

Contact

PLUS!
Strategy
expert of
the year

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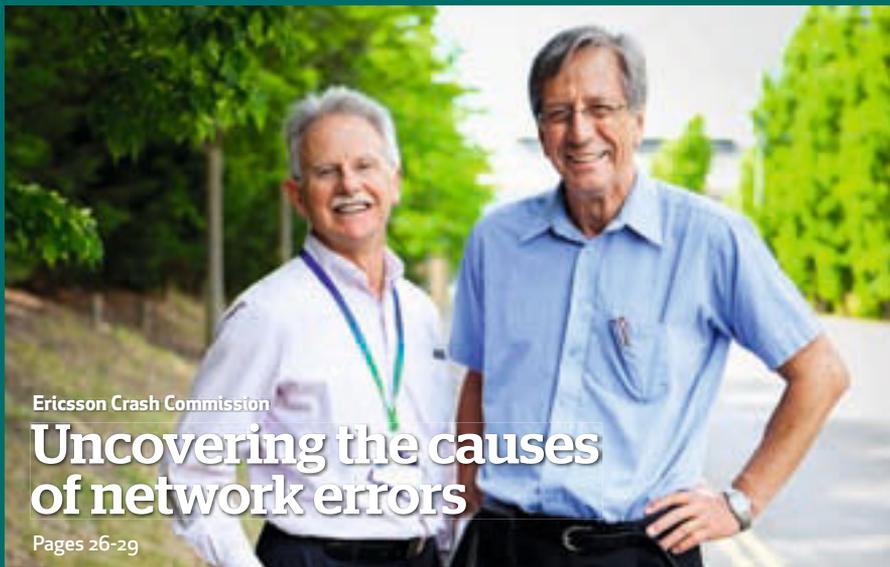
ERICSSON

CONTACT MAGAZINE

The internal magazine for Ericsson employees, since 1939. Read, learn and contribute.



ERICSSON



Ericsson Crash Commission

Uncovering the causes of network errors

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Contact

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Congratulations GSM!

We all remember some things more than others. For example, I have sharp memories of my very first mobile phone, back in 1994. It was a Nokia (this was before I started with Ericsson) and I felt incredibly privileged to have my own mobile phone. At the time I was working for a small, forward-looking consultancy in Stockholm – the management was determined that we should have a mobile office, so everyone got a laptop and a GSM phone. Not having to sit glued to the desk whenever I wanted to write something or call someone gave me such a sense of freedom. The only thing I used the phone for was making calls, but still it was quite big and sometimes got in the way.

There was one episode, for example, when I was running for a taxi, with the phone in my jacket pocket. When I tried to shut the car door, it got stuck on something. I tried a couple more times before I realized it was the phone. It ended up battered and buckled, with a big crack in the display, but it still worked like new. And it kept on working until I changed jobs and bought my own private mobile.

Two things strike me when I think back on this: how quickly I became reliant on the freedom that my mobile phone and my laptop gave me; and that so many people, like me, have such clear memories of their first mobile phones. I think it's because the mobile has become a symbol of personal freedom.

It feels special to be one of the people working for the company that has made some of the greatest contributions to mobile telephony. I am thinking for example about Ericsson's launch of GSM technology, which carried its first commercial call 20 years ago. I am looking at my smartphone, with its touch screen and all its functions, and offer my grateful congratulations to the 20-year-old that helped make it possible.



Helena Norrman,
Head of Group Function
Communications

Have your say

E-mail us your questions, opinions, reflections or work-related images. We will publish a selection of the material on this page.

contact.comments@ericsson.com

CONGRATULATIONS!



Sandra Perez, who works as software designer at Ericsson in Spain, has won the Contact magazine and Contact Online strategy competition and has been named an Ericsson Strategy Expert.

More than 2,300 replies were received, and many participants answered all the questions correctly. Sandra Perez was randomly selected and will receive

a Sony Ericsson Xperia X10 smartphone. The correct answers were: CBBAACCBCB.

Editorial

HELLO!

I would just like to say that my colleagues and I really enjoy the regular feature "Have you been asked..." (page 5 in Contact magazine, editor's note). We would also like to suggest that you publish all of these graphics together in a special magazine. We would appreciate that a lot because we regret that we didn't save them.

Anne M Lagerstedt, Sweden

ANSWER Thank you for the praise. We have received several

inquiries about putting these pages together in some form. We're now discussing how we can best do this, and we will get back to you when we have made a decision.

Editorial

CREATE YOUR OWN QUIZ!

Would you like to test your colleagues on your knowledge of telecoms? Get in touch with us at editorial. We would like you to contribute innovative and tricky quizzes for the back page of the magazine. The rules are simple. Read more here: http://internal.ericsson.com/page/hub_inside/news/magazines/contact/readers_quiz.jsp

Editorial

Readers' pictures



This picture is from this year's Ganesh Chaturthi festival in the city of Pune in India. This Hindu festival is usually held over a 10-day period sometime between August 20 and September 15. I took this photo with my Xperia X10 mini, and it was also published on the BBC's "Your Week in Pictures" website at: <http://korta.nu/o6mdi>

Mahindra Bhangne, India



One day not too long ago, I took this picture with my Xperia X10 mini on my way home from work in Kista near Stockholm. I got home just before the storm began.

Johan Sterne, Sweden

Welcome...

PHOTO: ERICSSON



Margaret Kositany, a new Ericsson employee

... Margaret Kositany worked for Unilever and mobile operator Zain before joining Ericsson in November 2010. In her new role as Director of Sustainability and Corporate Responsibility, she supports countries throughout Region Sub-Saharan Africa (RSSA).

The telecommunications industry is growing steadily in Africa.

What is your contribution?

Global sustainability projects don't always benefit the poorest of the poor. I spend my time traveling and meeting the poor to find out more about their needs. I want to introduce localized development projects in Africa using our Ericsson products to help these people and the environment.

You are based in Kenya. Which

parts of the country do you recommend people visit?

For animal lovers, there are many national parks and lakes in Kenya. Right now, blue wildebeest are beginning their annual migration to the Serengeti. In Nairobi there are many excellent restaurants and in Mombasa there are beautiful beaches. The Kenyans are warm people and love entertaining.

Web poll

65.1

... percent of 282 Ericsson employees say they never use MyNet while 20.5 percent say they use it once a week.

Source: intranet

More on MyNet

- ▶ Since the launch of MyNet in November 2010, 42,000 unique users have used the service.
- ▶ 120-150 microblogs are created every day, used by about 1,500 users.

Ever wondered what MyNET can do for you? Read Anna Guldstrand's blog post "MyNet - What's in it for me?" https://ericoll.internal.ericsson.com/sites/Collaboration_Ericsson_Blog/Lists/Posts/Post.aspx?ID=91

Have you been asked ...

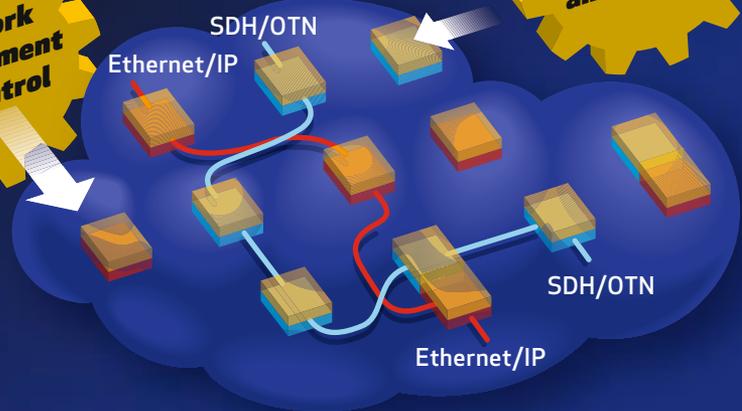
...ABOUT PACKET-OPTICAL INTEGRATION?

Packet-Optical Integration

Optical transport networks (OTNs) and packet networks have been separated for a long time. Packet-based technologies such as IP and Ethernet are handled separately from optical technologies such as Synchronous digital hierarchies (SDHs) and OTNs. These separate technologies are now increasingly being integrated to simplify network construction and operation. A new type of node handles packet data and optical data in a single integrated network.

