixed-line connection than a mobile. It really should be the opposite, since it is cheaper to produce a minute's mobile telephony compared with wireline telephony. Pricing in Europe is based on traditions from the time of telephone monopolies. It is therefore relatively expensive to make calls in Europe compared with the US and many countries in Asia. However, we are trying in different ways to assist the operators in their business. One example is the 'Talk Time Contest', which was conducted by Ericsson in the DACH area, that is, Germany, Austria, Switzerland and Liechtenstein. A huge number of ideas were generated on how talk time could be increased and these are ideas that we are sharing with the operators. I believe that, in the long term, pricing will nevertheless resemble the US model, with the same prices for fixed and mobile telephony. Orange in Denmark has launched a tariff of this kind and provides evidence that this trend has started.

"But, the situation is really such that the operators cannot postpone investments any longer. They must increase capacity already now because the situation is

nearly disastrous in some places. A survey in the UK shows that operators there have big problems – between 15 and 35 percent of calls were blocked during high-traffic periods, compared with a 2-percent block that is considered acceptable in mobile networks. Imagine if this were to happen in the fixed network – that it is impossible to receive the dialing tone if you want to make a call in the middle of the day. It would never be accepted."

In addition to systems, services is now the major source of income, representing a fourth of Ericsson's billing.

"Development within Business Unit Global Services is definitely one of the positive features this year. During the year, we have seen many interesting agreements with Telfort in the Netherlands, Hutchison in Australia and Brazil Telecom regarding network management and other assignments. These are long-term contracts, which adds up to larger and larger operations. Our traditional services have been planning, installation, testing and starting up customers' networks. But now we are also offering advanced consulting services and network operation. These services are welcomed by the operators as they have to review their operating expenses."

Must be best in class

Some time during next year Ericsson will be profitable again, but nobody can say when the market will turn around. However, Kurt Hellström is convinced that it will happen.

"We will return to growth, but it will not be the growth we saw at the end of the 1990s. And we cannot afford to become complacent. We must review our costs at all times. Competition has always been fierce in telecom and this will not decline. We must keep pace with the things that everyone else can do. We must be best in our class.

"The downside of our industry is that we can never rest. As soon as we succeed, we must make new moves, which is why everyone must be prepared for change. Everybody needs to feel secure in their work, but to do this, they must also be prepared that their tasks, colleagues and workplace will not always remain the same."

Strong product portfolio for transmission

Sivert Bergman, newly appointed manager for Business Unit Transmission and Transport Networks, emphasizes the unit's strong product portfolio and broad customer base in his business plan, which also contains several new initiatives.

The Transmission and Transport Networks business unit has two product areas: radio links and transmission over optical fiber, including DXX cross-connect equipment.

"In Opto, we are starting with a business model that is based entirely on a partnership with Marconi and Tellabs," says Sivert Bergman. "This gives us many new products for complex transmission networks as well as a cost-efficient organization that is well matched to the task and the business model."

"We already hold an excellent position in microwave products, since we dominate the market with a market share of about 40 percent. We intend to increase that share, and I believe that we will succeed, since we have several new products."

The new products include a radio link for high-speed SDH transmission and a new node for 3G networks called a traffic node, which can be described most simply as a central network node that receives signals from several links and switches them out into the network. The new node works well in 3G networks together with cross-connect equipment from Tellabs or Marconi.

"These products combined give us an opportunity to sell Ericsson solutions at a higher system level than individual products. We call this Managed Mobile Transmission Networks, since the operator is able to route and control traffic remotely," says Sivert Bergman.

New markets

The market for microwave links and DXX is changing, thus creating new business opportunities. In Western Europe, growth is no longer as strong, while Eastern Europe, the US and Asia are regions with substantial growth potential.

"In China, new frequencies for point-to-multipoint transmission will be allocated in 2003. We look forward to the opening of these bands and see substantial opportunities for selling MINI-LINK BAS for both fixed and mobile networks," says Sivert Bergman.

"Even in the US, where operators have long stuck to cable because it was economically advantageous, the market for radio transmission links is beginning to open as networks grow and more base stations are being constructed in rural areas. We penetrated this market last spring and have great hopes of achieving a breakthrough," notes Sivert Bergman.

Ericsson will also begin promoting MINI-LINK more actively for fixed networks and enterprises. Previously the emphasis was almost entirely on mobile networks.

"The products are the same, but other distribution channels are required," observes Sivert Bergman.

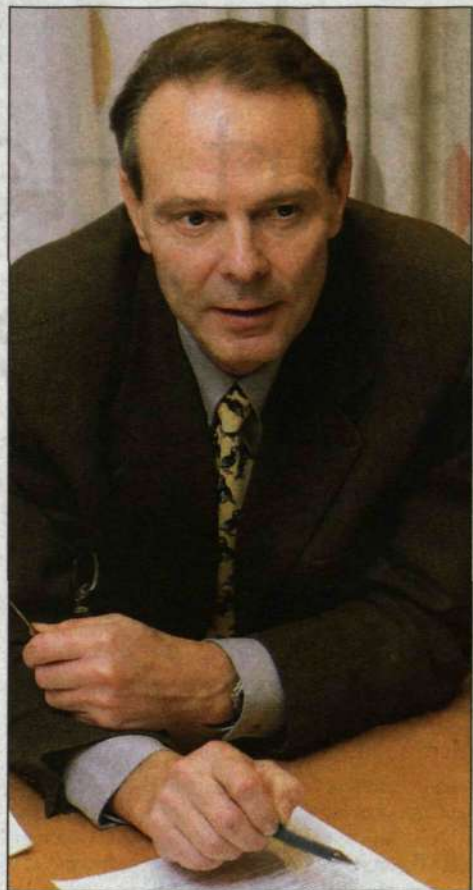
Important customer base for opto

"With opto products, it is very important to take care of the customer base that we have already built up and to concentrate on a limited number of customers and markets," says Sivert Bergman.

The background is that Ericsson announced several months ago that the company would discontinue development of its own products for optic transmission and in future source its optic platform from Marconi, a company with which Ericsson has a long-standing partnership.

A top priority now is supplementing customers' SDH networks with Marconi's advanced WDM (Wavelength Division Multiplexing) equipment. Those customers who have purchased Ericsson's Erion solution for WDM should be able to migrate to the Marconi platform.

"The market for opto has declined in recent years,



Sivert Bergman, newly appointed manager of Transmission and Transport Networks, sees opportunities for selling solutions at a higher system level, instead of individual products.

PHOTO: ECKE KÜLLER

but we have managed this change well and are now entering a period of strategic hibernation," concludes Sivert Bergman.

LARS CEDERQUIST

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More contact for better business

Increased customer contact and better understanding of customer's business will make Business Unit Global Services even more profitable.

"There is so much more with which we can help our customers, if only we listen and can explain in simple terms how we intend to resolve their problems," says Karl-Henrik Sundström, head of Global Services.

Global Services' management recently presented the unit's business plan. It is based on five critical success factors. These factors will ensure that the entire business unit pulls in the same direction and that it achieves the growth targets established by Karl-Henrik Sundström and his management team. The five factors are, in no particular order:

- Focus on customer business.
- Ensure profitable growth.
- One competitive portfolio.
- One cost-efficient delivery operation.
- Act as one toward customers.

"From now on, all work we perform will support at least one of these factors. If any of our operations don't live up to these, then they have no place in our organization," says Karl-Henrik Sundström.

More arguments for salespeople

Karl-Henrik Sundström is satisfied with the way in which Global Services' employees have performed to date. But he adds that if Ericsson is to be the operators' obvious first choice as service provider, the organiza-



The aims of Global Services' new business plan include employees working in a more consultative function. Karl-Henrik Sundström, head of the business unit, wants his personnel to spend more time with customers, thereby learning about their operations and needs.

PHOTO: PELLE HALLERT

tion must act more in a consulting capacity and focus on the customers' operations.

"We must become more aggressive in our methods for selling services. This includes spending a considerably higher number of hours with the customers. We have the expertise, but must be clearer when explaining to the customers what is needed to make their networks more effective and what the results will be."

One of the challenges for ensuring continued growth

is streamlining Ericsson's own sales organization for the sale of services.

"I know that selling services seems unfamiliar to many of our salespeople. Our task is to ensure that they receive sufficient knowledge – and, thereby, arguments – for convincing the customer of the benefits of our offering."

The tool for fulfilling Global Services' business plan is, in addition to the employees, the unit's new AIM product portfolio. This portfolio is organized into three core areas: Advice, Integrate and Manage. All business operations in Global Services are now sorted under one of these core areas.

Dominant in a few years

Global Services' management currently foresees no limit for the business potential in services and support. This is because most operators have considerable needs for assistance in several areas of operation, from training in the new generation of mobile technology to actual network management.

"With more knowledge of the operators' needs and what we can do to help them, I am convinced that our sales and profits will increase in the next few years. We also believe that there will be extremely strong growth for a few of our operating areas."

According to Karl-Henrik Sundström, Ericsson now has the telecom industry's largest service organization, with the best global availability. The target is that the company will be one of the absolute leaders in service and support within a few years.

"The IT companies that have dominated services to date have only slightly more than 10 percent market share. This means that there are very many service providers competing for the customers. But, with regard to the service contracts and market share that we have won so far, I am highly optimistic for Ericsson," he says.

JENZ NILSSON

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Technology is core of CDMA strategy

The goal of Business Unit CDMA Systems is to become one of the three largest suppliers in the CDMA market. This is a strategy that was established earlier and is being repeated in the business plans for next year. During 2002, several important orders were signed, including those with China Unicom and operators in Panama and Colombia.

"When Ericsson stepped into the CDMA market in May 1999, the strategy was to retain existing customers and to develop a leading 3G system. We decided to invest in a new platform for 3G instead of an upgraded solution for the 2G products we had at the time. This was a good decision that gave us a strong position in relation to our customers in terms of technology" says Åke Persson, head of Business Unit CDMA Systems.

The business unit has two key strategies that will lead to the goal of becoming one of the market's three largest CDMA suppliers. The first involves differentiating from competitors by building products on true 3G architecture, which has been achieved with the new platform. The other is to make strong efforts to focus on the possibilities that exist in new companies with no experience of mobile communications, "greenfielders."

"The competition for these new players is certainly incredibly intense, but history has taught us that these companies often base their decisions on product capacity and price. And these are two areas in which Ericsson can compete," explains Åke Persson.

