Sustainability Report 2003

ERICSSON

Content

CEO comment

Since the founding of our company almost 130 years ago, we have been driven by the conviction that communication is a basic human need. Well working communication is today mandatory for the modern existence of states, enterprises and personal lives. Communication is a prime driver for society's development and democracy. Our challenge has always been to understand how people want to communicate and how we can offer technology to make that possible.

We believe that while taking on this challenge we must also contribute actively to a sustainable future for all people and for generations to come. To us, creating a sustainable future means taking social, ethical and environmental responsibility.

Integrity and ethics has always been a significant part of our way of conducting business. Transparency in business conduct is a high priority for the whole company. Ericsson's guiding principles and fundamental policies and directives governing our relationships within the company and with our stakeholders are compiled in our Code of Business Ethics and Conduct. This Code is our promise to operate with candor and truthfulness in dealing and communicating with the marketplace and our other stakeholders. Key features of the Code include:

• Complying with laws, rules and regulations
• Encouraging the reporting of any unlawful or unethical behavior
• Treating Ericsson's employees with respect

It is expected that the company will be operated in accordance with the principles set forth in this Code and that everyone, from the members of the Board of Directors to Executive Management Team to each individual employee, will be held accountable for meeting these standards. Ericsson was also one of the first companies to support the United Nations Global Compact principles for human rights and sees these principles as a base for sound, long-term business.

Taking environmental responsibility must be incorporated in the very core of the business. For instance, our life-cycle assessment process gives us a complete overview of the environmental impact of our products. This gives us the tools to consider environmental issues in R&D, design, procurement and production and continuously improve our products and methods.

Energy efficiency is one of the key elements to reduce environmental impact. Continuous enhancement of energy efficiency is one of our key challenges – a challenge we are dedicated to meet.

Information and communication technology is one of the key elements for improved sustainability and reduced energy consumption. Communications technology can help achieve global sustainable development by enabling nations, organizations and individuals to make more efficient use of their resources. As one of the world's leading telecom suppliers we can make a significant contribution to this development.

Carl-Henric Svanberg
President and CEO, Ericsson

Acting on a vision

Ericsson believes companies should act in a responsible way, maintaining high standards in corporate governance, employee and supplier conduct, sustainability and the environment, and in humanitarian aid. Ericsson has accepted the United Nations' Global Compact principles for human rights and sees these principles as a base for sound, long-term business.

Ericsson strives to be a responsible citizen in the communities where the company does business. This requires sensitivity to social and environmental concerns and providing stakeholders with appropriate and accurate responses to inquiries.

As a global leader in the telecom industry, Ericsson believes that it is important to behave in a socially and ethically responsible way. Ericsson cares about the people who take part in the production and support of company products and services worldwide. Ericsson also strives to reduce environmental impacts.

Integrity and ethics have always been a significant part of the way Ericsson conducts its business. Operating with a strong sense of integrity is critical to maintaining trust and credibility with customers, partners, employees, shareholders and stakeholders. Ericsson contributes to economic growth and social equity and its products enable more efficient use of resources. Ericsson also believes that the communication industry can help foster positive global development.

Ericsson's vision

Ericsson's commitment to sustainable development is grounded in the Corporate Vision statement: "Ericsson believes in an 'all-communicating' world. Voice, data, images and video conveniently communicated anywhere and anytime in the world – increasing both quality of life and productivity and enabling a more resource-efficient world."

Ericsson contributes to this vision through its products and services, as well as by being an employer in 140 countries. This report illustrates the progress toward Ericsson's vision.

Actions speak louder than words

Ericsson supports the creation of a sustainable future for all people and for the generations to come. Implementing sustainability is not just about business attitude, it is also about demonstrating commitment through action. Ericsson believes that communication is a basic human right. Through leadership in communications technology, Ericsson contributes to an improved quality of life and a more resource-efficient world. Ericsson wants its vision to be translated into concrete actions, ensuring that sustainability and corporate responsibility are an integral part of all operations.

Ericsson was one of the first companies to support the UN's Global Compact initiative. Ericsson Response™ is a global initiative aimed at responding to human suffering caused by disasters. Ericsson Response™ assists organizations such as the UN, the Red Cross and the Red Crescent, with telecommunications systems and the know-how to use it in operations for fast deployment anywhere in the world.