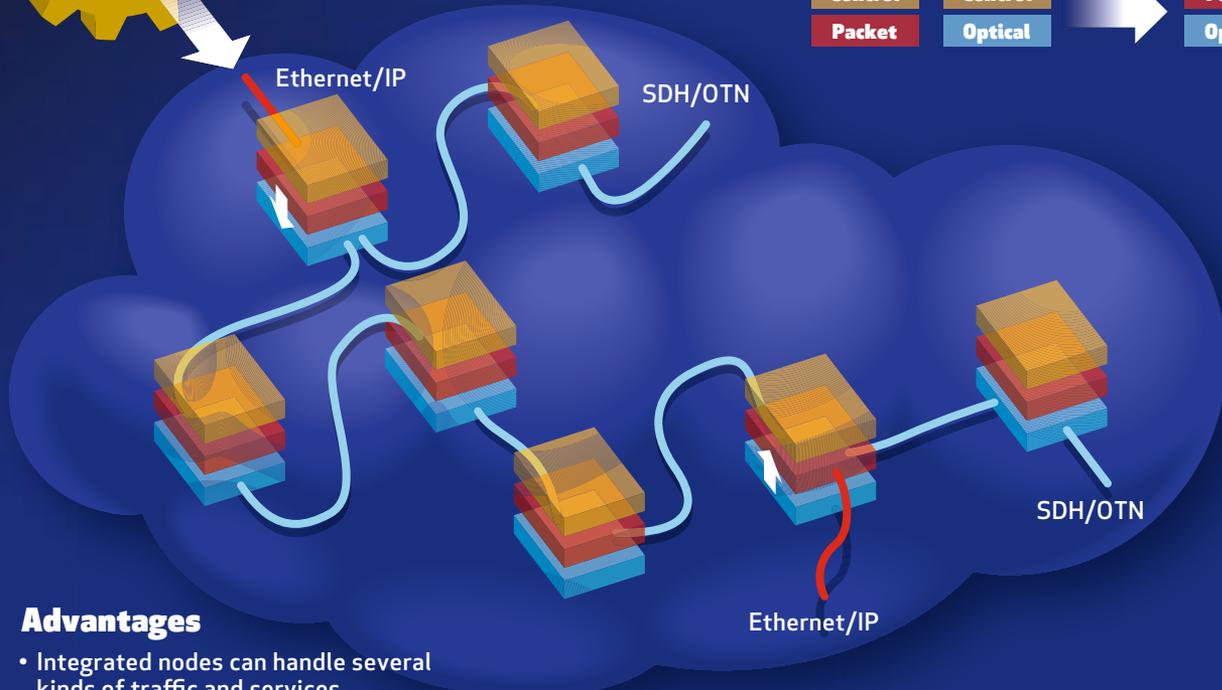
Today

Packet and optical nodes are separate and have different control planes.



With packet-optical integration

Packet and optical nodes are integrated and share the same control plane.



Advantages

- Integrated nodes can handle several kinds of traffic and services.
- Different services can be transported using the most suitable technology.
- This enables shared control and management of packet and optical nodes.

3pm/ August 26/Himalaya Mountains, Nepal

Climb every mountain

On the trail to the summit of Mount Everest, a recently installed Ericsson Radio Base Station (RBS) 2111 enables local operator Ncell to provide 2G GSM service in and around the Nepalese village of Khumjung, at about 4,000m above sea level. The equipment for the site was transported by helicopters to a nearby helipad and hauled over to the village by Sherpas. Meanwhile, Ericsson engineers and an installation team hiked for four days across nearly 16km of hilly terrain to reach the site, which is located at the foot of the Himalayan peak, Mount Khumbila.

PHOTO: ERICSSON/ROHIT PATIAL







Free texts may hit revenues

SMS An application that enables free text messages on Apple devices could threaten an important source of operator revenue. The newly launched iMessage enables anyone with an Apple iOS5 product to send an unlimited number of texts to anyone with a similar device. According to the New York Times, more than 2 trillion text messages are sent each year in the US, generating more than USD 20 billion in revenue.

Source: Apple/New York Times

India pioneers cheap tablet

TABLETS At USD 35, the Aakash tablet is possibly the cheapest mobile device of its kind, anywhere. Aakash, which is Hindi for 'sky', was developed specifically for students in rural India, who may not have access to the same digital resources or school materials as their urban counterparts. The Aakash tablet was developed jointly by DataWind and the Indian Institute of Technology.

Source: BBC

1.2 million people have subscribed to artist-actor, Jared Leto's Facebook page.

Mobile networks could save lives

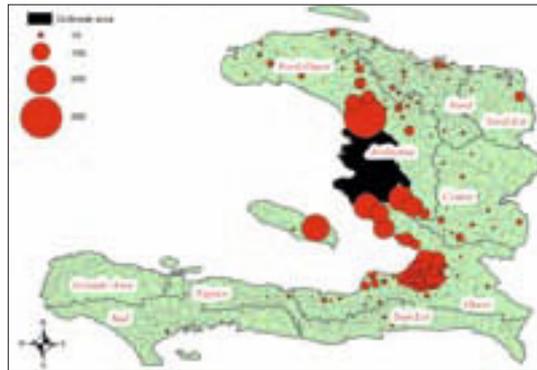
A recent study indicates that mobile network data could provide the most timely and accurate information about population movement following a disaster and play a key role in saving lives.

EMERGENCIES In late 2010, a deadly cholera outbreak began near the Haitian capital of Port-au-Prince – an area that was still recovering from the devastating earthquake that had struck in January of that year. Using a new methodology, researchers from Sweden and the US were able to deliver reports about how many people were moving in and out of areas affected by the outbreak within 12 hours



Linus Bengtsson

of receiving the raw data. "It is extremely difficult to physically gather this kind of information," says Linus Bengtsson, a medical doctor and



Average daily numbers of sims that moved out from the infected areas surrounding Saint-Marc, Oct 15 to Oct 23, 9:00 am, 2010.

researcher at Karolinska Institute in Stockholm.

A chance to test

Bengtsson and his project colleagues from Columbia University in New York City were already studying how data from mobile networks could improve emergency response when the outbreak began, giving them an opportunity to apply their method and react to the situation rapidly.

As part of its initial research, the team

compiled data from local operator Digicel, including information on 282 million calls placed on 2.8 million phones during the aftermath of the 2010 earthquake. Compared with manual estimates, the mobile data provided much more accurate information on popula-

MAP: BENGTSSON ET AL., PLOS MED 8(9), 2011

tion movement. "This could redefine the role of network coverage," Bengtsson says.

Challenges remains

Several challenges related to the methodology still need to be resolved, including access to the data and the degree to which it accurately represents certain demographics. However, Bengtsson emphasizes that conditions after a disaster are far from normal and stable, and that mobile networks could well provide the best data available in the race to save lives.

Bengtsson and his colleagues are now setting up a global non-profit organization to create routines for using this method during emergencies.

David Francisco

► The complete study, "Improved Response to Disasters and Outbreaks by Tracking Population Movements with Mobile Phone Network Data: A Post-Earthquake Geospatial Study in Haiti" can be found at plosmedicine.org.

Diversity efforts recognized



On October 6, 2011, Ericsson's President and CEO, Hans Vestberg, was honored in Stockholm with the Swedish-American Chamber of Commerce Mentor Award for his "longstanding and extraordinary support to women in business."

PHOTO: JONAS PERSSON



PHOTO: HÅKAN LINDGREN

Preschool teacher Emi Kallin and her group of children use a tablet to learn more about wildflowers.

Tech-savvy tots

In Nacka Municipality, Sweden, tablet computers are helping preschool children explore new ways of learning.

EDUCATION Emi Kallin, a teacher at Stensötans preschool in Nacka, asks the children whether they know the names of any types of birds. She then uses an app on the tablet to let them hear various types of bird-song.

Learn new things

In a clearing in the wood, a group of four and five year olds excitedly form a circle around a 9 inch screen. It's the first time they have taken the tablet

outdoors. The sounds on the app are so natural, it's hard to tell whether they are coming from real birds or from the tablet. By pressing on the screen, the children soon discover that the bird chirping in the woods is a starling.

Anthony Cifuentes, aged five, thinks using the tablet is fun. "It's great that you can move the screen," he says.

"We usually sit around the tablet and take turns using it. We learn new things."

It has taken only a few months for tablets to become a regular feature at Stensötans preschool. Up to eight children usually gather



Tablets have quickly become valuable educational tools.

around one tablet. This compares favorably with the traditional PC, which can be used by just one or two children at a time.

New skills

"The kids learn about technology from each

other in a way we've never seen before," Kallin says. "A lot of it is based on them talking to each other to figure out how they should use the apps. So they're practicing their language skills, teamwork and waiting their turn."

Here to stay

Lena Gällhagen, who works as an IT and web developer for schools and preschools in Nacka Municipality, says that the use of tablets in schools is not just a fad. "Suddenly, we have a technical gadget that is very easy to use, and it's so flexible that people of all ages can use it."

Anders Jinnekliint



PHOTO: COCACOLA.SE

Coca-Cola has most likes

FACEBOOK Ranked according to the number of 'likes,' Coca-Cola retains its standing as the world's most recognized brand – even on Facebook:

▼ NUMBER OF LIKES

Coca Cola:	34,511,504
Starbucks:	24,446,846
Oreo:	23,092,391

Source: Mashable

Filing e-mail is wasted time

NEW STUDY A report from IBM Research finds that time spent organizing and filing e-mails is largely wasted, as it does not improve the ability to actually retrieve information. The report concludes that built-in search tools and threading are far more efficient methods for finding that long-forgotten e-mail. According to market research firm, Radicati Group, a typical corporate e-mail account sends and receives about 110 messages per day.



Source: IBM Research

Microsoft tops cloud test

TEST Microsoft had the fastest cloud service according to a 12-month study of several major services. Compuware conducted over 500,000 tests between August 2010 and July 2011 on specific server locations around the world. Microsoft's Windows Azure beat competitors such as Amazon EC2 and Google App Engine.

Source: Ars Technica

Hello...



... Jeppé Wikström,

photographer and partner in the non-profit organization Expressions of Humankind, which recently kicked off the "A Day in the World" photographic initiative – a project that aims to document moments from all parts of the world during a single day. Ericsson is a founding partner and member of the project's technical advisory board.