China is and will remain an important market for Business Unit CDMA Systems. This year's order from China Unicom is significant because it comprises all seven provinces to which the business unit previously delivered cdmaOne equipment.

"This means that we are managing to retain business despite intense competition," says Åke Persson.

Latin America is another important area, where



Åke Persson

many operators will migrate from the current TDMA system to 3G and can then choose CDMA2000. During the year, the business unit secured a strategically important order from Vesper in Brazil for 1X EV-DO-equipment for the next generation of CDMA2000.

During next year, the goal is to secure at least one systems contract from one of the major operators in the US.

Another goal is to secure orders in the area of limited mobility. In such countries as India and Indonesia, a tendency toward increased usage of cellular telephony for stationary subscribers with limited mobility is discernible.

Continuing to reduce costs is also an important task for next year.

"Competition in the CDMA market is intense, with Lucent and Nortel as the leading suppliers. Now that our CDMA2000 products are commercially available, we have strengthened our position considerably, which is apparent in the customers' interest in our technical solutions. This is an incentive for us to further strengthen our market position," says Åke Persson.

GUNILLA TAMM

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Contact continues its series about the new slimmer R&D organization. Part one was about the concentration strategy itself, and its effects on the organization. In the next issue, Contact visits a main center and finds out what is involved for the parts of R&D organization that will carry Ericsson into the future.

For this second part of the series, Contact visited Nuremberg to find out how a center is actually shut down, how people are coping, and what happens next.

"It could have been a disaster"

Since 1994, Ericsson Eurolab in Nuremberg has worked on base station development in GSM and WCDMA, transcoders and speech processing for the AXE, media gateways, research in radio access and radio networks and market support. By the end of 2003, the building with its twin towers at Neumayerstrasse 48-50 will be dark and empty.

Word came down from Stockholm in September 2002: Ericsson Eurolab in Nuremberg, Germany, would be among the sites closed due to the worldwide concentration of R&D centers. More than 300 people would lose jobs. Except for a planned outsourcing deal involving between 30 and 50 employees, Ericsson's exit from Nuremberg would be absolute.

The head of the center, Jan-Erik Stjernvall, recalls the initial shock and anger that rippled through him, his employees, and the city.

"I was surprised, because we had done a very good job here. We have very high competence. But looking back, I see that no location was safe because reductions were so large," says Jan-Erik Stjernvall. "Gradually, I came to understand the reasons for the closure and now I think the employees as well are less frustrated and angry than they were at first."

The city was stunned first by the layoff of hundreds of employees from Lucent Technologies. When the announcement was made that Ericsson too would leave, articles in the local newspaper headlined a "great loss for Nuremberg."

Politicians from the city of Nuremberg and the region of Bavaria swung into action to try to reverse the decision. Nuremberg, a city with a long and proud industrial history, had in recent times catered to high-tech companies and often cited Ericsson's presence as a draw for other companies to open locations in the city. Meeting after meeting was held with local and regional Bavarian representatives.

Though the decision was not to be changed, atti-

tudes have slightly. Now, Ericsson and the city are trying to find mutually acceptable ways to take care of the employees who will be left unemployed. Jan-Erik Stjernvall believes that the outsourcing of employees working on projects with Ericsson Mobile Platforms is one happy ending. (An outsourcing partner has yet to be named, but an unspecified number of employees of the Eurolab are expected to be part of a deal with a strategic partner.)

But bright spots are few. "Even though Ericsson has tried to help Nuremberg encourage other companies to come here, there's been no obvious success," admits Jan-Erik Stjernvall.

During the months of closure, Jan-Erik Stjernvall's



Jan-Erik Stjernvall says it's difficult to see the closure of a successful site like Nuremberg. But he understands that Ericsson must cut back in order to survive.

priority list consists of basic issues: taking care of the employees, and transferring competence to the remaining centers.

The nine months' notice that employees have between now and final closure is a saving grace, to complete transfer of competence and for overall morale. "It could have been a disaster," says Jan-Erik Stjernvall. "People could have refused to come to work. But instead, they're helping meet our objectives through the first two quarters of 2003 and they're also able to absorb the difficult truth of losing their jobs."

All personnel contracts end on June 30. "I think that was good for personnel, that everyone leaves at the same time. Then everyone's in the same boat," says Jan-Erik Stjernvall. "Some IS/IT people will stay until September to remove all the equipment. Then just three people will stay to remove the rest of the furniture, clean up, and terminate any remaining contracts," he explains.

The very last to leave will be Anton Pech, facility manager and controller. Among other things, he's hoping to find a new tenant to take over Ericsson's rental contract, which expires in 2016. Though he believes "it's a pity" to leave colleagues and the building, Anton Pech says matter-of-factly, "Life goes on."

Jan-Erik Stjernvall is leaving with the majority of employees, in June. As for what he'll do, he shrugs and says, "I don't know."

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Anton Pech, facility manager at Ericsson Eurolab in Nuremberg, will be the last to leave the office. His last tasks include removing all furniture, cables, and even the Ericsson signs. PHOTO: ECKE KÜLLER

A tough decision

It was with deep regret that Urban Fagerstedt, head of Core Unit Radio Network Development, decided to close development centers in Holland and Germany. "We're struggling. One of the ways we'll survive is by downsizing. Every group is hurting," he says.



Urban Fagerstedt

Urban Fagerstedt wants the employees from Nuremberg to know it's not an issue of competence. "Nuremberg is recognized as very competent. On the other hand, so are the centers in Kista and Mölndal, yet those are much larger and broader when it comes to Ericsson activities and could not be closed."

He means that the closed centers were highly dominated by CRND presence, yet not large enough to threaten Ericsson's deliveries to customers. He's grateful for the smooth transition projects so far, and he has utmost respect for the crews that have continued to give 100 percent of their energy to jobs that will soon end.

"We are still getting help sorting out issues with WCDMA base stations at NTT DoCoMo from employees in Nuremberg and Enschede. Thanks to these employees, there have been no interruptions in activity."

DODI AXELSON

On behalf of the employees

Tina Ganss was the first employee of Ericsson Eurolab Nuremberg, starting on September 1, 1994. The fact that she was the first employee of the development center has inspired her to help others make sure that they get all the help they can before unemployment is upon them.

Tina Ganss is the chairperson of the local work council at Ericsson Eurolab Nuremberg. In Germany, employees are entitled to create such an organization to negotiate terms for working conditions, excluding salaries. It's not a trade union, but a legally recognized form of representation for employees.

Tina Ganss was elected chair of the work council in late November and she has about three months to put employee needs at the top of management priority lists.

She explains her goals. "One is to introduce rules for ongoing work. Those include how employees should be compensated for overtime, that they should be allowed to leave work for job prospects, and legal rules for special cases." When Ericsson comes to an agreement with a provider for the employees to be outsourced, the contract will be read by the work council before it is accepted.

Another is to coordinate with the city and regional governments. A plan is in the works to try to help laid-off employees start their own businesses once Ericsson closes down. "Nothing is final yet," Tina Ganss cautions.

Finally, employees simply need support, which Tina Ganss and the work council gladly give.

She meets weekly with the management team, and the council of nine members also meets weekly. Employees receive a weekly status report from her.

Prospects, however, do look dim. "Other companies are cutting back here as well. If 50 percent of the people here get new work in the Nuremberg area it will be a great success," she says. And there's great regret from this center's first employee. "This business will come back. Our employees were committed to help any way they could. But now, Ericsson is losing loyal employees and important competence."

As for her own future, Tina Ganss says, "I'll get through Christmas like nothing has happened. Then, when New Year comes, I'll face the future."

DODI AXELSON



Tina Ganss is getting through the Christmas season. In the New Year she'll start thinking about what to do once Ericsson Eurolab closes.



Carmelo Astuto and Francesco Conversi from Italy visited Nuremberg to learn all they could from Martin Rettberg. He's handling the transfer of competence about voice processing software for the AXE.

PHOTO: ECKE KÜLLER



Karsten Michaelsen is worried about supporting his family in the future. He wonders if anyone will buy a house in a city where many companies are cutting back or leaving altogether.

Leaving experience behind

The halls of the Ericsson building in Nuremberg still buzz with activity. Engineers are still in their labs, and the heart of the development center keeps pumping. But it's an unsteady beat, at times fueled by determination, disappointment, or acceptance.

Martin Rettberg and Karsten Michaelsen will both be unemployed after June 30 unless something comes up in the meantime. But until then, they're busy helping Ericsson transfer products and competence to centers that will take over what they've done in Nuremberg for seven years.

Martin Rettberg is project manager for the transfer of speech processing software. He's helping the main center in Rome, Italy, take over that product for the AXE. His motivation is low, but Martin Rettberg says he and colleagues are trying to make the best of the situation. "People here still believe in doing a good job," he asserts.

Irony and humor

Black humor helps Martin Rettberg get through the days. To the question, "How are you?" he answers with "Well, today I still have my job." And he notes the irony of the situation that Nuremberg used to be on the receiving end when growth was so great that they re-

ceived competence training from other centers. "It's weird to be on the sending side," he laughs.

Logistically speaking, Martin Rettberg has daily contact with engineers in Rome to arrange database transfer, training for test centers, and more. He's doubtful that the transfer can be fault-free. "Our job will be to mitigate damage as much as possible. Because realistically, a few people cannot absorb the knowledge and experience of more than forty in such a short amount of time."

Italian software designers Francesco Conversi and Carmelo Astuto were visiting Nuremberg recently, to learn what they could in two weeks' time.

"There is a great gap between our competence and their competence here," says Francesco Conversi. "They've been excellent help to us and I'm sorry to see these people lose their jobs."

Carmelo Astuto adds that he feels just as vulnerable as the engineers in Nuremberg. "It's not a good time in the market. Of course as designers, we want to develop

new products, not just take over maintenance. But we must be happy to take what comes."

Radio engineer Karsten Michaelsen has a story similar to Martin Rettberg's. He's passing his competence to engineers in Kista, Sweden. Though he's working to the bitter end, it is indeed a bitter end.

"The decision to close Nuremberg does not match my view of what we did. We were leading edge. Three days before we got notice of the closure, we delivered hardware to GSM EDGE nodes in North America. No delays, no quality problems," he says.

Uncertain future

Karsten Michaelsen is worried about his future. Unless the telecom industry rebounds quickly, he believes he'll have to seek work out of town. That means selling a house in a depressed market.