To meet the needs of customers in high-growth markets, Ericsson has launched Ericsson Expander solutions, designed to lower the cost of introducing mobile communications. Ericsson is continuing to develop and test new products and business ideas in order to facilitate the deployment of telecom access to areas currently not served. The telecom industry can play an important role in bridging the gap between rich and poor.

Ericsson also supports independent research into electromagnetic field exposure to ensure safe products for sustainable business.

Working together

Ericsson is a major player in the telecom industry. The total resource consumption for communications products is relatively low compared with other industries. Rapid technological development will continue to increase resource efficiency, particularly in the area of communication systems' energy consumption.

Communications technology can help achieve global sustainable development by enabling organizations and individuals to make more efficient use of their resources. The industry has already made a profound impact on society – changing the production of goods and services, trade and distribution, research, education, information and media.

Ericsson co-founded the Information and Communication Industry (ICT) sector initiative – the Global e-Sustainability Initiative – to specifically address the social aspects of the digital divide.

Ericsson is optimistic about the opportunities to move forward and create a world market based on inclusiveness. This can be achieved through forming the right partnerships, including those with governments, international financial institutions, local communities and non-governmental organizations.

A communications infrastructure is key for both economic and social development in fast growing markets. Thus, development projects in the basic areas of health, food, agriculture, water, energy and others depend on communication systems to be sustainable.

Using energy efficiently

Ericsson remains at the forefront of low-energy technology developments.

Saving energy

Ericsson remains in the forefront of low-energy technology developments. Each element in the product chain is regularly assessed to identify potential energy savings. This takes place during production, distribution and supply, as well as in installation and operation. Ericsson believes that this makes sound commercial, as well as social and environmental, sense.

The growing number of users, and the total use of telecommunications systems, will lead to an increasing demand for energy. Ericsson's in-depth life-cycle assessment (LCA) process can be applied to evaluate energy use, stage-by-stage, in generic tele/datacom systems. Through this process, Ericsson has learned that the energy consumption, when its radio access networks are in use, is also the single most important aspect for environmental performance.

Ericsson is committed to meet the challenge to develop solutions that reduce environmental impact and operating costs by increasing the energy efficiency.

Ericsson understands the impact of the products the company manufactures throughout their life cycles and works continuously to make the products more environmentally friendly and resource efficient.

With Ericsson's long experience in life-cycle assessment, it is possible for the company to have a complete overview of product impact, and to be a leader in environmental responsibility.

The impact of communications

In recent years, the information and communication technology industry has been in focus as part of the public discussion on energy consumption, in part because it is a major energy consumer, but also because the industry can help offset environmental impact stemming from transportation and other factors.

The increased usage of energy within the information and communication technology industry is due to new services and applications, and extended coverage. On the other hand, new technologies have improved energy efficiency even faster. Ericsson keeps close track of these technological developments and incorporates them wherever possible in its products and systems. Used properly, communication applications have the potential to widely exceed the increase in energy consumption they create. Energy efficiency is one of the key elements to reduce environmental impacts.

Nonetheless, continuous enhancement of energy efficiency is one of Ericsson's challenges – a challenge Ericsson is dedicated to continuing to meet.

Understanding the energy issue

The whole issue of sustainability is closely tied with energy consumption. Ericsson, and many others, see information and communication technology as one of the key routes for improved sustainability and reduced energy consumption.

There is a strong relationship between the amount of energy a country consumes and its social and economic development. According to Electronic Industries Association forecasts, world energy use is predicted to grow by 59 percent by 2020.

In the direct future, close to 90 percent of all energy used will be supplied from fossil, carbon-based fuels, such as oil, gas and coal. These are not only non-renewable energy sources, their use also represents a major environmental threat. Fossil fuels create carbon dioxide when burned to release energy. When this is released into the atmosphere in large quantities, it can affect the global climate in a way that poses a serious, and well-documented, threat to not just future generations, but the present one as well.

Ericsson believes that people can benefit from mobile phone technology and its services without compromising the resource base of future generations. The increased use of communications, rather than being a threat, actually represents a great opportunity, providing a lower energy alternative to other energy consuming activities such as travel.

Achievements during 2003

Ericsson RBS 2206

The GSM RBS 2206, the successor of the RBS 2202, was designed in order to maximize the traffic capacity and radio frequency power with a limited footprint. The RBS 2206 energy efficiency is improved by 50 percent.