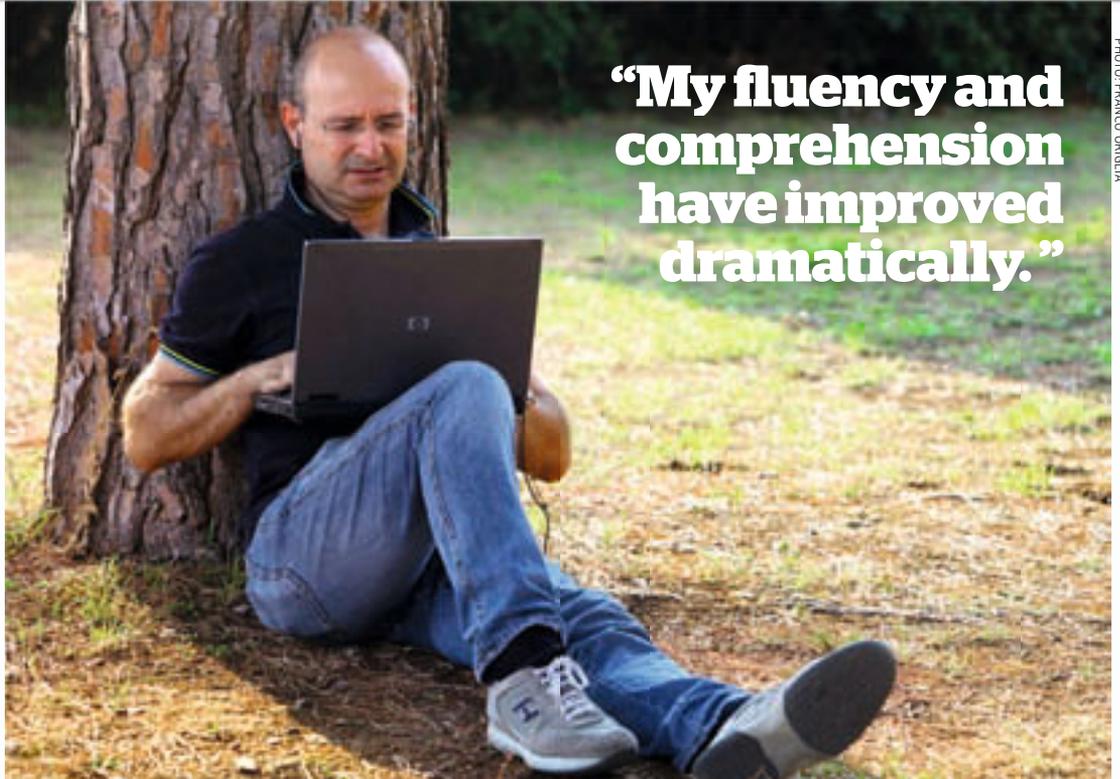
Where did you get the idea for this project?

"We wanted to show that there are more things that unify us than differ between us in this world. Ten years ago, having a camera was a big deal – expensive and complicated. Now, almost everyone owns a compact, easy-to-use camera or smartphone, and we can see and share images instantly."

How will you collect and use the photos?

"During a single weekday in 2012, anyone who wants to participate will be invited to upload pictures to an open-access, specially designed website. Each photo will be tagged and categorized and can then be shared or used in exhibits and other related projects. Anyone with access to the internet can use the photos, which will ultimately serve as a basis for studies in fields as diverse as sociology, environmental sciences, economics, social medicine and anthropology. The beauty of it all is that we really have no idea how people will use these photographs in 100 years."

David Francisco



"My fluency and comprehension have improved dramatically."

Riccardo Aniello says that English skills and comprehension are important for encouraging cooperation both internally as well as with customers.

Overcome your language barriers

More than 1,000 employees have commented studying Ericsson Academy's course in Business English. For Riccardo Aniello, the new language skills have been a positive lift for his everyday work.

EFFICIENCY Aniello, Head of Performance Management within Region Mediterranean, started the course last January to help expand his vocabulary and learn new expressions in English. Since then, he – like many of his colleagues – has taken part in personal lessons as well as virtual, online ones designed to

improve his communication skills.

"My fluency and comprehension have improved dramatically and I'm not as intimidated about speaking English any more. Now I conduct regular face-to-face discussions with colleagues from other countries as well as with customers," Aniello says.

Experienced teachers Employees can enroll in the year-long course at any time and can set their own study pace. The course consists of personal tutoring, self-paced software and live online tuition in virtual classrooms. Throughout

its duration, students complete written assignments and practice different aspects of the English language, such as pronunciation and listening comprehension.

Experienced teachers help students achieve their goals by continually assessing their progress.

Although students can control the pace, they are encouraged to devote at least 90 minutes to study each week. This flexible approach suited Aniello because he was able to combine his studies with a busy work schedule.

Therese Lindgren, Program Manager at

Ericsson Academy, says students can access the language site even when they are logged out of the Ericsson intranet. In this way, employees can study whenever and wherever they want.

An essential course

"English is not just our corporate language but also a common denominator within the ICT industry. A good grasp of the language is therefore essential for each and every one of us."

Jonathan Rothwell

► Learn more about the program at: [EriCOLL](#) > [Ericsson Academy Language](#) > [Business English](#)

Volvo speeds up service with new app

Service technicians at Volvo Trucks are saving time by using a new mobile application that provides detailed information about the vehicles they are servicing.

INNOVATION At the Volvo Trucks service garage on the outskirts of Gothenburg, Sweden, Service Technician Mattias Roos is testing a new way of working.

“Modern trucks are complicated, and we need access to a lot of information to be able to do our jobs – information on braking systems and electronics, for example,” he says.

Endless possibilities

“For me, this involves typing the vehicle’s chassis number into the app. I’m then given a number of choices. I can search under ‘oil volumes,’ for example. The results are then displayed in text, image or video form.”

The major benefit



PHOTO: VOLVO GROUP

Volvo IT has developed a mobile application that helps technicians save time while performing service jobs in the garage.

of this new way of working is that the service technicians can save themselves a lot of time. Until recently, 40 mechanics had been sharing three computers to do their research and print out information, and then bringing that along with them to work on the trucks.

Kerstin Hanson,

Business Innovation Manager at Volvo IT, who is behind the prototype app, believes that there are further advantages to using this mobile technology.

“Young people today are accustomed to using computers and mobile phones, so these ways of working can help our company to attract

competent staff,” she says.

“Besides, our mechanics are interested in technology, and often have advanced smartphones themselves, which means we don’t have to train them to use the new interface. This is the advantage of using consumer products.”

✉ Johan-Gabriel Fritz

London’s not calling?

BOTTLENECKS Boris Johnson, Mayor of London, has warned that the city’s 3G network may not be able to handle the huge amount of data traffic likely to be generated during the 2012 Olympic Games. The city’s telecom infrastructure will come under enormous pressure as millions of visitors attempt to send pictures, films and text messages during the Olympic Games.

Source: BBC

Mickey Mouse goes Android

BRANDS A Mickey Mouse pedometer and a Winnie the Pooh calculator are just a couple of the apps available on Disney Mobile’s new smartphones. The mobile virtual network operator, active in Japan, has offered voice and data services since 2008, and recently released a new series of Android-based phones that are pre-installed with Disney-themed content. Disney Mobile is a joint venture between network operator SoftBank and The Walt Disney Company.

Source: TechCrunch

EVACUEES FIND SHELTER WITH MOBILE APP



PHOTO: NASA/NOAA GOES PROJECT

Hurricane Irene, August 26, 2011

SAFETY As Hurricane Irene approached New York City this August, municipal officials ordered mandatory evacuations of hundreds of thousands of people. In response, some savvy residents turned to Foursquare’s location-based mobile application and social media platform to get details about their nearest evacuation center.

Members of the Four-

square community were able to “check in” or subscribe to a list of evacuation centers in New York City and then share details with other members who were also “checked in”.

By October 2011, nearly 350 people had joined Foursquare’s “NYC Hurricane Evacuation Centers” group.

✉ David Francisco

Source: Foursquare

55

... percent of 3000 persons, age between 18-30, surveyed in 14 different countries say they could not live without the internet.

Source: 2011 Cisco Connected

3 HAVE THEIR SAY

What do you remember about your first mobile phone?

► **Ann-Britt Mattsson**, Stockholm, Sweden



I got my first mobile phone in 2003 or 2004.

It was a small Sony Ericsson that I was able to buy at a discount from my employer. Today, I am on my fourth mobile phone.

► **Tor Hodne**, Stavanger, Norway



At first I had a second-hand Nokia, but then

I switched to a Motorola StarTAC. It was sleek and black and actually fit into my pocket. I think this was around 1996, and I kept it for about two to three years.

► **Jan Brünemann**, Utrecht, the Netherlands



Back in 1999, I was a student, and my first

mobile phone was a Nokia 6150. The subscriptions were quite cheap because coverage was only available in urban areas. At first it felt a bit unnatural to use the phone but that quickly changed. I used SMS a lot, but preferred to call people from home using my landline. In 2001 I switched to a Nokia 6210, and later to a Sony Ericsson K700, then the W800 and finally the X10 mini pro.

David Francisco

EARLY ADOPTERS

Living it up in the cloud

The combination of mobile devices, software applications and cloud services in the lead-up to a Networked Society brings creative solutions to those leading busy lives. Here, self-proclaimed information junkie Ian Hall describes how he gets his fix.

APPLICATIONS Based in Ireland, frequent traveler Ian Hall, Head of Business Transformation for Region Western and Central Europe, is passionate about new technology and an early adopter of many gadgets. Using applications such as Google Reader on an HP TouchPad tablet is his current vice.

“I’m in a business-development role, so it’s important to keep up-to-date with what’s happening in the telecom and ICT industries,” Hall says. “Starting at breakfast and continuing throughout the day, I constantly check a selection of over 50 RSS feeds related to ICT, technology, gadgets, competitor news and sports.”