"We trusted in this business and we settled here. Who knows where I'll find a job next?" he asks.

Karsten Michaelsen says he was ready to help Ericsson become more efficient and work on products for the future. His loyalty now is more with colleagues, rather than with the company. "But I'm a team player, I have good relationships with people and the people in Kista can trust my work," he vows.

DODI AXELSON

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Tower model for development

A study of 50 global telecom and high-tech companies finds some startling, though not surprising, conclusions about the challenges facing the industry. Cap Gemini Ernst & Young (CGE&Y) compiled the information and zeroed in on one particular area to suggest ways to improve revenue. The solution is called the Product Development Nerve Center.

Not surprising is the fact that 56 percent of high-tech companies and an even higher percentage of telecom equipment companies in the study are running at a loss. Startling is the historical perspective of the situation. CGE&Y Vice President John Andrews says, "There have never before been so many high-tech companies in the red."

Companies everywhere face economic hard times. They have to be as slim as possible, yet more productive than ever.

The Product Development Nerve Center is the firm's blueprint for companies to do just that.

"The most significant gains to be made are in Product Development," says John Andrews. "The industry boom in the 1990s was driven by product development. Efficiency in product development was sometimes ranked second in the race to get new products to the market, while other areas like supply chain were made more efficient."

CGE&Y believes telecom and high-tech companies are in the first of a three-phase cycle that will evolve over the next three to five years. Today's phase is called contraction, where companies are removing or consuming excess capacity. The firm expects

the phase to last another six to nine months. Phase two is consolidation, where companies join forces with bigger players – a sort of survival of the fittest; and phase three is massive innovation, attained when the market returns to stability.

"To achieve competitive efficiency, you need to improve in the eight elements that we have identified as key to achieving the Product Development Nerve Center vision," explains John Andrews.

Those are: management team, physical center, metrics, systems, processes, partners, cost, and return on investment.

The Nerve Center itself looks like a three-story tower. The product development management team sits on the top floor. They gather in one physical location and have overall visibility of the product development picture. On the middle level are people who report directly to the management team, but their location can be virtual as well as physical.

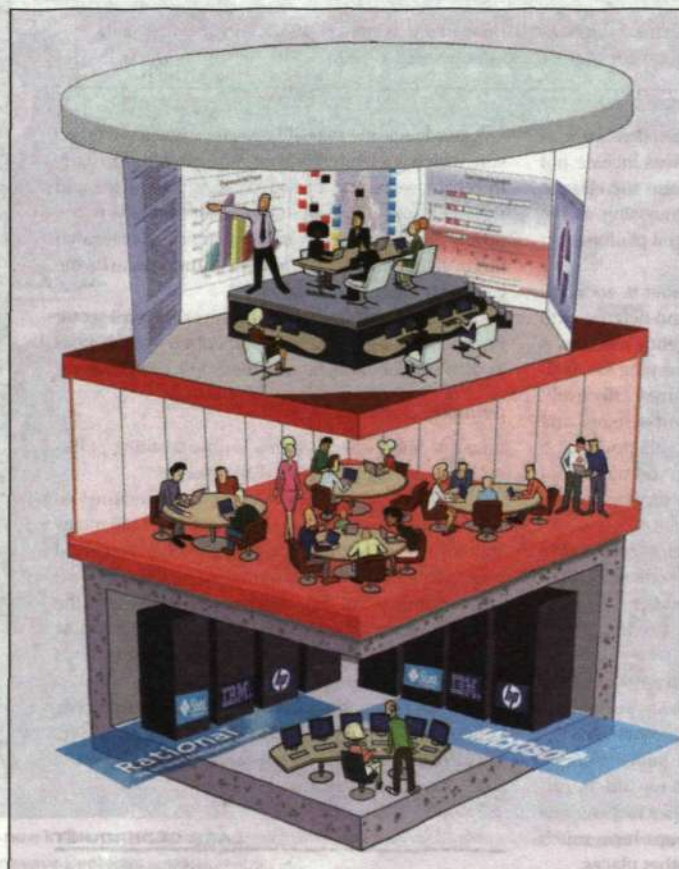
"It includes leadership at a development unit in China, India, Ireland, or wherever," says John Andrews.

The bottom floor is a 'back office' or supporting crew, which can often be outsourced.

Developed in early 2002, the concept has been tested with various telecom equipment and high-tech companies. It has received good feedback and Cap Gemini Ernst & Young is working to sign a customer for the Product Development Nerve Center concept.

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In the Product Development Nerve Center concept, the management team is located on the top level and has an overview of the entire product development cycle. Those who report directly to management are on the second level, and the bottom level consists of support groups, which can often be outsourced.

Nokia lowers sales outlook

Nokia expects lower sales than what they earlier predicted for the year's fourth quarter. CEO Jorma Ollila adjusted the forecast to between 8.8 and 9.0 billion EUR, as opposed to the earlier figures of 8.9 to 9.2 billion EUR.

On the other hand, Nokia is hoping for a profitable Christmas season. In a press release, Nokia writes that: "mobile telephone sales are seasonably strong, but in the early holiday shopping season it seems that mass-volume products are most in demand."

Nokia expects better margins on their mobile phones and aims to increase sales within Networks for the fourth quarter, despite delivery problems of GSM/EDGE to the United States.

France Telecom refinance begins

France Telecom took advantage of investor confidence following a government bail-out, and initiated a bond issue worth up to 2.5 billion euros. The operator is looking to refinance its 70 billion euro debt.

The government is providing the company with a 9 billion euro loan to tide it over until it completes a 15 billion euro capital increase next year. The company's credit rating stabilized following the bail-out. Moody's Investor's Service said: "The current Baa3 rating assumes that any potential review of this facility by the European Union will be favorable."

Recent growth of broadband subscribers

Asia leads the way on the broadband access technology bandwagon. A report from the DSL Forum and London analysts Point Topic counted 30.6 million broadband users globally. Much of the growth is recent – with 5 million new subscribers signing up in the past three months alone – and concentrated in Asia-Pacific and the South-East Asia regions.

"China has now arrived, with two million subscribers," said Bill Rodey, DSL Forum chairman.

Four million 3G subscribers

Japan's second biggest mobile operator, KDDI, has announced that their 3G subscriber rate now has reached four million. The goal is to reach seven million subscribers before the end of March next year, according to an announcement recently made by company President Tadashi Onodera.

KDDI launched their 3G system, based on the CDMA 2000 standard, in April this year.



KDDI's new luminous phone A1101S.

MMS free in Sweden – for now

Swedish operator Telia has launched its Multimedia Messaging Service (MMS), free for its current subscribers who have an MMS-enabled phone. MMS enables callers to send and receive images, sound and text on their mobile phones. The service will be free of charge until February 15, 2003.

Kelly Odell, head of Telia Mobile Sweden, is hoping MMS will be a popular way to spread holiday cheer.

"Our customers can send a Christmas card to their friends and relatives with a photo of their newly trimmed Christmas tree," she says.

New applications for radar sensors

"Military development has become more like civilian development in recent years," says Erik Löwenadler, president of Ericsson Microwave Systems in Mölndal, Sweden. "We see network-based defense systems much like civilian products, and our radar products will have an even greater market in the future for civilian surveillance tasks in disaster areas and coast surveillance, for example."

For nearly 50 years, Ericsson Microwave Systems has been leading technical development of radar sensors for military applications, particularly in aviation. Today the company sells both land-based and airborne radar surveillance systems and is also working with new network-based IP systems.

During all these years, the company has worked closely with the Swedish military and continues to do so. Some 70 percent of its products are exported to Greece, the UK, France and the Nordic countries, as well as to Southeast Asia and Latin America.

The head office is on a hill on one of the highways leading to Gothenburg in a facility that it shares with the new production plant. The plant produces complete radar systems all the way from small components to the ten-meter long ERIEYE airborne surveillance radar and the crane-like GIRAFFE surveillance radar that is mounted on a trailer truck. These are not mass-produced products. Instead, a small number of customer-specific products are produced each year.

Long experience of complex systems

Just under 2,000 persons work at Ericsson Microwave Systems. Many employees are engineers with long experience of the complex systems that the company produces. Last spring, Ericsson broke out the civilian components from the company, including MINI-LINK, which is an important component in mobile systems, and all other operations relating to mobile systems. The defense operations remained within the company, which several years previously broke out all space operations and merged them into Saab Aerospace.



Erik Löwenadler believes that various types of surveillance is a market with future potential.

"Our technical expertise is regarded as top class, and when it comes to airborne radar, I think you could say that only the Americans are ahead of us," says Erik Löwenadler. "Many companies want to partner with us, and it is important for us to stay on the leading edge, particularly since that is a prerequisite for continued participation in international projects."

The company's largest competitors are the British company BAE and the US companies Raytheon and Lockheed-Martin, each with some 200,000 employees.

The collapse of the iron curtain just over ten years ago created new prerequisites for the military balance of power. The EU has grown through increased European cooperation. With its

EMW PRODUCTS

ARTHUR, ARTillery HUnting Radar, scans the horizon and detects projectiles, meaning localizable enemy artillery fire, and controls the counter-fire artillery. Two or three units are sufficient to cover a war zone. The first contract was received in 1996, and ARTHUR has since been delivered to the UK, Greece and the other Nordic countries.

ERIEYE is an AEW&C (Airborne Early Warning and Control) system. The radar, which is about ten meters long, can be mounted on the top of most types of aircraft. The first ERIEYE was delivered in 1996, and it is now in use in such countries as Brazil, where it is used to monitor activity in the huge Amazon region.

GIRAFFE is a mobile surveillance radar that uses multi-lobe technology to enhance performance. It can be taken into operation in just minutes and functions as a command center. This product has been delivered to Sweden and France.

JAS Gripen's PS-05A nose radar can track targets in the air and on the ground. Development of the



Gripen radar began in 1982, and the first units were delivered in 1993.

high level of technical development, Sweden is one of the six leading countries. Research areas include not only advanced aircraft systems, but also surveillance systems for detecting forest fires, smuggling in the Amazonas, illegal mining operations, oil platforms, et cetera.

The US has changed since September 11, 2001 and is focusing on such areas as homeland defense with links to the Coast Guard and emergency services. A network-based defense system is emerging in which it is essential to use military resources effectively. These defense systems are based on sensors and civilian technology, such as IP, 3G, Bluetooth and W-LAN, which can coordinate attack and command systems through multi-functional services, while making them non-vulnerable.