Example on RBS power consumption per Useful Entity (UE)

Power consumption per UE

- 3x4 TRX/GSM RBS 2206/CDU-G
- 3x4 TRX/GSM RBS 2202/CDU-G
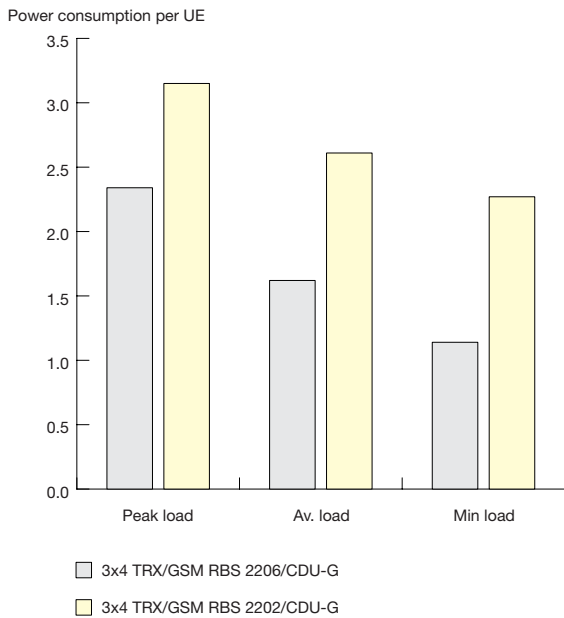
Efficiency improvement of GSM RBS 2206.

Reduced consumption of climate systems

A new concept of cabinet climate units (WCDMA outdoor cabinet 3101) which uses heat exchangers in parallel with the traditional air conditioning systems, reduces power consumption up to 20 percent compared to a traditional indoor site.

An indoor site location with air conditioning is the most common type of site. However, it is also the worst type from the environmental viewpoint, since the heat generated indoors must be moved outdoors using air conditioning. This increases consumption of the indoor radio base station by 50–65 percent. The outdoor shelter for GSM and WCDMA utilizes a more advanced solution, combining air conditioning with heat exchanger cooling, saving 10–20 percent of the power consumption. The gain is somewhat dependent on the radio base station configuration.

Reduced power consumption

Reduced power consumption is a feature in new equipment and can be achieved as well in legacy networks through new software functions. The down link power control for GSM is an example of such a feature.

The new WCDMA feature for fan control saves as much as 10 percent of energy.

Management of mass flows

Ericsson can make real strides toward reducing environmental impact by placing a strong emphasis on resource optimization and minimization of undesirable substances from its products.

Banned, restricted and observation lists

Substances in Ericsson products are managed through the Ericsson lists of substances that are banned, restricted or for observation (available at http://www.ericsson.com/sustainability/supplier_guides.shtml). Compliance with the list is ensured by inclusion in product specifications and supplier contracts. Fulfillment of the substance requirements is also part of the evaluation that occurs in connection with the volume purchasing agreement process that takes place every year.

PBB, PBDE and mercury

Three of the substances banned by the RoHS directive, PBB, PBDE and mercury, are included on the Ericsson list of banned substances and already phased out from new Ericsson products.

Cadmium

Today, cadmium is already banned in plastics, paints, surface treatment and packaging. In most other applications, such as in electronic components, cadmium has been substituted. For the remaining applications, requirements are set on the suppliers to phase out cadmium, in line with the RoHS directive.

Hexavalent chromium

Hexavalent chromium is mainly used for surface treatment of mechanics as a pre-treatment to painting as well as an electrical conductive surface on both aluminum and zinc-coated surfaces. Chromium-free alternatives to hexavalent chromium surface treatment have been identified and will be implemented gradually until July 2006.

Lead

Regarding lead in sloder, Ericsson has been conducting studies and tests of lead-free sloders and soldering methods for several years. The solder that Ericsson has decided to use instead of lead solder is a tin-copper-silver alloy. This solder has a higher melting temperature than tin-lead solder, which means there must be stricter requirements on components to comply with the raised soldering temperatures. See component requirements on soldering heat resistance

EU RoHS directive

On July 1 2006, the EU directive 2002/95/EC on restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) takes effect. It bans the use of cadmium, lead, mercury, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE), in electrical and electronic equipment. Similar legislation is being developed in other parts of the world.

and moisture sensitivity at http://www.ericsson.com/sustainability/supplier_guides.shtml. Regarding lead in components, requirements are set on the suppliers to phase out lead in line with the RoHS directive.