In his personal life, Hall uses the cloud-based service Box to share photos and videos of his two children with his brother in San Francisco. He also uses it to back up personal files and save documents for a local residents’ association, for which he is the elected secretary.

“Since purchasing my TouchPad, I’ve been using cloud storage



Ian Hall uses the latest apps and gadgets to stay updated and in touch.

and services more and more,” Hall says. “Box is a cloud-based content management and file-storage utility. I can conveniently access up to 50GB of personal data in the cloud from multiple devices while on the go.”

Hall also uploads his favorite music tracks to the cloud using the ZumoDrive synchronization and storage service.

“I make the tracks available for down-

streaming, so I can listen to music on my phone,” he says. “I don’t need to copy my favorite albums onto my smartphone, so

I avoid using valuable storage space. It works seamlessly over current 3G networks.”

Jonathan Rothwell

Ian Hall’s apps:

► **ZumoDrive.** Allows users to upload media files from their Macs or PCs to the cloud for retrieval by their mobile devices. For more information, visit: www.zumodrive.com

Box. Allows users to share content in secure folders online. Content can be accessed and updated by friends or colleagues on a variety of devices throughout the world. For more information, visit: www.box.net

Hall also uses the following apps: Google Calendar, Facebook, Spaz Twitter client, AccuWeather, TuneIn internet radio, TapNote, NPR Reader, Quickoffice, Sky Remote Record and TripAdvisor.



PHOTO: CRISPIN RODWELL

PHOTO: MARTIN ADOLFSSON

September 20, New York



Social media unites for good

LOOKING BACK During the UN Week in September, more than 1,600 people gathered at the Social Good Summit in New York City to discuss the most pressing issues being faced by the United Nations General Assembly. The event was jointly hosted by Mashable, the UN Foundation, the 92nd Street Y and sponsored by Ericsson. Hans Vestberg, President and CEO of Ericsson was joined by Director of The Earth Institute, Jeffrey D. Sachs, UN High Commissioner for Refugees, Antonio Guterres, and co-founder of Refugees United, Christopher Mikkelsen to discuss how technology can help some of the most unconnected people around the world.

Read more in the article, 'Focus on technology for good in NY' on the intranet. Source: UN Foundation



PHOTO: ISTOCK

Tablets change surf habits

STUDY A Google survey involving more than 1,400 tablet users has indicated that these mobile devices could be changing how consumers interact with online content. The results show that nearly half of the tablet users spend more time on these devices than on their PCs or laptops. More than a third said they watch TV on their tablets, while almost 70 percent use their tablets for at least one hour a day.

Source: Google

“Every so often comes a change that you know will make a positive difference to people’s lives.”

Neelie Kroes, Vice-President of the European Commission, commenting on the passing of legislation to ensure that network operators will efficiently transmit e-call signals. E-call is an in-car system which alerts emergency services when a vehicle has been in a serious accident.

Feature-rich top apps

APPS A digital planner for students (iStudiez Pro), a professional photo assistant (Camera+) and a multi-platform back-up tool (MyBackup Pro) are some of the hottest mobile applications available for purchase, according to Swedish daily Dagens Nyheter. The newspaper's list also includes popular free applications like Google+, the Kindle e-book reader and Flightradar24, a global flight tracker for aerospace enthusiasts.



COMPETE AND WIN A PRIZE

COMPETITION How carefully do you read Contact? The answers to the three questions below can be found in this issue of the magazine.



1. What's the name of the crack team of experts at Ericsson who conduct independent root-cause analyses around the world?
2. When was the first telephone call made in a commercial GSM network?
3. What is Four-square?

no later than November 25. The winner will receive a copy of the Ericsson book Changing the World. If we receive several correct answers, the name of the winner will be drawn from a hat. Good luck!

The winner of the previous competition was John Hang, Canada who answered: 1) Two weather sites on the internet. 2) Internet Protocol version 6. 3) Everyday Ericsson.

Write your answer after each question, put "competition" in the subject field and send your answers to contact.comments@ericsson.com

Social-media voices

ERICSSON **Technology for Good** aims to find and share examples of how technology is making a difference in the world. <http://www.facebook.com/technologyforgood>

BLOGS **Gizmodo** is the ultimate gadget guide, with regular columns, live blogs, group forums and a host of sister sites covering everything from technology to pop culture. <http://blog.gizmodo.com/>

FLICKR **Self-Taught Photographers** has 40,000 members who have uploaded nearly 1 million photos. It's an online community for shutter bugs who have never taken a single photography class. <http://www.flickr.com/groups/stphotographers/>

Have you come across any thought-provoking blogs or blog posts? Let us know by sending an e-mail to contact.comments@ericsson.com

1.2

... billion entries will make India's future national identity database, Aadhaar, the largest in the world.

Source: New York Times

INTERVIEW: JAN UDDENFELDT

Jan Uddenfeldt has helped produce the world-leading **GSM and 3G** telecom standards. After more than 30 years at Ericsson, he is leaving to pursue a new challenge: to drive the development of Sony Ericsson's **smartphones**.

New era begins for GSM pioneer

Uddenfeldt has been full-time CTO for the Sony Ericsson Group, headquartered in Silicon Valley, since August 1, 2011. He has actually held this position for one year, but was also working as Senior Technology Advisor at Ericsson before August. Now that he is able to fully concentrate on his new tasks, he is full of enthusiasm.

"We're seeing smartphones develop at a breathtaking pace – almost like with GSM in the late 1990s," he says. "The growth in Android phones is expected to result in 180 million units sold this year, compared with just under 50 million last year. And it looks like we'll have 1 billion Android users within a year or two."

Being successful is largely about being first to market, according to Uddenfeldt, and he says that Ericsson has done this time and again. On the systems side, Ericsson was the first to introduce both GSM and 3G. It was also the first to launch the term "smartphone" at the beginning of the millennium with the Ericsson R380 model. That phone had a touchscreen on which you could use either a stylus or your finger.

"Ericsson has been good at driving technological developments and it's important that it goes on doing that," Uddenfeldt says. "That's also part of the reason both Ericsson and Sony Ericsson have set up in Silicon Valley because a great deal of smartphone development takes place here. Much of the development on the systems side is done from Kista, and it's worth noting that major players such as Alcatel-Lucent, Motorola and Nortel are no longer involved."

Uddenfeldt says that being at the forefront of technological development was also largely behind Ericsson's success with GSM. Ericsson began with GSM in the early 1980s, and this work was largely based on the experience it had of the Nordic Mobile Telephone (NMT) analog system and Time Division Multiple Access (TDMA) technology.

The first commercial GSM system was bought by Mannesmann (which was later acquired by Vodafone) in Germany in 1991. And, during this period, Ericsson supplied more than 30,000 of the world's first hand-held phones.

But GSM was by no means an immediate success. Many condemned it – the media called it a fiasco – but when it took off, sales volumes went through the roof.

"The first calculations for GSM in the late 1980s showed there were 50 million users. Nobody could have imagined we'd have the 4.5 billion users we have today," Uddenfeldt says. "The initiative towards a common European digital mobile standard actually came from France and Germany, who wanted to promote their industries in that area and take larger market share. But what they didn't know was that they were playing right into our hands, and we were able to take a larger share of that market because we were about five years ahead of them in terms of the technology."

GSM later helped pave the way for the next milestone – 3G. Uddenfeldt says that cooperating with NTT DOCOMO was vital to Ericsson's success in this respect.

"They had the same desire that we had – to be the first to release the same

technology, 3G. And together we succeeded in making it a world standard," he says.

Looking back on his time at Ericsson, Uddenfeldt is struck by the incredible rise in the company's turnover. When he joined Ericsson Radio Systems in 1978 after graduating with a PhD from KTH Royal Institute of Technology in Stockholm, the company's sales volume was a few hundred million SEK. Over the next 20 years, that figure increased by orders of magnitude.

And technological developments have also occurred at a tremendous pace. In the late 1990s, the speed in the GPRS data network was about 40kbps. The introduction of 3G meant that it quickly rose to 2Mbps; today it is 10Mbps. And the arrival of the new LTE standard is opening up new possibilities for mobile broadband to exceed 100Mbps.

"Ericsson is also at the forefront in this respect, having built large parts of Verizon's and AT&T's network in the US," Uddenfeldt says. "And there's no doubt that even higher data transfer rates will be needed, as the networks are becoming more congested. But Ericsson is also a world leader in handling radio networks efficiently with its smart technical solutions, which will definitely make it easier to continue taking market share. Ericsson has also constantly managed to reinvent itself, moving into new technology and utilizing the company's resources in new ways. Many companies have failed to do that and have become blinded by their own success."

Text: Hendrik Bergstén Photo: Knut Egil Wang

**We're seeing smart-
phones develop at
a breathtaking pace.**

JAN UDDENFELDT

CAREER IN BRIEF:

- ▶ He received a PhD from KTH Royal Institute of Technology in Stockholm in 1978 and started working at Ericsson Radio Systems in the same year.
- ▶ He became Head of Research at Ericsson Radio Systems in 1985.
- ▶ In 1990, he became Vice President of R&D at Ericsson Radio Systems with responsibility for Ericsson's cellular radio products.
- ▶ He received an honorary doctorate from Lund University in 1996.
- ▶ In 1998, he became CTO and Head of the Ericsson Group's R&D operations.
- ▶ He has been Senior Advisor in Technology to the Ericsson Group's CEO since 2004.
- ▶ Since 2010, he has been CTO of the Sony Ericsson Group, headquartered in Silicon Valley.