"Developing new systems is extremely expensive today, and in most areas, we cooperate with both Europe and the US," says Erik Löwenadler.

Swedish model a success factor

Asked what has made the company so outstanding in radar, Erik Löwenadler pauses before answering that several factors come into play. Most important is the close cooperation with the Swedish military, which has defined requirements and placed the orders. Another factor is the Swedish model in which hierarchies are less strict and project groups have much broader assignments than in many other places.

A third factor is that the company is part of Ericsson, which is a leader in technology and, particularly in recent years, has provided many incentives and expertise to defense operations. Historically, it has otherwise been more common that defense research has been at the forefront, and this continues to be the case with respect to radar.

"Starting in the mid-1990s, however, the civil sector has been driving technology, particularly in such areas as data and miniaturization," notes Erik Löwenadler.

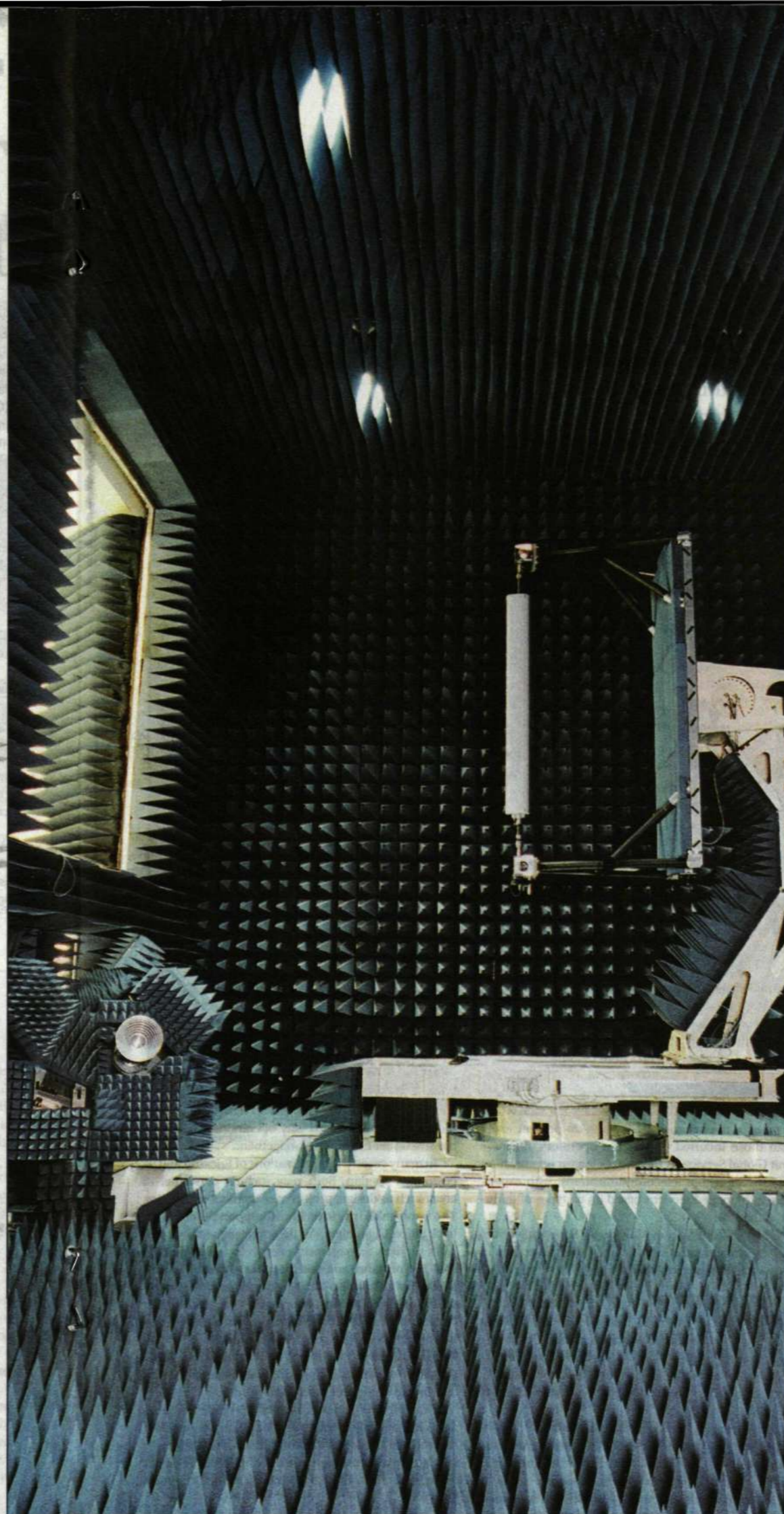
Awaiting decision

Ericsson Microwave Systems is now awaiting political decisions regarding Swedish defense.

"For a number of years, the nose radar and the system computer for JAS 39 Gripen have been the mainstay in our operations. Each year, we have received orders totaling several hundred million for system enhancements. By 2007, however, we will make the final deliveries on current orders, and we are now looking for a large, well-defined project that extends beyond 2010," says Erik Löwenadler.

The other major parts of Ericsson Microwave, which are ARTHUR, GIRAFFE, CARABAS and ERIEYE, are of a different nature. They are extended on a more short-term basis from order to order.

LARS CEDERQUIST
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The new indoor antenna range, which cost some SEK 30 million, will increase measurement capacity at Ericsson Microwave Systems.

PHOTO: HENRIK GRÖNBERG

Without parallel in Europe

At the end of November, Ericsson Microwave Systems AB in Mölndal, Sweden, took Europe's most advanced indoor antenna range into operation.

"Antennas are a vital part of Ericsson systems and a first-class testing facility is essential for our development work," says Erik Löwenadler, president of Microwave Systems.

Measuring 22 meters long and 11 meters high, Ericsson's new indoor test range is capable of measuring all types of antennas and antenna systems, from the 800 MHz band used for mobile telephony up to tomorrow's 75 GHz microwave links. In fact, the only product it can't handle is ERIEYE, the huge radar used for air surveillance.

Costing some SEK 30 million and based on equipment from the German company Orbit FR, the test range took a couple of years to build and calibrate, but provides a number of advantages. It replaces Ericsson's previous antenna ranges, including outdoor ranges of up to 1,100 meters. The test environment is excellent, with low signal levels and a radio environment completely free from interference. Changing test objects can also be accomplished very rapidly, and different types of antennas can be measured. In addition, the test facility will be available for use by others, since it has been certified by the Swedish Institute for Testing and Research, which will be able to perform measurements for anyone who needs antenna type approval.

"We have not only focused on high measurement accuracy and reproducibility, but also on logistics, so that we can perform measurements in a matter of minutes, rather than hours," says Anna Johannison, manager for antenna and microwave technology.

The entire building is designed for antenna testing. Antenna objects, which may weigh up to 700 kilograms and be as much as three meters long, are taken in on the ground floor and hoisted up to the next floor where all preparations take place before the antenna is pushed into the measurement chamber and mounted on a five-axled rapid rotating table with an unparalleled 0.005 degree precision, an important factor for performing reproducible measurements.

Inside the measurement chamber, a feeder placed on the floor transmits radio waves that are directed toward a reflector made of three aluminum segments each weighing 1.5 tons and covering virtually the entire wall. The radio waves are reflected so that the radiation is concentrated on the measurement object, meaning the antenna. The rotating table allows antenna diagrams with different directional patterns to be obtained.

"Temperature and humidity in the chamber are controlled and regulated so that the temperature varies no more than 2°C and humidity by ± 5 percent," says Pär Bengtsson, the project manager who was largely responsible for the test facility's design.

LARS CEDERQUIST

An increasingly important part of Ericsson's business activities is to assume management for all or parts of the telecom operator's networks. More than 35 operators have already signed contracts for network operations. The concept of suppliers taking over total network operations is however relatively new. In 2002, Ericsson has signed three contracts for operations of complete networks. The strategy is based on efforts by all contract parties to increase operating efficiency and cost effectiveness by concentrating on their respective core business activities.

Driving force for managed services

When new operators were established in the mid-1990s, several of them needed help in starting up their networks. Ericsson offered to build, manage and then gradually transfer the networks to the operators, a process that enabled Ericsson to acquire knowledge and experience in operating networks.

Many operators are struggling today with slower growth, forcing them to concentrate all their resources on efforts to maintain favorable relations with subscribers and launch attractive services. The situation offers Ericsson an excellent opportunity to expand its activities in the service market.

"Today, both new and old operators are seeking opportunities to outsource network operations in order to concentrate on their core business activities," says Johan Wibergh, head of Ericsson Managed & Support Services.



Johan Wibergh

Johan Wibergh cites three main reasons why outsourcing has become an interesting business alternative for telecom operators.

"One reason lies in financial pressure on operators to improve their finances, and postponing investments is no longer enough. It's also imperative for operators to do whatever they can to keep operating costs down. Furthermore, the entire concept of their business has changed. It is no longer based on offering SIM cards and networks for voice traffic. 3G is only a prerequisite today for staying abreast of new development and marketing a number of attractive services. A third reason is inefficiency in the way they operate their networks. After

a period of enormous growth, it is difficult to adjust and trim their organizations to meet new market conditions. Many operators lack the economies of scale that would otherwise enable them to maintain satisfactory cost efficiency in their network operations."

Ericsson has a global organization. Through economies of scale, such as the capability to manage several networks from the same facility, Ericsson is able to operate the networks at costs 15-20 percent lower than those incurred by telecom operators. Business Unit Global Services is the world's largest organization for services within telecommunications, with experience in managed services based on all types of different standards.

"The goal for Ericsson Managed & Support Services is to be the customer's first choice when it comes to outsourcing managed services."

Growing and growing

The activities of Business Unit Global Services are assuming increased importance for Ericsson, and outsourced network operations is the most comprehensive service offering. In the long-term perspective, outsourcing will become a highly profitable business activity.

"These are long-term contracts, up to seven years in some cases, and they will eventually generate substantial revenues for Ericsson. We also offer other services. If we manage the operations of a customer's network, we also create a closer partnership with the customer, which improves our potential to sell more equipment and services. We acquire hands-on experience in the equipment's functionality and are able to provide feed-

back to Ericsson's research units and our own product development personnel. In the next stage, this advantage will provide greater functionality and stronger competitiveness," says Johan Wibergh.