Halogenated flame retardants

Ericsson's ambition is to substitute halogenated flame retardants to halogen-free alternatives. The substitution is dependent on the availability of environmentally and technically sound and cost effective alternatives.

Beryllium oxide

Beryllium oxide has been phased out from new Ericsson products because of the risks it poses during handling in manufacturing and, mainly, during end-of-life treatment.

Material declaration

To keep control of products' material content, Ericsson requires material declarations from its suppliers. A Materials Data tool (database) is used to handle and store the materials' declarations. With this tool, material summaries can be made on different product levels, and consequently the compliance with the Ericsson banned, restricted and observation lists can easily be checked during the whole product design process. The database is the basis for meeting different reporting requirements in legislation and from customers, input to eco-declarations and the end-of-life treatment process. More information is available at http://materialsdata.ericsson.net.

Declarations are continuously made and stored in the database. By the end of 2003 more than 15,000 components were listed in the database.

Examples of more complex products with materials declarations are the 3G radio base station and the 3G radio network controller.

Ericsson is actively participating in the development of a common international approach for reporting material content. This work is now being done by the European Information, Communications and Consumer Electronics Technology Industry Association (EICTA) and its American and Japanese counterparts.

Growing the end-of-life treatment

Ericsson's market driven approach to recycling and disposal of products has developed into a growing business. End-of-life treatment programs are now offered on a global scale.

Evolving effective end-of-life strategies for business-to-business products is a core part of Ericsson's drive to create a safe and clean environment. Ericsson has developed its own global end-of-life treatment (EoLT) programs.

Tracking the waste
An important factor in EoLT is to have a good knowledge of the contents of the products being taken back for recycling. Ericsson operates a detailed database of product components for this purpose.

Waste is nothing more than a mixture of organic and inorganic materials, and should be regarded, valued and treated as raw material in a competitive waste-refining industry. This means normal business principles should be applied – including improving resource- and cost-efficiency, and allowing market forces on the product and waste sides to encourage effective EoLT.

Ericsson adopted this approach in its stakeholder vision and goal setting processes in 2001. Ericsson implemented special "take-back" initiatives, including the Ecology Management Service and the Ericsson Enterprise EoLT Offer.

Ecology management service
Ericsson's Ecology Management Service is a global project in which Ericsson is able to provide its customers with both regional and global support for all their EoLT programs. This has become a standard part of Ericsson's equipment offers. During 2003, Ericsson's Ecology Management Service took back over 600 tons of equipment and effectively recycled it.

Ericsson has recycling service providers appointed throughout the world. The service, originally designed to meet the needs of customers, has gradually also become an internal service for the various Ericsson units.

As Ericsson companies worldwide continue to implement their take-back processes locally, Ericsson plans to further integrate this important environmental goal into its service offering to customers. In order to support its customers even more, Ericsson Ecology Management service will be extended to provide up-to-date spare parts to customers who choose to keep their equipment beyond its normal service life. The customer will be able to rely on Ericsson to ensure a smooth transition to new technologies, when the customer decides to do so.

Ericsson will take back and recycle all the equipment being phased out in accordance with all applicable regulations and guidelines, both locally as well as globally.

Ericsson Enterprise EoLT offer
End-of-life treatment is also offered through Ericsson Enterprise. Ericsson Enterprise takes back and recycles enterprise products, such as MD110 PBXs and Business-Phone terminals and their subsequent replacement parts. In 2003, 80 tons were taken back for recycling. The extended EoLT offer, combined with new sales incentives, has continued to be a success. In special campaigns, Ericsson replaces, transports and recycles all old equipment whenever new equipment is purchased.

Integrated recource and waste management
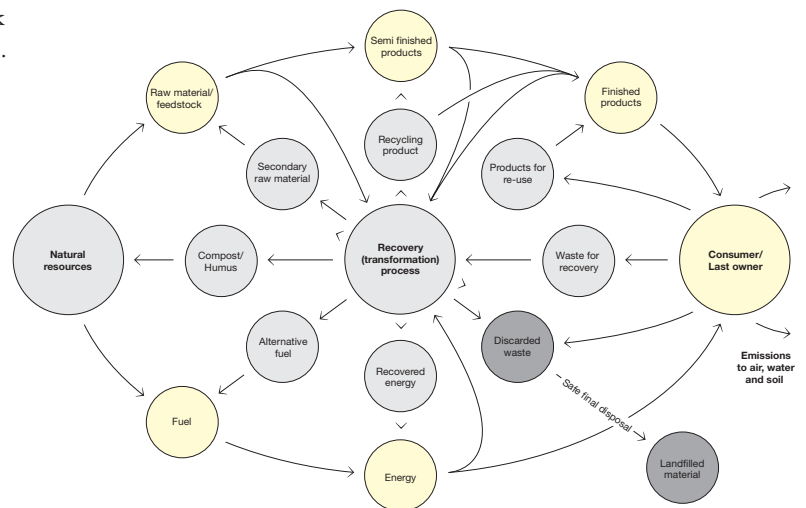
Environmental focus