“All our products and solutions
send **emergency** signals using
GSM technology”

John Sundt, technician at Sector Alarm

GSM

When **3G came along**, many people thought it was the end of GSM. But the 20-year-old technology continues to **evolve in symbiosis** with 3G and LTE. GSM has also breathed new life into the security and power industries, to name just a couple of examples.

GSM 20 years on...



OSLO, NORWAY
EUROPE

The wail of a 90-decibel burglar alarm reverberates around the picturesque neighborhood of Østensjø, a leafy Norwegian valley overlooking Lake Østensjøvannet in southern Oslo.

John Sundt, a technician for Sector Alarm, doesn't seem bothered. He has endured this wail regularly since joining the company three years ago. He installs, upgrades and repairs GSM-powered alarms in homes throughout Norway. Testing that the sensors are working correctly is the final step of each installation.

"All our products and solutions send emergency signals using GSM technology," he says. "I check every sensor to make sure it's communicating correctly with the alarm receiving center back at company headquarters."

Today's installation takes place in

a three-story apartment in Østensjø, an area that's popular with young couples and first-time buyers. Baby paraphernalia is scattered throughout Tony Liavik and his wife Linda Anett's beautiful home. Liavik wants to ensure his wife and one-year-old son, Max, are safe when he's not home.

"There is very little crime here, but our neighbors have installed similar alarms and we don't want to become obvious targets because we don't have a home-security system," he explains.

Over the course of the afternoon, Sundt strategically places motion sensors, panic alarm buttons, door sensors, smoke-detectors and a tiny camera in the apartment.

Because these products are linked to the GSM network, they are not dependent on terrestrial cables. ►



Row-house owner Tony Liavik looks on as John Sundt of Sector Alarm installs a micro camera in his home.

“GSM alarm systems are more secure than traditional systems”

John Sundt

Did you know ...

that GSM/GPRS/EDGE will also last a long time for machine-to-machine technology because the amounts of data transmitted are often so small?

Source: Ericsson

► This means that the Liavik home will be monitored continuously even if the fixed-line connection breaks down.

“GSM alarm systems are more secure than traditional systems because they are wireless and intruders cannot easily tamper with cables inside or outside a residence,” Sundt says.

And because the system is digital it can also be upgraded and reinstalled easily at a new location if the family moves.

As late as 2006, alarm manufacturers in Norway used landlines for their emergency signals, offering GSM transmission only as an optional add-on.

Today about 330,000 Norwegian

households have alarm systems – 65,000 of them from Sector Alarm which supplies GSM as standard.

On the 9th floor of the alarm-receiving center in the heart of Oslo, Contact meets Leif Motrø, Technical Director of Sector Alarm. He describes the company’s relationship with GSM.

“(Norway-based operator) Telenor and other suppliers began moving all their customers to Voice over IP (VoIP),” Motrø says. “We needed a new way to connect our alarms to our customers’ homes, and saw GSM as a creative stand-alone solution.”

In 2008, GSM became standard on all Sector Alarm installations. Motrø

says the advantages are wide-ranging.

“GSM can transmit the alarm signals rapidly, and because the system is wireless, it’s very difficult for criminals to tamper with it,” he says. “The customer’s telephone service or broadband internet access is not disturbed during installation, the central processing unit can be positioned in a variety of locations in their residence.

“Overall, communication with the alarm receiving center and the transmission of emergency signals are more secure with GSM than with traditional alarms that rely on landlines or VoIP.”

Telenor provides coverage for 95 percent of the systems that Sector Alarm installs in Norway. Another

The European Conference of Postal and Telecommunications Administrations (CEPT) reserves two blocks of 25MHz within the 900MHz frequency range.

The world’s first (analog) commercial mobile telephone network is launched.

CEPT proposes a new standard for mobile telephony and appoints a work group, Groupe Spéciale Mobile (GSM), which later sets the GSM standard.

The original GSM work group is divided into five separate groups.

During GSM evaluation tests at CNET – the laboratories of the French postal, telegraph and telephone service (PTT) – in Paris, Ericsson, Televerket (the Swedish PTT), Nokia, and Norway’s Electronic Laboratory ELAB present narrowband TDMA systems with a 300kHz channel width.

Ericsson launches its first real handheld mobile phone, HotLine, which is marketed with the help of the fictitious character Harry HotLine.

1978

1981

1982

1985

1986

1987

“It’s a market that is growing really quickly. In Europe as a whole, about 4 percent of households have an alarm system”

Leif Motrø

mobile operator, NetCom, provides coverage for the remaining 5 percent.

“It’s a market that is growing really quickly,” Motrø says. “In Europe as a whole, about 4 percent of households have an alarm system. In Sweden the figure is around 7 percent.

Norwegians are early adopters of home security systems, and the number of installations carried out is increasing every year. Today, 16 percent of households in Norway have an alarm system. This figure has been increasing by one to two percentage points each year over the past four years.”

Most systems are installed in houses, but the number of installations at apartments is also on the rise. Although they vary in age and background, Motrø says, naturally, all customers – just like the Liaviks – are concerned about protecting their loved ones.

Sebastian Tolstoy, Director PL GSM RAN at Ericsson, confirms that alarms and other domestic security



Leif Motrø

systems now make up a major, essential part of the company’s overall GSM operations.

“When it comes to alarms, electricity meters and other types of electronic systems that require data measurement or transmission, GPRS is the usual choice, meaning GSM-based data transmission, because it’s absolutely

the cheapest option,” says Tolstoy. “In most cases, it doesn’t require much data capacity either.

“**GPRS modems** have been installed in various kinds of technical equipment in millions of households and other contexts around the world, and the cost of replacing them with another technology would be massive. The fact that we need to maintain existing services is one reason to keep the GSM network up and running.”

The global GSM network has coverage in nearly every country of the world, except South Korea and Japan. GSM also offers by far the best coverage, and SMG phones are still the cheapest, Tolstoy says.

“We’re still seeing very strong growth. Voice services have increased by 50 percent during the past 18 months, and data has risen by a full 500 percent in three years – largely because the new services that have been developed for 3G and LTE ▶

GSM – GOOD FOR UTILITY CUSTOMERS

Smart metering is another business area that depends on GSM technology and is growing worldwide. Energy distributors such as Enexis in the Netherlands use smart meters to collect usage information, remotely using embedded mobile modules.

THE TECHNOLOGY allows distributors to obtain accurate data effortlessly, and this results

in better energy-demand estimates. Information can also be transmitted back to customers, who in turn become more informed about their consumption habits.

Enexis has relied on GSM technology in its smart meters for almost five years.

“GSM is very important because it’s the only technology we use at this moment,” says Fons Jansen, Manager of Smart

Meters at Enexis. “GSM is very flexible and you have point-to-point connectivity with every meter. It’s easy to work with.”

Despite their inherently high cost, smart meters are used at Enexis because they offer great benefits to customers.

“If a customer receives more information about their usage, they are able to change their habits,” Jansen says.

In one example Jansen has

seen, a display coupled to a smart meter showed a penguin on a melting ice block.

“When kids see that picture, they are eager to encourage their parents to decrease energy usage in the house,” he says.

Jansen says the downside of GSM is the cost – one reason Enexis is investigating other technologies, for example LTE, for smart metering.

▣ Eric Gourley

CEPT’s GSM activities are transferred to the European Telecommunications Standards Institute (ETSI), which later also includes manufacturers, network operators and other key players.

Vodafone orders GSM infrastructure equipment from Ericsson: one switch and eight base stations, which are delivered in mid-1990. Ericsson also receives an order to supply GSM infrastructure to Germany’s Mannesmann Group, which has won the bidding for the license for Deutsche Telekom’s D2 GSM network.

July 1, 1991 is the official launch day for GSM.

SMS messaging is used for the first time when, on December 3, Neil Papworth of Sema Group sends a text from his computer with the greeting “Merry Christmas” to Vodafone’s Richard Jarvis.

Worldwide, GSM subscribers exceed the 1 million mark.

1988

1990

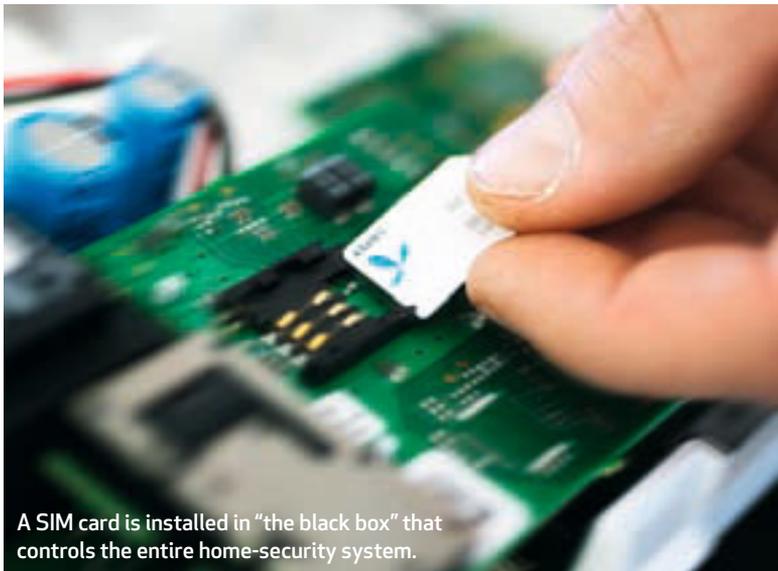
1991

1992

1993-1994

“The installed base, where we have 40 percent market share, is a massive gold mine for us”

Sebastian Tolstoy



A SIM card is installed in “the black box” that controls the entire home-security system.