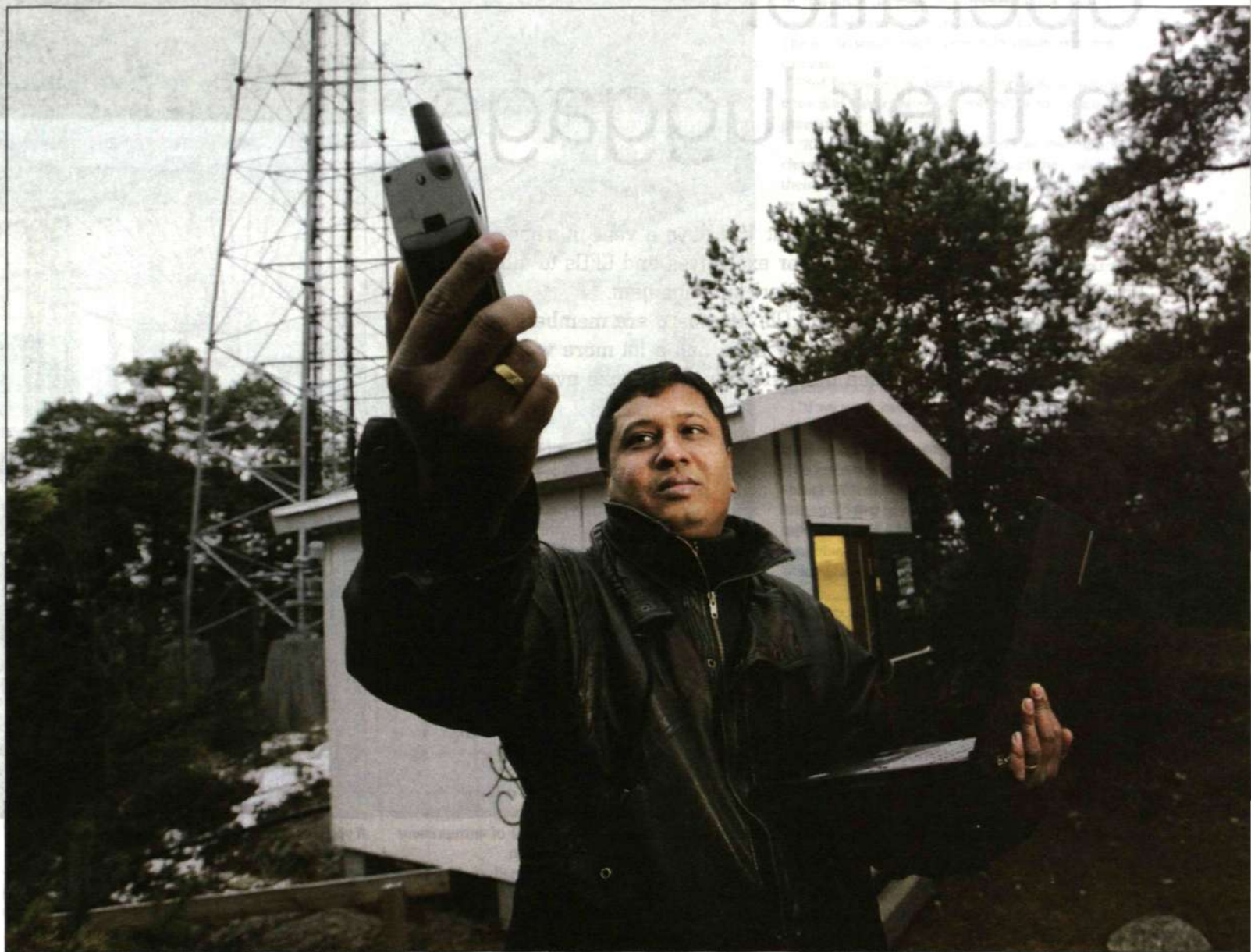
Several reasons for cheaper operations

What is it, exactly, that makes Ericsson's offering attractive? Patric Lind of Managed Services explains that there are several reasons why operations are less expensive under Ericsson's management.

"In many cases, the organizations of Ericsson and its customers overlap. Both may include personnel in areas such as design, project management or logistics. The same holds true in technical support functions, or back office. Customers should not need their own network services management experts to evaluate Ericsson's performance and, with the end-customer as a reference point, it is also totally unnecessary. We guarantee the quality of services supplied by operators to their end-customers in all outsourcing agreements signed between Ericsson and telecom operators."

Ericsson helps customers derive maximum functionality from their existing equipment, and the service also provides greater cost efficiency.

"Our global organization is able to move resources and keep our bright minds working, since we operate networks in all parts of the world. The same advantages that are created through outsourcing in the IT sector are achieved by conducting our business activities on a large scale."



Ericsson's offering in managed services includes core, radio and, to some extent, service networks within all standards, and from different suppliers. Systems integrator, Viktor Kumar, tests a customer's capacity.

PHOTO: GUNNAR ASK

Capturing a growing market

Continued growth characterizes the total market for telecom services. And although the market for services reflects rapid growth, demand for network operations is growing even more dynamically.

Stefan Jelvin, head of strategic marketing within Global Services, studies development and trends in the market for service, and his findings are used both internally within the business unit and externally in Ericsson's communications.

He says the value of outsourced services by operators to other companies, such as Ericsson, is about the same as total investments in the mobile infrastructure.

"The entire service market is expanding. Growth is evident both in terms of what operators are doing

themselves and the services for which we compete. At the present time, only a small part of the market for managed services is available to us. Ericsson's potential to capture market shares is increasing, however, in parallel with efforts by operators to concentrate on core business activities. The market for network operations also shows stronger growth than the rest of the service market," says Stefan Jelvin.

IDC analyst, James Weir, agrees. He says telecom operators are under strong pressure.

"Operators will focus all their strengths to generate increased value for their subscribers. Networks are based on standards and do not comprise an area in which operators can profile themselves to their customers. Ericsson knows its own equipment, and will be able to manage it better than anybody," says James Weir.



Stefan Jelvin



James Weir

JESPER MOTT

Network operation in their luggage

They travel the world, spending about 150 days a year in transit. They are ushered into the offices of senior executives and CFOs to talk about Ericsson's business concept for network management.

Bo Lundqvist, Ole Jörgensen and Ola Svanberg are members of the Outsourcing Engagement Team. They have had a lot more work since O2 in the Netherlands decided that Ericsson should take over its entire network operations.

Ericsson must effectively describe how an outsourced network can make the operators' business more efficient and reduce their costs. This is where Bo Lundqvist, Ole Jörgensen and Ola Svanberg come into the picture. They are three of the eleven members of the Outsourcing Engagement Team. The team's main task is to sell the business concept of network management to operators.

Today, advanced business discussions are conducted with many customers throughout the world. The future looks bright – Ericsson believes that the network management area has major growth potential.

Future success will require close cooperation with each market unit and local company. The team's work is largely based on transferring as much knowledge as possible about network management to the market organizations – they are, after all, the ones who will conduct these operations.

"The Key Account Managers at the local companies with which we work must be 100 percent positive to what we do. They are the door-openers to the customers. We can teach the market units a great deal about network management and operations, while they have crucial knowledge about the local market and the customers," explains Ole Jörgensen.

Bo Lundqvist, Ole Jörgensen and Ola Svanberg agree on the recipe for future success.

"For a long time, we have been working with the customers and have trained them and employees at the market units in this area. The entire organization must now work extremely hard to be able to secure as many contracts as possible," says Bo Lundqvist.

It is important now, and in the future, that the market units and Outsourcing Engagement Team work in accordance with the same guidelines in an organized manner during the contract period.

"You could say that we are advancing from the pioneering work when this area was new, to ordinary, more structured working days," comments Ola Svanberg.

The persons who work within the group have long experience of various areas within Ericsson. They can be described as senior consultants. They must understand the technology and have the ability to explain new opportunities for rationalizing operation of the customer's complex system.

Despite many days on the road and long working hours, all three agree that the team's work is highly stimulating.

"The best aspect of this work is definitely the customer contacts and creating new solutions for various customers. There is a large amount of entrepreneurship in this work," says Ole Jörgensen.

"Our job is highly creative. Personally, I enjoy being involved in developing positive long-term relations between the customer and the market unit," Bo Lundqvist continues.

"The most fun aspect? Definitely the ink on the paper," says Ola Svanberg, referring to the signing of contracts.

ULRIKA NYBÄCK

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PHOTO: PELLE HALLERT



If you look up the word "engagement" in a dictionary, you can find such synonyms as undertaking, relations, duty or promise. This is a rather good description of the core operations of the Outsourcing Engagement Team. Bo Lundqvist, Ole Jörgensen and Ola Svanberg know most of what there is to know about operations and rational network management. They travel the world to explain Ericsson's business concept to operators. At the moment, they are meeting extensive interest.



HOW THE OUTSOURCING ENGAGEMENT TEAM WORKS

- A salesperson at a market unit calls someone in the team and says that the customer wants to know more about Ericsson's offer of efficient network operations.
- The team is invited to visit the local company for an internal meeting and an initial presentation.
- Those who work within the team find out everything that could be of interest to the customer. How can they make their operations more efficient based on Ericsson's offer?
- An initial meeting with the operator. Most

often a presentation for the president and the Chief Financial Officer.

- A preliminary study results in a report, in which Ericsson suggests a number of improvements to operations that will lead to a reduction in the customer's costs.
- The operator's Board makes a final decision.
- Contract is signed.
- Ericsson takes over and provides further training for the operator's employees.

The entire process takes about a year.

Spotlight on people

In the end, outsourcing is about people, and it's only natural that concerns are created by major changes. The key to success lies in carefully planned communications.

Olof Renström is head of personnel, communications and other questions related to the outsourcing process.

"It's natural for people to worry as they approach change. Many people are also afraid they might lose their jobs as a result of rationalization. Everybody senses a lack of information until they get an answer to the question: How will this affect me?"

He also mentions other issues critical to the success of the process. Everybody has the right to uniform and concise information. It's important to remain one step ahead and plan all communications in cooperation with the customer before the agreement is announced. Personnel questions and communications must go hand-in-hand. Spokespersons must be trained and synchronized.

"If we work carefully with the information we provide, personal concerns will gradually be transformed into trust. Operating engineers are cost items for telecom operators; for Ericsson, however, they are core elements in the business agreement. They are also an important part of Ericsson's global network of skills and expertise," says Olof Renström.