The new generation of less "power-hungry" communication products
enables Ericsson to keep the total electricity consumption on the same
level, despite a significantly higher capacity in terms of information.

Reducing energy consumption is one of the most important
focus areas for Ericsson. Ericsson uses carbon dioxide (CO_2)
emission measurements as its primary environmental indi-
cator. CO_2 emissions is closely linked to fossil energy use,
and fossil energy use is closely linked to many important
environmental impact categories.

The main sources of fossil energy use over which Ericsson
has direct control have been identified as (in order of
importance): transports to and from Ericsson, operation of
offices and production sites, work related travel by air and
car.

Ericsson believes that every larger company should report
such data, no matter if the transport vehicle or building is
owned by the company or by others. Ericsson's total CO_2,
per net sales and sold capacity, as well as per main source,
can be seen in the tables "Ericsson total CO_2" and "Ericsson
total CO_2 per employee." Ericsson also takes the measure-

ments one step further with life cycle assessment (LCA)
studies. By doing so Ericsson is able to take its full environ-
mental responsibility throughout the whole product life
cycle.

Life Cycle Assessment (LCA)
LCA studies the environmental impacts throughout the
whole life cycle of the study object; i.e., from raw material
acquisition through production, use and disposal. The table
"kg CO_2/subyear in 3G wireless network" show LCA results
for 3G wireless networks in terms of total life cycle CO_2 per
subscriber and year. Wireless networks represents the largest
share of total business value at Ericsson.

The LCA results show that the share of wireless networks
of total energy use in society is less then 0.5 percent, the
total material use is less then 0.05 percent and total land
use is less then 0.005 percent.

Ericsson total CO_2
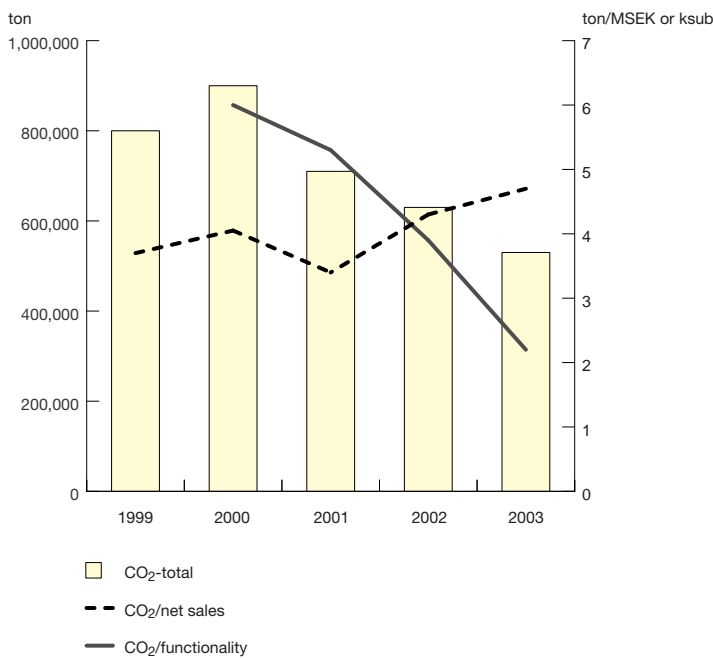
kg CO_2/subyear in 3G wireless networks
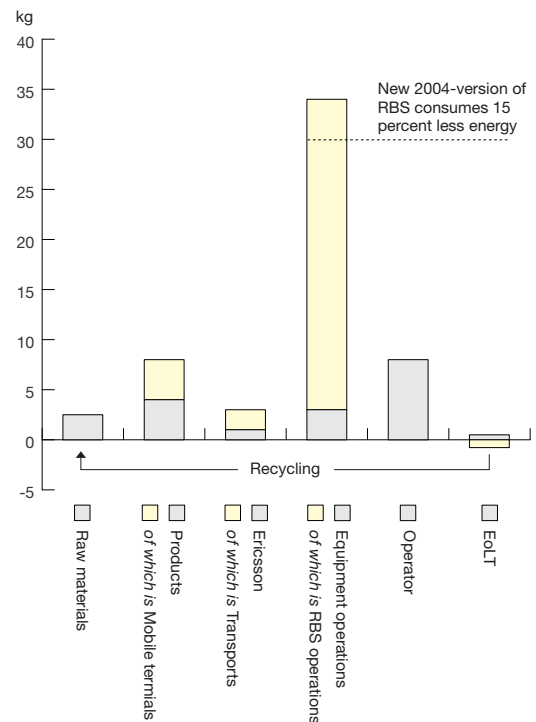
The results also show that most of Ericsson's indirect CO_2 emissions arise from energy expended by its products in use. The next most significant contributor is Ericsson's suppliers' manufacturing. It becomes apparent that Ericsson's most effective contribution to the environment lies in the way it design products and systems, and who are selected as suppliers of components and parts to Ericsson. Direct emissions from Ericsson activities represents only about 5 percent of the total life cycle CO_2.