Did you know...

that between 2008 and 2010, the total amount of GSM voice traffic increased by 50 percent, while the amount of GSM data traffic rose by almost 500 percent?

Source: Ericsson

Although GSM can do a lot, Tolstoy still recognizes a need for 3G and LTE.

“Video traffic is increasing all the time, and mobiles are getting bigger screens and faster processors, so of course it’s great to have more rapid transmission. But EDGE is still a good complement to mobile-broadband coverage.”

GSM has without doubt passed its peak, but it’s still a cash cow for Ericsson, Tolstoy says.

“The installed base, where we have 40 percent market share, is a massive gold mine for us. GSM still makes a significant contribution to Ericsson’s overall profits.”

At the moment, he doesn’t foresee an end to the use of GSM technology, even though it’s slowly becoming less important.

“Right now, I don’t see any reason to expect a rapid shutdown of the GSM network. GSM is an evolutionary standard that can adapt very well to new market demands, and this is why it has become an extremely cost-effective standard. I can actually imagine it continuing for another 20 years – maybe not in the same dominant role it has today, but in some form.”

Text: **Jonathan Rothwell/Anders Jinneklint**
Photo: **Håkan Lindgren**

► are also available for GSM,” Tolstoy explains.

When a user sees the letter “E” on their phone’s display, it means the phone is using EDGE and the GSM network, often owing to the optimal coverage this offers. And to a great extent, GSM now works in tandem with 3G and LTE.

“We work a lot with refarming (see fact box on page 24). This means that part of the frequency spectrum previously

reserved for GSM can be partially freed up for WCDMA or LTE. The idea is that GSM should work as an effective complement to the more modern technologies,” Tolstoy says.

When it comes to voice services, GSM is growing sharply in Latin America, Africa, India, Southeast Asia and China. In contrast, most of the increase in data traffic is happening in North America – largely due to the rise of smartphones, many of which rely on EDGE and GSM technology.

HELLO...



Jan Wäreby

... Jan Wäreby, Head of Group Function Sales & Marketing at Ericsson, who took part in making one of the very first GSM calls through a commercial network on July 1, 1991. At the time, he was Head of Sales for GSM in northern Europe. On the other end of the line was Yngve Zetterström, Project Manager for GSM at Televerket, the former Swedish

telecom administration, now part of TeliaSonera.

Tell us what happened.

“Yngve Zetterström and I were in Haninge outside Stockholm and we called Tony Hagström, Director General of Televerket, who was on holiday in Italy. Each of us talked for a while, and everything worked as it should.”

When did GSM really pick up?

“July 1 had been set as the official opening date, and on the same day as we made our call, similar calls were made in Denmark and Finland. The base stations had been set up, but coverage was limited and there were hardly any GSM phones around. We had a few people who moved around with the phones to

where they were needed. When use of the mobile phone really started to pick up, the traffic increased dramatically, in 1993.”

Did you ever suspect, 20 years ago, that GSM would become so big?

– “When it was agreed that GSM would be the European standard, we knew it would be big – but not this big.”

✉ Anders Jinneklint

GSM phone sales exceed those of Nordic Mobile Telephony (NMT) phones for the first time in Sweden.

The second standardization phase is implemented as fax and data transmission services via GSM are launched. The prepaid mobile phone service is introduced, which in some areas causes the number of subscribers to skyrocket. Worldwide, GSM subscribers exceed the 10 million mark.

The first telephones capable of handling two spectrum frequency bands at the same time – 900MHz and 1800MHz – are introduced.

Worldwide, GSM subscribers exceed the 100 million mark.

GSM has a breakthrough in the US as AT&T Wireless adopts the technology.

Sweden’s last NMT network is shut down.

GSM’s 20th anniversary. The technology standard is used in more than 210 countries.

1994

1995

1997

1998

1997-1999

2007

2011

GSM



Sebastian Tolstoy, Director Product Line GSM RAN, says that GSM may still have a role to play in telecom for another 20 years.

»» **Linköping - the heart of Ericsson GSM** »»

Johan Schultz checks the rack for the Evo controller node in the Linköping test lab.



The reinvention of GSM



LINKÖPING
SWEDEN, EUROPE

The heart of Ericsson GSM is in Linköping, Sweden. This is where the technology is being constantly updated so it can work alongside 3G and 4G.

Development Unit GSM is headquartered in Mjärdevi Science Park just outside Linköping, where it works with design, integration, verification and support. The people there see GSM as a natural complement to newer technologies. And it now has an important role as an alternative technology, a backup solution in locations where it is not financially viable to install 3G or 4G. Jonas Fredén, Director for the GSM base station controller (BSC) in Linköping, emphasizes that the unit's work is all based on end-user requirements.

"People expect their favorite services to work everywhere," he says. "In less populated areas with GSM coverage, users might possibly accept the service being somewhat slower, but it always has to work."

That is why it is important to continue developing GSM so that it keeps pace with new trends and can



Jonas Fredén considers GSM to be a natural complement to more modern technologies.

support applications that require greater data capacity.

"There shouldn't be a collapse in data speeds when a user switches from a 3G network to a GSM one," Fredén says.

Many forget that GSM also enables data services that use GPRS and EDGE, he adds.

EDGE Evolution, which is now on the way to market, can achieve download speeds of up to 1.6Mbps, enough

for many advanced services. For example, it works fine for streaming video. GSM also plays a central role in Ericsson's EVO RAN (radio access network), a concept based on a shared radio network for all technologies (*see fact box*).

"We have entered a very interesting phase that we call 'Reinventing GSM'. As part of that, we're working to ensure that the various technologies can ▶

SOME IMPORTANT NEW GSM FUNCTIONS

▶ EDGE EVOLUTION

An evolution of EDGE technology, it enables data speeds of about 300kbps. The release that is now on its way to the market enables data speeds of up to 1.6Mbps, which is fully sufficient for many of the applications used by today's smartphones – and even higher data speeds are planned.

▶ VAMOS

With VAMOS, four voice calls per time interval can be handled

instead of the usual one voice call (or two voice calls, known as a half-rate) without a significant decline in voice quality. The result is even greater cost-efficiency, which means that GSM can remain an attractive option as the primary carrier for voice services in operators' networks.

▶ SYNCHRONIZED RADIO NETWORKS

The synchronized radio networks function ensures that base stations perceive time in the

same way and function at the same pace. This makes it possible to use the available frequency spectrum optimally, reducing disruption from mobile traffic in surrounding cells. This can in turn be used to increase the number of calls handled, thereby meeting the demand for more traffic at a lower cost in GSM networks.

▶ ALL-IP

GSM has been undergoing modernization for several years.

It now supports both IP and time division multiplex on all important interfaces.

▶ HD SOUND

HD sound, also called Adaptive Multi-Rate Wideband, uses a much wider frequency spectrum than that used for conventional telephony (50Hz to 7,000Hz compared with 300Hz to 3,400Hz). The resulting acoustic experience is much better than that associated with conventional telephony.

“We have entered a very interesting phase that we call ‘Reinventing GSM’”

Jonas Fredén



Thomas Amdahl, Senior Specialist R&D, tests hardware and software for the EVO controller node.

Did you know...

that worldwide, 40 million new users subscribe to GSM networks every month?

Source: Ericsson

► work together – for example, making sure that we can effectively move calls between them,” Fredén says.

This means that Ericsson is working in a new way – it is no longer developing each technology in isolation.

“Now we need to design our solutions together so that they work across technological boundaries,” Fredén says.

Johan Schultz is an expert in RAN

systems architecture design and has worked with GSM for almost 20 years. He says that, about two or three years ago, operators began driving the trend allowing different generations of technology to work together.

“At that time, we met one of our biggest customers to discuss the future of the radio network,” he says. “They had just discovered that 2G was still very much in demand and that this would

probably continue to be the case at least until 2020.”

Following this insight, the operator wanted equipment that could be used for all generations of technology. In addition, it wanted everything to be more environmentally sustainable, and to reduce energy-consumption rates.

“That meeting was followed by similar ones with other operators,” Schultz says. “It was the beginning of our own evolution toward technologies that work together. You could say that it laid the foundations for our continued investment in GSM.”

Another interesting trend, Schultz explains, is that operators now often buy equipment for a specific region from only one supplier. They hope that equipment purchased from a single supplier will work better than equipment purchased from different ones. Previously, operators tended to divide up their purchases according to the technology rather than the supplier.

“This trend presents Ericsson with both a challenge and an opportunity,” Schultz says. “Being familiar with a given technology is no longer enough – we’re competing on a more comprehensive level now. Companies that want to be chosen as LTE suppliers will need to ensure they have a good understanding of GSM.

“It’s fantastic to see – I thought this technology would be finished a long time ago, but it’s still growing like mad.”

✉ Text: Benny Ritzén Photo: Per Myrhed

HOW GSM WORKS IN COMBINATION WITH 3G AND LTE

REFARMING. The frequency spectrum available in the air is a limited physical resource that must be used optimally to meet continuously rising levels of mobile traffic. Part of the spectrum has been reserved for specific technologies, but because there is a limited amount of it, the possibility of also using this reserved

spectrum for other technologies has been considered for some time. This applies mostly to using the 900MHz and 1800MHz GSM bands for WCDMA and LTE respectively. This reutilization is known as rearming the spectrum.