JESPER MOTT

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Customer retains strategic control

When the contract is signed and the operator decides to transfer network operations to Ericsson, Malcolm Triggs and his colleagues take over. They bring their global expertise in Managed Services and transfer all responsibility for network operations to Ericsson.

"Customers trust us, but it's also important for them to retain control over strategy issues and technology investments," says Malcolm Triggs.

In addition to responsibility for methodology and processes, the Network Operations Delivery Organization also helps Ericsson's local companies structure and implement the solutions.

"We manage the network, either from the customer's site, or after transfer of operations to one of Ericsson's facilities. In some cases, we create synergies by operating several networks from the same facility. The customer decides and chooses the solution that generates the greatest cost savings."

Total responsibility

The operators generally retain ownership of their hardware. In addition to personnel who operate the network, Ericsson assumes total responsibility for network functionality. This enables operators to concentrate on

core business activities, such as marketing, customer relations and contacts with authorities.

Operators today want help with more aspects of managed services than core and radio network operations. Michael Bäckström, head of system integration, says there is growing demand for help with operations of service networks, platforms for data services and applications.

"Service networks are expanding in parallel with the growing number and increasing complexity of data services. Demand is growing for our services to build the parts of service networks most closely connected to telecom. Over the long term, this means we will also be able to manage them. The contract with Hutchison in Australia is a good example," he says.

Foundation for undertaking

Malcolm Triggs explains that a contract contains a Service Level Agreement, which is the foundation for Ericsson's undertaking. It is based on so-called Key Performance Indicators, KPI, which, in turn, are based on standards within the industry, with end-customers as the primary point of departure.

"There are two KPIs that form the foundation of Ericsson's undertaking: end-user satisfaction with the

quality of the operator's network and optimal utilization of the network," says Malcolm Triggs.

The customer should not need its own network service experts to evaluate Ericsson's performance and, with end-users as the yardstick for gauging performance standards, neither is it necessary. To guarantee operator satisfaction, Ericsson and the operator appoint a control group comprising representatives of both parties to handle important decisions.

"Operators retain some technical expertise in their purchasing organizations, which enables them to maintain strategic control."

When network operations have been started and reached satisfactory functionality, the market unit assumes responsibility for the activities. However, Malcolm Triggs and his staff maintain contacts with the customers and cooperate on a continuous basis with the market unit.

"Ericsson's global experience, methods and tools make our offering extra strong. We constantly strive to improve our services and make them more cost-effective. You could say that customers buy our global dynamics."

JESPER MOTT

Cooperation best approach

Ericsson is not alone in recognizing that managing networks on behalf of operators is a new business opportunity.

Both competence and a strategy are needed to become established as one of the major players in this niche.

"This is an extremely tough market which requires that we have a very clear idea of all the market components, particularly the competitors involved," says Johan Wibergh, head of Managed Services within Ericsson.

The work of identifying competitors and establishing what they do is mainly handled by the Outsourcing Engagement Team unit (see article, page 16). Johan Wibergh feels that his organization currently has a good idea of the main rivals involved and the services they offer in relation to Ericsson.

"It can generally be said that we meet varying types of competitors, depending on which part of the managed services chain one looks at," he says.

Within Network Build and Network Operation,

Ericsson competes against classic network suppliers, such as Nokia, Siemens, Alcatel and Lucent.

"They are organized like us and offer similar services. Ericsson's advantage lies in our more mature service offering. We first built and operated networks for operators on a relatively extensive scale seven years ago, when the building of national networks was deregulated in many countries. This has provided us with good business references for the future," he says.

Ericsson also competes against strictly service-oriented companies. America's Wireless Facilities, Inc. (WFI) and LCC International hold substantial shares of the network-operations market, while Ericsson's partners, such as Flextronics, are also dominant in the area.

"Our main competitive edge over these companies is that we have the sector's largest service organization. This gives us a global presence and enables us to manage operators' networks far less expensively than traditional service companies."

Ericsson meets its third group of competitors in the Content Applications and Services sector.

"This is where we come up against the large IT companies, such as IBM and Accenture, who are both competitors and potential partners for us. But while they are experts in marketing and outsourcing, they completely lack Ericsson's economies of scale within the areas of network roll-out and network operation," he says, and adds: "We must seek cooperation partners whenever this is possible. To date, we have functioned as a strong, independent player but I believe that in future the importance of cooperative efforts in this sector will increase, and that will apply to all players."

JENZ NILSSON

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Ericsson has set up a Network Assurance Center in Kista to monitor the pilot operation of a joint 3G network for Swedish operators Telia and Tele2. The network is becoming increasingly stable but a lot more work is needed before the system can be launched commercially.

PHOTO: TOMMY JOHANSSON

Pilot operation – the acid test

A pilot network-operation contract is an excellent opportunity for Ericsson to demonstrate its competence to customers. Currently, an extensive pilot trial project is being conducted on a joint 3G network for Telia and Tele2 in Sweden.

Ericsson has set up a Network Assurance Center (NAC) in Kista, with a staff of 15, to operate, improve and develop Telia and Tele2's 3G network prior to its commercial launch.

Operation of the network was started in March 2002 as per an agreement entered when Svenska UMTS Nät AB (Telia and Tele2's joint company) selected Ericsson as its sole supplier of 3G in mid-2001. Currently, several hundred base stations are connected and are monitored constantly by Ericsson personnel.

"The base stations are located throughout Sweden and via the center we coordinate everything that happens in the network. In addition to the automatic alarm system, we have about 30 field operatives who report any net faults to us," says Bengt Esterberger, manager of the Kista center.

The NAC is divided into two different departments: a front office and a back office. The former receives fault notifications, analyses alarms and solves any problems that do not require advanced help. If the fault is more serious, specialists from the back office are brought in.

"The challenge in managing a 3G network is that we need to be competent in three technologies: radio,

telephony and data communications technology. This means that we are forced to work across three technology boundaries whenever a problem is encountered. That's when it's a major advantage to have a team assembled in one place, where they can discuss matters and solve the problem," says Bengt Esterberger.

Constantly updated

The computer screens in the NAC show constantly updated data to identify base stations that have lost calls, how transmissions are functioning, and to provide volumes of additional customer-requested parameters. In addition, the entire network is updated with new software each month.

Contact with Telia and Tele2 is maintained via a joint computer system and frequent check-off meetings. Bengt Esterberger has noted a distinct improvement in the network during the nine months the pilot trial has been in progress.

"I find the rate of improvement very reassuring. New-product releases are literally being pumped out, which means that the stability of the network is constantly increasing. There are still many issues to be resolved but we are definitely on the right track," he says, and continues:

"The best thing about this kind of contract is that we are learning more about our customer's needs, sometimes even before they are known to the customer. We

are building up an expertise in this area that will be invaluable as a sales argument in the future."

A major success

Currently, no one can say exactly when the network will be put into commercial operation, or who at that time will be charged with its operation. Staffan Henriksson, Ericsson's KAM for the Svenska UMTS Nät AB, considers the project to be highly successful.

"Operation of the network is a business deal in itself, but it is also an excellent opportunity to demonstrate to our customers that we have the competence to manage 3G networks. This will enable us to secure more management projects in future," he says.

Henrik Ringmar, president of Svenska UMTS Nät AB, is pleased with the management of the network to date.

"We are at the stage where it is important to make the network sufficiently stable for commercial traffic. We can already see that it is becoming increasingly stable and my information is that the project in Kista is progressing according to plan," he says, and adds:

"Should it be demonstrated that Ericsson can manage this in a significantly better and less expensive manner than ourselves, then outsourcing of network operation becomes a very attractive future option."

JENZ NILSSON



Saab's 9-3 Sport Sedan is attractive, powerful, fast and safe. And it offers an added advantage compared with many competing car brands: integrated mobile telephony with Bluetooth.

Bluetooth – latest trend in car industry

Mobile technology is making inroads into the automotive industry as more manufacturers of premium brands are starting to install integrated telephony and Bluetooth solutions in their cars. Saab is one of the pioneers, and *Contact* has seen a preview of the future model.

In a way, the circle has been closed. We all remember how the first mobile telephones were mounted in fixed positions in cars more than 20 years ago – mainly due to size and weight. Today, there are other reasons for Saab and other manufacturers to integrate telephones in new car models:

"Mobile telephones in cars offer increased safety, which is one of Saab's fundamental philosophies. We want to eliminate the possibility of outside distractions that might divert the attention of drivers and, for this reason, we have built in a powerful telephone equipped with Bluetooth technology," explains Patrik Lundblad, Saab's development director for infotainment and telematics.

The new 9-3 Sport Sedan is Saab's flagship, in terms of both mechanical and electronic engineering. The center of the dashboard contains a large display panel from which the driver controls the radio, CD, navigational equipment and the mobile telephone – all from a single keypad.

Shark fin antenna

The telephone module itself is situated under the rear shelf in the luggage compartment and features an attractive shark fin-shaped antenna on the roof. It provides better reception than mobile handsets. All functions are accessed through the large and visible push buttons on the control panel, which also make the telephone easy to use.

In addition to the large display panel, a high position display is mounted on top of the dash board, which enables drivers to keep their eyes on the road while checking a telephone number or radio station settings.

The telephone can also be controlled by voice commands, thereby eliminating the need to press the numbers manually.

Initially, the Bluetooth system is being used for headsets, but other functions will be introduced in the future.

"Headsets enable users to talk on the phone also when they are outside the car, for example while they are filling the gas tank or getting something out of the trunk. The headset can also be used for private conversations when drivers have passengers in their cars and do not want to use their loudspeaker system. But these are only the first stages of development. Bluetooth will eventually be used to synchronize the user's telephone book with a conventional portable telephone or to connect a portable computer," says Patrik Lundblad.

Services via help centers

The telephone modules in the cars are supplied by Ericsson. Beginning in the spring of 2003, customers in Europe will be able to choose GSM modules for installation in their cars. In North America, however, where the analog Amps system is used, integrated telephones will be a standard feature.

Customers in North America, and particularly in the US, are offered services via call centers. Supported by telematic services and GPS-positioning, car owners are able to request services and assistance with everything from help in finding their cars in the event of theft to ambulance services in the event of an accident.

"If a driver becomes sick, he/she can press an alarm button on the dashboard, which automatically transmits an emergency signal and information on the location of the car to the call center. This also enables the



Patrik Lundblad of Saab demonstrates the special features of Bluetooth in the Saab 9-3 Sport Sedan. He believes that most car manufacturers will offer similar applications as early as next year.