An average subscriber in a modern wireless system emits about 50 kg life cycle CO_2 a year. This amount equals driving an average car 250 km (20 liters of gasoline), something you normally do in just a few days. Total life cycle CO_2 per subscriber in wireless networks have been reduced by more then a factor of four since the introduction of public wireless networks in the early 1980's. The 2004 release of the 3G radio base station will consume 17 percent less energy compared to the previous version.

Ericsson total CO_2 per employee

kg/employee

Car travel
Air travel
Sites: Electricity
Sites: Other energy
Transports
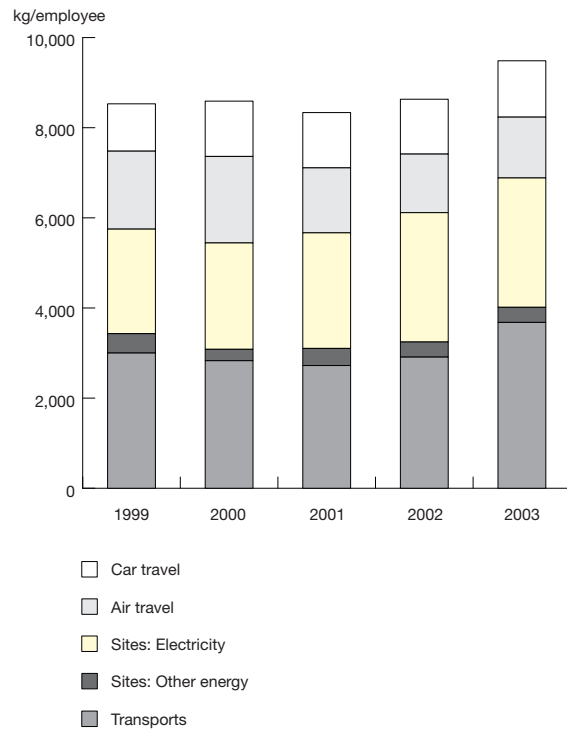
Code of Business Ethics and Conduct

A cornerstone of Ericsson's strategy is to ensure that the company is committed to quality.

Ericsson has released a Code of Business Ethics and Conduct aimed at its employees. The code defines Ericsson's guiding principles and summarizes fundamental Group policies and directives, which govern Ericsson's relationships within the company and with its stakeholders.

A cornerstone of Ericsson's strategy is to ensure that the company is committed to quality. Operational excellence includes loyal and ethical conduct by everyone, from the members of the Board of Directors and the Executive Management Team to each individual employee.

Ethical behavior fosters one of the company's greatest assets – customer and client trust. This is essential for Ericsson's business.

Everyone at Ericsson shares the commitment to the highest level of integrity in business conduct. Integrity and ethics have always been a significant part of the way Ericsson conducts business. Operating with a strong sense of integrity is critical to maintaining trust and credibility with customers, partners, employees, shareholders and other stakeholders.

Transparency in business conduct is a high priority for the whole company. The Code of Business Ethics and Conduct is Ericsson's promise to operate with candor and truthfulness in dealing and communicating with the marketplace. It is expected that the company will be operated in accordance with the principles set forth in this Code and that everyone, from the members of the Board of Directors and the Executive Management Team to each individual employee, will be held accountable for meeting these standards.