EVO RAN. Evo RAN is Ericsson’s concept for a shared radio network

for 2G, 3G and 4G. An important part of Evo RAN is the RBS 6000 multi-standard base station, in which all three technologies are integrated. This replaces old base stations, occupies less space and consumes less energy than the old base stations, and enables the addition of new functions within and between the technologies.

Another central component in Evo RAN is the Evo Controller node, which is shared by 2G and 3G, meaning that it is a BSC and radio network controller in one. It communicates with the base stations and, to a great extent, controls the mobile traffic and how the radio network is used.

Growth engine

GSM was supposed to change the way we communicate forever. But the technology has done more than that; it has changed the way we live, do our business and become an important tool for poverty alleviation. India is a clear example.

In India, economic reforms and investments in education and infrastructure have no doubt helped improve living standards in regions affected by widespread poverty, increased migration and very low productivity.

However, the explosive increase in the distribution of mobile phones in India has also been a major catalyst for the prevailing economic upswing being witnessed in the country, according to TV Ramachandran, Resident Director, Regulatory Affairs & Government Relations, at the operator Vodafone Essar.

He explains: "In recent years, GSM has had a profound positive impact on our socio-economic development. The value of GSM is that it is one offering that meets different needs for different people. All in all, GSM has become an integral part of our daily lives, delivering multiple and manifold benefits for our country's economy."

His views are confirmed by the Indian Council for Research on International Economic Relations (ICRIER). In 2009, a study called India: the Impact of Mobile Phones concluded that there was a direct link between the number of active mobile subscriptions in the population of a specific region (mobile penetration) and the economic growth in that region.

The ICRIER study indicates that for each 10-percent rise in mobile penetration in a country or region,

the rate of local economic growth increases by at least 1.2 percentage points. These benefits kick in once the total mobile penetration in the country or region exceeds 25 percent.

Rural India, where more than 700 million people reside, provides a clear example of this trend. Due to the growing proliferation of GSM services in rural and remote areas, many of these people can now easily access valuable information using their mobile phones.

"At the very basic level, this can include text messages notifying the user of the highest and lowest daily prices for crops such as cotton at various markets," Ramachandran says. "Another type of notification lets cultivators know how they can obtain the best yield for a particular crop in various types of climates."

A few years ago, Indian farmers also gained the opportunity to subscribe to SMS weather reports and information on topics such as fertilizers, customer demand, alternative transport routes and government news.

Ramachandran says: "Everyday life in India is also full of examples of hardworking street vendors, craftsmen and other small-business owners who use their mobile phones to plan purchases, receive orders and negotiate sales prices with resellers."

Like many other key observers of the Indian telecom revolution that continues to unfold, Ramachandran emphatically believes that India's economy and its citizens will continue to benefit at several levels as the use of mobile phones becomes increasingly widespread.

"I believe GSM has a bright future, and its potential remains very high," he says. "But the next step will, of course, be an increase in mobile data traffic. Broadband penetration is still very low in India."

Text: Michael Masoliver Photo: Getty Images

TV Ramachandran, Resident Director, Regulatory Affairs & Government Relations, at the operator Vodafone Essar.



“We begin our investigation after an operational emergency is over”



ERICSSON CRASH COMMISSION

Meet the network detectives

If a **“major” incident** occurs in a customer network, don’t be surprised if these gentlemen show up. Hans Johansson and John Severson are with the Ericsson Crash Commission (ECC), a crack team of experts who conduct independent **root-cause analyses** around the world.



It’s **Friday evening** in early May, and the employees at an Ericsson facility in Western Europe are getting ready to head home. Outside the temperature has soared and, in anticipation of the weekend, so has their mood.

Inside the main building, members of the ECC work relentlessly. They have spent four days huddled elbow-to-elbow in a cramped office, peering at numbers and data sheets. Empty coffee mugs and half-eaten sandwiches are strewn about on tabletops.

In April, a national operator and Ericsson customer experienced a serious

system outage. The investigation that followed has been intense. Sticky yellow labels – the culmination of weeks of research – cover the walls. These clues document the system outage as well as the lead-up to it, and will help identify its underlying cause.

In the weeks that follow, the ECC will finalize an internal report outlining “improvement actions” designed to help avoid a repeat occurrence. These findings, just like the event itself, are often commercially sensitive.

Hans Johansson, Program Manager, Lead Investigator and one half of ►

“We focus on improvement - not blame or punishment. No one comes to work to make mistakes”

John Severson

Did you know...

that Ericsson Crash Commission is hosted by Group Function Technology & Portfolio Management, and is independent of Ericsson's product development and support organizations? This means the team can focus on conducting its root-cause analysis after a major incident occurs, always with a customer-first mindset.

► the ECC, has flown in from Texas in the US to coordinate the investigation. Last month he was in Latin America on similar investigations, and next month he'll be in North Africa.

“We investigate the root cause of major incidents affecting in-service performance,” Johansson says. “We aim to understand why an event occurred and why service was not restored as expected or planned.”

Of the many service-impacting events and issues that Ericsson addresses for customers, only a minority are investigated by the ECC. Created in 1998, the ECC currently consists of just two members. Crucially, Johansson and Severson are supported by a wider network of Ericsson experts with particular competencies and skills. Each investigation is conducted by a team

What constitutes a “major” incident?

Any event, escalated internally or from customer management, that could significantly impact the reliability or perception of Ericsson products.

is over. We add to the support teams' findings by identifying what affected network performance and assessing the effectiveness of service restoration. We then present a series of recommendations to prevent or reduce the impact of similar events.”

Severson is also a Lead Investigator and full-time member of the ECC. Based in Melbourne, Australia, he travels with Johansson to sites around the world.

“We focus on improvement – not blame or punishment,” Severson says. “No one comes to work to make mistakes.”

Understanding why any variation in network performance occurs is the key to making effective improvements to every Ericsson product. Only when investigators are able to determine why network performance is being affected will they identify measures to prevent similar events from occurring again.

In the US incident mentioned earlier, a fault had occurred during a specific call sequence. The investigation revealed this problem had grown over time in one Media Gateway before extending to all Gateways.

“Ericsson support rebooted all of the nodes at the same time to prevent this cycle from continuing,” Johansson says. “Improving Ericsson's ability to quickly identify the cause of the

problem was an action we put in place. We also ensured that the customer switches were issuing alarms correctly and that the necessary software fixes were in place.”

An investigation normally begins with three weeks of gathering evidence and the quarantining of equipment if needed. This is followed by one week at an Ericsson site close to the fault. Over the following three weeks a report is finalized and a list of actions is agreed upon.

Once a report has been released, the ECC tracks the actions to ensure full implementation. The assigned owner must provide suitable evidence that the agreed actions have been achieved before the ECC closes any case.

“It's important that our actions are implemented,” Severson says. “We want to show our customers we are listening and constantly improving.”

In Guildford, it's close to midnight when the ECC disbands. Johansson and Severson board flights destined for locations at opposite ends of the Earth. Soon they will meet again to face new challenges in another part of the world.

Text: Jonathan Rothwell Photo: Amy Parton

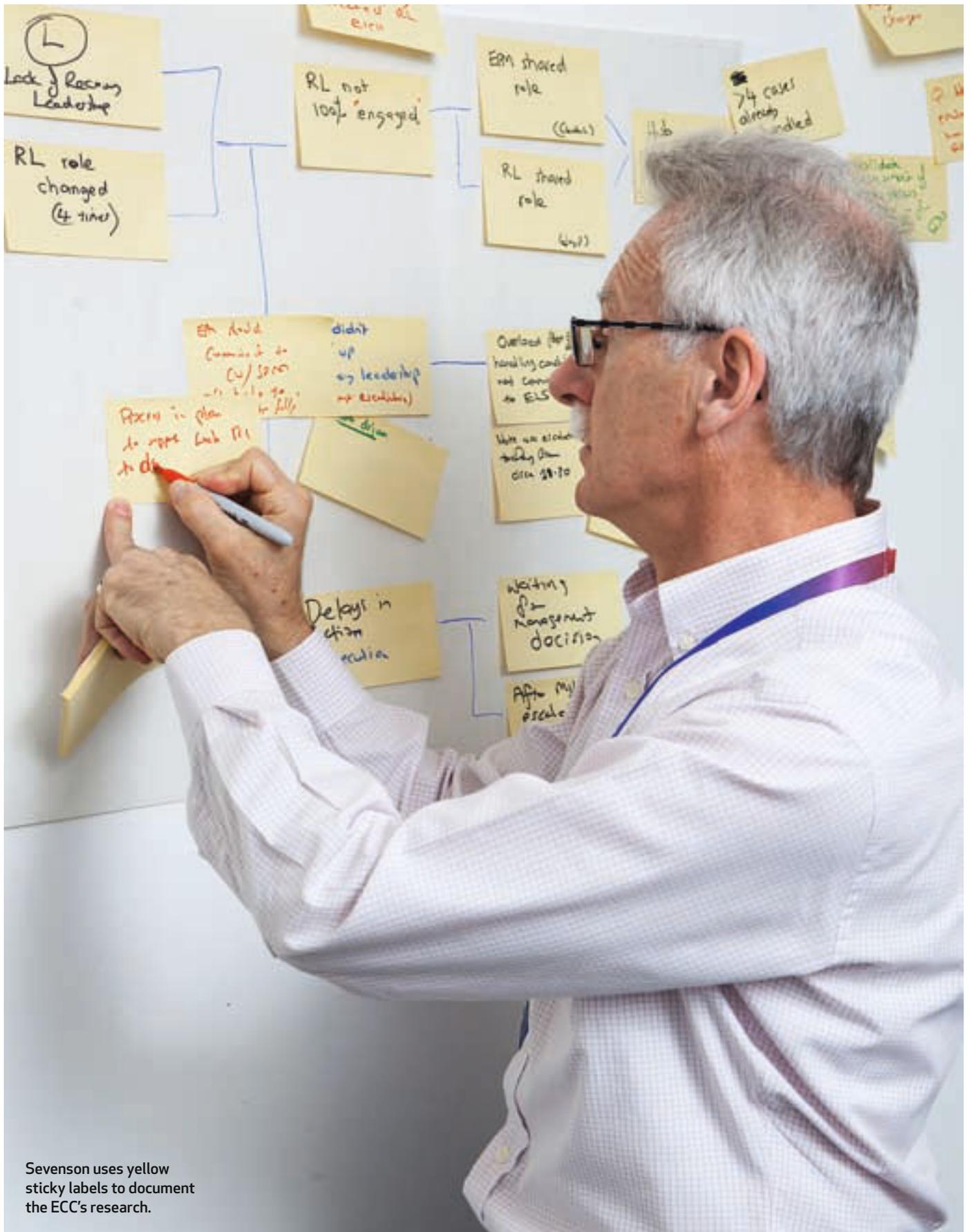


specifically tailored to the job at hand.