PHOTO: SCOTT LAKEY

call center to call back and find out exactly what type of assistance is needed. There is also an airbag notification function which transmits an alarm signal when an airbag is deployed," says Patrik Lundblad.

Users can even request remote assistance that unlocks the car via the built-in telephone if the user has forgotten the keys.

Bluetooth and integrated telephony will be introduced in Saab's 9-3 Sport Sedan in 2003, first in Europe and then in the US. In parallel, competing manufacturers such as Renault, Chrysler and BMW are developing similar solutions.

"People who buy our cars want the latest technology. And the current trend is Bluetooth. Next year, I believe that most automotive manufacturers will offer some form of Bluetooth technology in their cars," says Patrik Lundblad.

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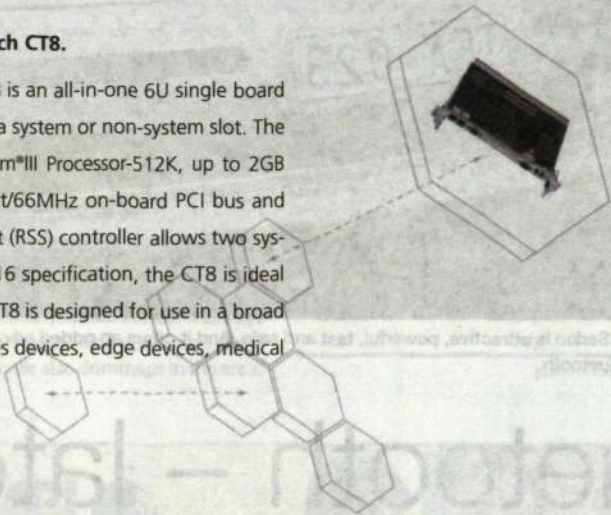
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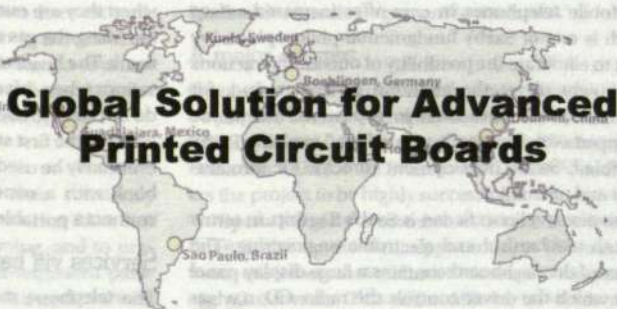
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APG40 jump-starts new AXE generation

A key component in the new AXE 810 product generation is the APG40 (Adjunct Processor Group), which offloads the central processor by taking care of network control, charging and statistics. Several new AXE 810 nodes, which are now being configured for mobile switching and other applications, are shipping to customers with the APG40 installed.

"Reliable and well-functioning payment systems, comprehensive statistics for all calls and simple network monitoring are among our customers greatest concerns," says Jan Svennerholm, product manager for AXE I/O systems. "The new APG40 unit provides all of this and is roughly ten times more powerful than our existing IOG20 unit."



Jan Svennerholm

Ericsson is currently shipping two APG40s per day from its plant in Östersund, Sweden. One or two units are included in new AXE nodes or replace older IOG11 or IOG20 units in existing nodes.

Considering that there are currently about 15,000 AXE nodes installed around the world and used as switches in fixed networks, mobile switches and control units for base stations and HLRs and that Ericsson will undoubtedly deliver at least as many AXE nodes over the next ten years, the APG40 and its successors have excellent potential.

Secure point in the network

The APG40 is an extremely vital component for the operator. If the network loses power, the APG40 saves all information in mirrored hard disks with a capacity of 18 GB before it loses power itself. This corresponds to nearly a week's billing information and can contain statistics for as many as 50 million calls. No operator wants to lose this information.

The APG40 can also handle real-time charging within a few seconds. This requires a considerable amount of signaling but is becoming increasingly important as prepaid services gain in popularity.

The APG40's other main task is to handle communication for network control and to monitor network nodes. The operator handles network management from OSS centers that communicate with the APG40 units in AXE nodes via a dedicated data network. Because the APG40 is based on the

Microsoft Windows NT 4.0 operating systems with double processors and communicates using TCP/IP over double data lines, Ericsson is able to add redundancy and security functions that guarantee that the operator will never lose control over the network.

A third function is to collect statistics. Every five minutes, the APG collects nearly one million statistics from the AXE, which are packaged and forwarded.

Outsourced and refined

The APG40 is outstanding in that the entire architecture is outsourced and based on open Windows interfaces with powerful enhancements for telecom. This is both economically advantageous, compared with developing everything in house and means that training new personnel for network operations is both easy and fast, since Windows is familiar to all.

"There are some people who view Windows NT skeptically, but we have taken the best of Windows and added a number of characteristics that make it just as reliable as the normal telephone network, which is usually given the prestigious label telecom grade. The APG40 is also protected against viruses and other attacks through encryption and other techniques," says Jan Svennerholm.

The previous-generation product IOG20, which at the time of its introduction in 1997 was regarded as state-of-the-art, was based on technology from 1985. Pascal was used as the programming language (before C came into vogue), and the processor family has since been discontinued.

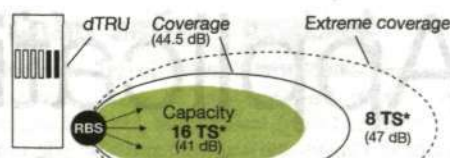
"We were thus forced to make radical changes and decided to take this path," says Jan Svennerholm.

The new AXE 810 product generation is now being introduced in the market. Due to the widespread hesitancy in the telecom market, large volumes are not yet being shipped. Instead the new product is gaining ground on a broad front. AXE 810 with APG40 has thus far been delivered to North and South America, Asia and Europe.

It is also being used in all types of systems: GSM (New York and Dallas), WCDMA (Japan and Spain), CDMA (Chile) and fixed networks (Great Britain). The first installation in which it is fully operational is a multi-service network in Reading in the UK.

LARS CEDERQUIST

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* TS=Time slot (GSM 1800 & 1900 MHz)

Flexible upgrades

Ericsson's new 2206 and 2106 (indoor and outdoor) GSM base stations have a number of qualities that probably make them the best on the market. In two previous articles, *Contact* has described how the base stations were designed to be extremely power efficient and how their design enabled a rapid market launch. This article focuses on how it is possible to upgrade existing sites optimally to reduce the need for new sites.

Operators, with their shifting requirements for capacity and coverage, should be able to handle changes at minimal cost by simply upgrading existing radio base stations with software and installing new dTRU transceiver units, instead of creating new sites, which would be very expensive.

The core component in Ericsson's solution is the dual dTRU, which contains two transceivers and a hybrid combiner (which handles the entire frequency spectrum) integrated in a single unit, thus providing unique opportunities to improve coverage and create new configurations. Because two transmitters are integrated in a single unit, they can either transmit as two TRUs with normal power and 16 time slots or as a single TRU with 8 time slots and double power.

The illustration shows the standard size of a GSM cell and how the operator can obtain greater coverage with fewer time slots by enabling the TCC (Transmitter Coherent Combining) function in the dTRU to produce the dashed coverage pattern. The smaller green oval shows how an extra dTRU can be added to handle uneven traffic distribution using a function called Smart Range. This provides 24 (16+8) time slots. All this and much more can be accomplished in software without the operator having to change anything in the CDU (Combining and Distribution Unit), which would be the case normally. Because each cabinet can contain up to six dTRUs, this solution can be repeated for the other two sectors in a site.

Millions to be saved

Ericsson has been working hard to rationalize the hardware in WCDMA base stations to reduce costs. This applies particularly to three key cards: RAX (Random Access Receiver board), TX (Transmitter board) and TRX (Transceiver board), which have passed all tests and are now in production. This project was headed by Peter Karnatz at the plant in Gävle, Sweden, while the design took place in Nuremberg, in Germany and Enschede in the Netherlands.

An important detail is that ASIC (Application-Specific Integrated Circuits) were used instead of FPGA (Field Programmable Gate Array) circuits, which are complicated and expensive. Plans for the next generation call for at least as large a cost reduction. This means between 10 and 40 percent per card and nearly as much in the third wave of rationalization.

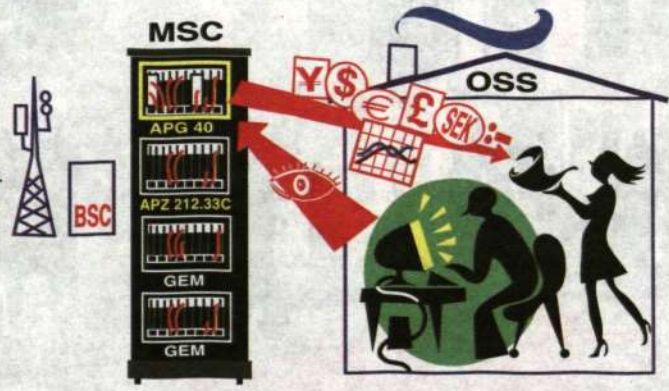
Warning

Warning: 2 GB limit for Personal folders. If you store a lot of personal data in Outlook in a Personal folder PST-file either on the C: or the H: drive, you should be aware of the 2 GB limit. If you reach this level, there is a considerable risk that the file will become corrupt and the data will be destroyed.

You can check how much data is stored in your Personal folders by right-clicking it and choosing Properties and then Folder Size. If the size is approaching 2 GB, contact your help desk for assistance, informs Gunilla Ahrens at Ericsson Solution Management.

APG40

The APG40 uses the Microsoft Windows NT 4.0 Enterprise Edition operating system with a 500 MHz Intel Pentium II Mobile processor and 768 MB of RAM memory. There is a 10 GB system hard disk and 3x18 GB data disks for a total capacity of 54 GB. External communication takes place over 2x100BaseT Ethernet links on an I/O card.



Applications and services inspired tradeshow

Mobile applications and content were in focus at this year's Telecom Asia. The exhibition attracted around 30 percent less visitors than two years ago, but this was hardly noticeable at the Ericsson stands, where demonstrations of MMS and Multimedia Streaming gathered large crowds.

319 exhibitors from 24 countries came to Hong Kong this year to participate in Telecom Asia. Most of the exhibitors represented operator organizations in China and Hong Kong, and emphasis was on mobile applications and content, rather than technology. However several major telecom players – such as Motorola, Siemens, Alcatel and Nokia – were missing, a sign of the current downturn in the industry.