“A common misconception is that we are a trouble-shooting team on standby to attend to operational emergencies,” Johansson says. “Our main goal is not to fix the problems themselves: we begin our investigation after an operational emergency

3 KEY QUESTIONS FOR ECC

1. What caused the network disturbance?
2. Why did the network not recover automatically?
3. Why could it not be recovered manually, as expected?



Sevenson uses yellow sticky labels to document the ECC's research.

Twenty five years ago, Sweden, Denmark and Norway simultaneously launched the 900MHz version of the **Nordic Mobile Telephony (NMT)** system, an analog predecessor to GSM. Here, Tony Hagström, Director-General of the Swedish Telecom Administration, launches the Swedish NMT 900 system by making a phone call to the Swedish Ministry of Communications. The first commercial NMT system was launched 30 years ago in Saudi Arabia on September 1, 1981.

Source: Changing the World - The story of Lars Magnus Ericsson and his successors, The Centre for Business History





Five hot trends

Increased consumer empowerment, globalization and rising stress levels are just some of the **factors** creating a variety of new demands among consumers all over the world. Here are five of the hottest consumer **trends** identified by Ericsson ConsumerLab.

1 YOU ARE WHAT YOU DO. Visiting exotic places, or taking part in other cool experiences that you can share with friends, can define you as a person.

In our globalized society, we are constantly meeting new people in different social contexts and through various forums. This in turn means that anyone who wants to express their individuality and their unique personality can do so in a wide variety of ways.

One clear trend today is that consumers define themselves not only through their material possessions, but also, increasingly, through what they've done and seen – and where they've been. And it is becoming ever more important for people to use digital media to convey this information to others, according to ConsumerLab.

"Social status is about the personal experiences – shared or individual – that generate stories of various kinds," says Sofia Jorman, consumer trend expert at ConsumerLab.

Status updates on social-media sites such as

Facebook, Twitter or Foursquare are examples of this trend. The more buzz the stories create, the more the person's social status is enhanced.

"Experiences are priceless because they can't be removed from the individual's unique story," Jorman says.

2 MORE POWER IN CONSUMERS' HANDS. With the abundance of information available on the internet today, it has become easier for consumers to research alternative brands, products and services, and thereby make informed decisions.

Jorman says: "Consumers increasingly prefer to listen to what a trusted group of friends and relatives say about brands, products and services, rather than trusting traditional glossy advertising. In this way, the information they choose to receive has become interactive and fully transparent!"

Word of mouth spreads very quickly online and according to a recent study from ConsumerLab, 54 percent of consumers globally say

they have made a recommendation in the past 12 months.

"This behavior is a kind of counterweight to individualization in that there is a sense of collective consumer consciousness; people want to help others get good value for money and to get the best possible deal themselves," Jorman says.

3 THE WORLD AT YOUR FINGERTIPS. Mobile internet and smartphones have given consumers ubiquitous connectivity – and apps are fueling this revolution.

App usage is becoming increasingly significant, and has altered many people's behaviors and daily routines. For example, 35 percent of Android and iPhone users in the US use apps such as Facebook on their smartphones before even getting out of bed, according to a recent ConsumerLab report called From Apps to Everyday Situations.

Jorman says: "The emergence of smartphones with touchscreens has obviously added a convenience factor, and consumers now expect ►





“This trend is not going to go away. On the contrary, using smartphones is becoming increasingly important”

Sofia Jorman

► instant access to their personal content at any time.

“Because they select apps that are relevant to them and to their reality, these apps easily become a key part of their daily routines.”

This new app culture involves online content being used in new ways. It means consumers are prepared to interact with almost anything – from local authorities to vending machines, online communities and common interest groups.

4 THE HUNT FOR SIMPLICITY. In an increasingly complex world, people want devices and solutions that can simplify their lives.

Besides increasing rapidly in volume, the digital content people consume is also becoming ever more complex and diverse. This puts considerable pressure on some of us, and many people find the seemingly limitless amount of information available to them overwhelming.

ConsumerLab studies show that consumers

are reacting to this growing complexity by embracing the new breed of smartphone, a tool they feel gives them more control of their digital content, and even their lives. They use their smartphones for gathering information, booking events and reading news, as well as for both text-based and verbal communication. What’s more, people can personalize their phones according to their needs.

“This trend is not going to go away. On the contrary, using smartphones is becoming increasingly important,” Jorman says.

5 ANXIETY ON THE RISE. Consumers are becoming more anxious as a result of extensive media coverage of incidents such as natural disasters and terrorist attacks.

Today there is much cause for concern – financial crises, climate change, identity theft and terrorist attacks are among the many worries shared by modern consumers. At the same time, ConsumerLab has noticed a

sharpened focus on well-being among an increasing number of people.

Jorman says: “Since consumers realize they can’t control most threatening events, there is a growing need for them to control what they can: their body and their soul. The quest for well-being is partially a reaction to the need to protect yourself from perceived threats and increase your strength.”

As an extension to protecting their physical selves, consumers are expressing an ever-stronger need to protect their digital identity. Today, privacy and security-awareness matters are appearing more often in interviews with consumers.

As a result, consumers will become more risk-averse and anxious about the outside world; they need constant and timely reassurance, and a feeling of being in control. This means there could be great potential for security solutions that give consumers the feeling of being in control of their digital content.

Text: Johan Fritz/Michael Masoliver Illustration: Ebba Berggren

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ERICSSON

Point to Point Communication

Instructions: Read the subject category and question. Start with the five-point question and continue to the right until you have an answer. When you have gone through all six categories and guessed a year for the picture below, calculate your total score and compare it with the maximum tally, which is 35.

Subject / Points	5 points	4 points	3 points	2 points	1 point
Sport Which sport?	The first world championship tournament for men was held in 1920 during the Olympic Games.	In 1998, women competed in this sport at the Olympics for the first time.	Judges of this sport sometimes use phones and video replays to make difficult calls.	You'll need a piece of vulcanized rubber if you want to play this sport.	Wayne Gretzky is one of this sport's all-time greatest players.
Geography Which country?	The group that laid the foundations for GSM was formed in the capital of this country in 1982.	This European country has a population of about 8 million and borders on eight countries.	The assassination of this country's successor to the throne led to the outbreak of the First World War.	If you have visited this country, you might have eaten apple strudel during your stay.	This country is home to many famous classical composers, including Mozart and the Strauss family.
History Which year?	The World Health Organization removes homosexuality from its list of diseases.	Nelson Mandela is released after 27 years in prison.	Björn Svedberg resigns as Ericsson's CEO and becomes its Chairman of the Board.	West Germany becomes football world champion after beating Argentina in the finals.	Iraq invades Kuwait, an incident that results in the Gulf War.
Business Which company?	It was founded in Japan on May 7, 1946, and its original name was Tokyo Tsushin Kogyo K.K.	It manufactured the world's first transistor-based videotape player in 1961 – it weighed 200kg.	Howard Stringer is the company's CEO.	Since 1991, this company has been part of a well-known, successful joint venture.	Walkman and PlayStation are two of the company's world-famous brands.
Culture Which film?	This US thriller was released in 2005.	During their pursuit of the answer to a riddle, the main characters used Sony Ericsson mobiles.	An Italian Renaissance man lent his name to the film.	Tom Hanks played the main character, Robert Langdon.	Based on novels that became bestsellers but were the subject of criticism from Roman Catholics.
Communication Which invention?	It was originally developed for military use during the Second World War.	The first device to be known by this name was the Motorola SCR-300.	The SCR-300 was developed in 1940 and was so large that it had to be carried in a backpack.	This device has one or several half-duplex channels to transmit and receive sound.	Messages sent using this device often end with the word "over."

The picture

Which year was this photo taken?

- 5 points for the right year
- 4 points for the year +/- 1 year
- 3 points for the year +/- 2 years
- 2 points for the year +/- 3 years
- 1 point for the year +/- 5 years

TURN THE PAGE FOR THE RIGHT ANSWER.

Sport: Ice hockey; **Geography:** Austria; **History:** 1990; **Business:** Sony; **Culture:** The Da Vinci Code; **Communication:** Walkie-talkie; **Which year (photo):** 1996; Ericsson Stadium, in Charlotte, North Carolina, USA.



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