The drop in the number of visitors to the exhibition this year was noticeable, but hardly surprising. Several factors may have influenced the visitor rate; one was the fact that the exhibition coincided with the end of the Ramadan month, when the Muslims end their month-long fast to celebrate Eid Mubarak.

However, the Ericsson booth, dedicated to showing customers the advantages of 2.5- and 3G technologies, was still pretty popular. High-ranking personnel from various government bodies of the world dropped in to experience live demonstrations of 3G, MMS and Multimedia Streaming, and discuss Ericsson's offerings with the specialists on hand. These demonstrations attracted the most interest during the six day long exhibition.

Ericsson is working closely with various partners in developing relevant content and applications as part of Ericsson's service offerings. In fact, the live MMS and Multimedia Streaming plinths at the Ericsson booth were set up in partnership with SmarTone Communications.

"There is a strong interest in Multimedia Streaming

over GPRS among the operators of the region who came to visit the booth, including ministries of various governments," observed Eugene Sarmiento, product marketing manager for Ericsson Content Delivery Solution. He was Ericsson's Multimedia Streaming specialist at the demonstrations, and noted with some satisfaction that Ericsson was alone in demonstrating live streaming over 2.5G networks.

Media attendance was dominated by regional journalists, that outnumbered their European and Australian colleagues by more than 50 percent. Ericsson received a great deal of attention: over 30 interviews were booked before the start of the exhibition, and Ulf Ewaldsson, deputy managing director of Ericsson China was interviewed by the regional broadcast television CNBC about mobile Internet and the impact of 3G on consumer lives. These were encouraging signs of the strong image that Ericsson has in the region.

Topics of interest to the media ranged from 3G standards like WCDMA, CDMA2000, TD-SCDMA, Ericsson's position in Asia Pacific, to Ethernet DLS Access. Ragnar Bäck, president of the Asia Pacific market area, was on hand to meet with the journalists and tell them about Ericsson's strategies and plans for the region in light of the industry downturn.

Several interesting press releases were announced during the exhibition week, and Ericsson signing the industry's most extensive Managed Services agree-



Eugene Sarmiento gives Lee Hsien Yang, president and chief executive officer of Singtel, a live demonstration of Ericsson's Multimedia Streaming. Between them Per-Olof Björk, director of corporate market coordination and Ragnar Bäck, head of the Asia Pacific market area.

ment with Hutchison in Australia caused a great deal of excitement. Other good news was an expansion contract with China Telecom for Ericsson's Digital Subscriber Line (DSL), and Ericsson and AT&T Wireless making the first live WCDMA/UMTS call in the Americas.

Ericsson's efforts were appreciated, according to a survey carried out by visitors of Telecom Asia 2002. The Ericsson booth got high ratings from the visitors with regard to quality of the content, professionalism and relevance.

BEE YOKE

edited by TONYA LILBURN

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TELECOM ASIA

Telecom Asia takes place every two years. The event is organized by the International Telecommunication Union (ITU), which is the United Nation's special agency for telecommunication issues.

Statistics 2002

Number of registered trade visitors: **18,677**
Number of exhibitors: **319**
Number of journalists on site: **155**

"Sharing the knowledge advantage: Business to go" was the theme of the Ericsson booth at Telecom Asia 2002.

PHOTO: JUN LI



Trade award to Ericsson

The Israeli government recently presented Ericsson with the Israel Trade Award 2002. The award is given each year to companies that contribute to the development of the Israeli economy and trade.

"Through its local presence, Ericsson has successfully become an integrated part of the Israeli telecom market," said Ohad Cohen, Israel's commercial attaché in Sweden.

Ericsson has been the supplier to Partner, Israel's second largest mobile operator, for five years.

"Israel is a true telecom nation. Mobile penetration is over 80 percent, and subscribers are on the phone 280 minutes every month on average, which is twice as much as the Europeans," says Bo Andersson, head of Ericsson in Israel.

He has helped increase Ericsson's presence in the country since 1996.

In addition to providing Partner with GSM equipment, Ericsson is the largest supplier of microwave



Bo Andersson, head of Ericsson in Israel, with the Israeli award. In the middle, Zvi Mazel, Israel's ambassador to Sweden, and to the right Ericsson's CEO Kurt Hellström. PHOTO: GUNNAR ASK

transmission. And as of 1998, Ericsson delivers GSM equipment to the Palestinian operator Paltel.

GUNILLA TAMM
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"Calm sailor" praised

Business Travel News International has named Ericsson's director of corporate travel management, Brigitte Ringdahl, International Travel Manager of the Year. She "sailed her travel program through the choppy waters of 2002 with calm, authority and intelligence," says BTN, acknowledging the astounding results: reducing Ericsson air miles by 40 percent in two years, negotiating better travel agency deals, and slashing taxi costs by encouraging employees to use public transportation. "But it is important to strike a balance between savings and the needs of your road warriors. We don't always go for the cheapest deals," emphasizes Brigitte Ringdahl.



Brigitte Ringdahl accepts her award.

Ericsson to the tee

550,000 Swedish golfers are deciding whether they want balls or shares. The Swedish Golf Association will award members who upgrade their membership cards (used to update handicap information or register for tournaments) to Master Card three golf balls or Ericsson shares worth SEK 120 (USD 13).

"We believe Ericsson shares to be an attractive premium," says Per Adler, head of Swedish Golf Association Business Development.

from the archives



"This German beauty found herself courted by Ericophone santas," *Contact* declared in 1969. Topping the wish list with a telephone is, in other words, not a recent thing. In those days, however, Santa's beard was the desired application, rather than MMS and cameras.

new assignments

Lars Lindén, previously head of Market Unit Latin America North, is the new head of Market Unit Central America.



Lars Lindén

Fredrik Ambjörn is appointed head of Market Unit Latin America North. He was previously head of Ericsson in Colombia.

Urban Gillström will join Sony Ericsson as corporate vice president and head of Sales & Marketing in region North America. He was previously head of Market Unit Central America.



Urban Gillström

Oscar Rojas has been appointed country manager and president for Ericsson Venezuela, CEV. He will also continue in his role as key account manager for CANTV and TELCEL based in Caracas.

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The Ericsson logo celebrates twenty years of serving as a unifying symbol for the company.

PHOTO: GUNNAR ASK

20 years of the same symbol

The Ericsson logo is celebrating its twentieth birthday. When it was unveiled to the world on January 1, 1982, it united the company under a single symbol.

"A great deal has happened during the past 20 years, both within and around our company, but the logo remains the same," says Gustaf O. Douglas, who was responsible for the development of the logo.

When G.O. Douglas began his work, the use of logos and symbols was unstructured and there were local variations throughout the world. The need for a single brand was not particularly acute when the customer base consisted of national state owned telecom operators. Ericsson had no distinct customer profile outside Sweden.

In 1980, the management decided to gather its strength under a common symbol and G.O. Douglas was entrusted with designing a visual identity program, including a new logo. The program was to be presented to the entire company within 19 months. AID in London, a company specializing in corporate design, developed four proposals, which were assessed by seven members of the Ericsson management team.

"All but one voted for the same proposal. Björn Svedberg, Ericsson's president at the time, made the final decision and he agreed with the manage-

ment team, which was fortunate because otherwise I would not have finished on time."

The two components of the logo – the text and the symbol with the three stripes – must not be separated from each other. The only exception is on chips, which are so small that there is no space for the text.

"During the past 20 years, we have gone through technology shifts, market fluctuations, deregulation processes and reorganizations. Competitors have come and gone, new design trends have emerged, but the logo remains. It's positive that there is something sustainable to symbolize the values for which Ericsson stands," concludes G.O. Douglas.

JESPER MOTT

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LARS-GÖRAN HEDIN
corporate editor

Lighter days ahead for all of us

At this time of year, the old Norse Vikings celebrated the Winter Solstice. It was a party unlike any other, in honor of the Gods but surely just as important for the Vikings' own sakes. Despite the fact that more than 1,000 years have passed since then, one thing remains the same in the far north: Days are short, nights are long, and the coldness gets to all living things.

The Vikings had learned that during this time of year, they needed a bit of comfort amid all this suffering. And so they celebrated the turning point during the waning days of each year. Then, as now, the Winter Solstice is a magical occasion when the days again start to grow longer and lighter. From that point of view, the Christian Christmas holiday seems tame – a great cheer for the return of daylight!

The year that has passed has been one of the toughest ever for our company and for the entire telecom industry. No one has missed this fact.

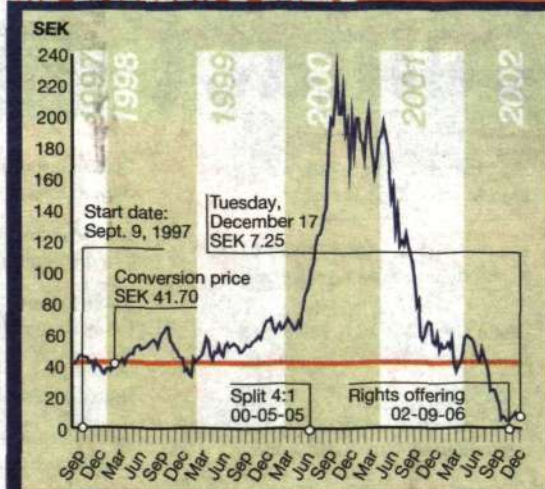
In the beginning of December, that became even more apparent for us working within Corporate Communications. Many friends and colleagues had to leave us as part of the layoffs affecting the whole corporation. Those of us who are still here miss them, and sometimes feel guilty because we got to keep our jobs.

When this column was written early on St. Lucia Day, while waiting for the maiden in her crown of lights just before a fantastic sunrise, I feel a glimmer of hope. In a few days, the winter solstice will be here and the light will return, slowly but surely.

Thank goodness there are signs that say the same may be true for the telecom industry, however more slowly than what will happen in reality after December 22. But there are forces that move undeniably in the right direction and, as opposed to the season change, there are ways to influence them. Ericsson's "Talk Time Contest" is a terrific example of this! By stimulating increased traffic in the networks, we can speed up the return of the light.

With that, I wish all *Contact's* readers a Happy New Year! And I hope that 2003 is, if not completely happy, then at least lighter for the telecom industry.

The ericsson b share



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