The Code of Business Ethics and Conduct contains rules regarding individual and peer responsibilities, as well as Ericsson's responsibilities to employees, customers, suppliers, shareholders and other stakeholders.

Key features of the Code include:
• Complying with laws, rules and regulations (including insider trading laws)
• Protecting Ericsson's confidential and other proprietary information and that of its customers' and vendors'
• Protection and proper use of company assets
• Treating Ericsson's employees with mutual respect

• Dealing with conflicts of interest
• Promoting full, fair, accurate, timely, and understandable disclosure in financial reports and other public communication
• Protecting the environment
• Encouraging the reporting of any unlawful or unethical behavior

Code of Conduct
Ericsson's Code of Conduct regarding basic working conditions and the environment protects the rights of people working with the company's products and services, including those working for Ericsson's suppliers. To the extent justifiable, Ericsson will discontinue cooperation with any party persisting in non-compliance.

The Ericsson Code of Conduct includes directives on:
• Workers' rights, including human rights and discrimination, fair wages and working hours
• Safety, including workplace conditions
• Environment, with suppliers required to comply with environmental laws and Ericsson's environmental requirements
• Child labor, based on the child labor code in the UN Convention on the Rights of the Child, article 32.1
• Monitoring, with all suppliers obliged to inform us about their operations

Standards adherence
Ericsson applies strict environmental, health and safety standards, developing new standards when necessary.

Making a difference

Ericsson is committed to being a responsible member of the global
society and contributing positively to the communities in which
the company operates.

Using Ericsson's strengths to help others
Severe disasters are a common global problem. Ericsson can
make a difference in this area based on the company's tech-
nological leadership in wireless communication; its global
reach, through its presence in 140 countries; and its history
of response to world disasters.

Ericsson Response™ is a global initiative aimed at
responding to and alleviating human suffering caused by
disasters. The goal of the program is to help improve the
quality, speed and effectiveness of disaster response world-
wide. Ericsson Response assists disaster relief operations in
their efforts to provide humanitarian relief in areas of urgent
need by supplying specialist volunteers and communications
equipment.

The initiative formalizes Ericsson's commitment to disas-
ter relief, based on its previous involvement and experience
in various disaster response efforts throughout the world.

Through Ericsson's endorsement of the United Nations'
Global Compact, the company is committed to increase
awareness of the issues associated with disasters around the
world.

By taking these steps, Ericsson believes it can provide
added value and improve customer relationships, while dis-
covering and developing new partnerships and opportuni-
ties along the way. In addition, the company believes that
such an initiative facilitates recruitment, helps to retain
employees and increases employee pride and motivation.
Wherever possible, Ericsson strongly encourages and em-
powers employees to make a positive difference to society.

While there are numerous examples of this philosophy in
action, here are just a few highlights from Ericsson's relief
activities during 2003.

Earthquake in Bam, Iran
Following the major earthquake in December, Ericsson
Response in Turkey sent a complete GSM mobile commu-
nications systems to meet the emergency communication
needs in the disaster area. A full communications network
was up and running within 24 hours after deployment. The
network was operational between December 31 and January
10 and could accommodate 5,000 subscribers. Free mobile

phones and SIM cards were distributed to humanitarian
organizations and relief workers. Ericsson Response volun-
teers from Turkey and Iran were on site in order to support
the relief efforts.

Humanitarian assistance to Liberia
As a result of civil unrest in Liberia, hundreds of thousands
of people fled their homes and were without adequate food
supplies. Two Ericsson Response volunteers helped the UN
World Food Programme to re-establish IT and telecom-
munications systems in their looted offices in and around
Monrovia, so that food could be provided.

Earthquake in Algeria
Ericsson Response assisted the Swedish Search and Rescue
team and the International Federation of Red Cross and
Red Crescent Societies ouside of Alger after the severe
earthquake in Algeria in May. Telecommunications were cut
in the affected areas and Ericsson Response worked to
strengthen the network to support relief operations.

Humanitarian assistance to Iraq
Ericsson Response worked with the UN World Food
Programme at the aid agency's Fast ICT Response team
(FITTEST) based in Dubai, helping to prepare for the
humanitarian operation in Iraq.

Cooperation with leading relief organizations
In its cooperation with the United Nations, Ericsson
Response is known as "First on the Ground." Ericsson's
"First on the Ground" concept is designed as an in-kind
contribution at the disposal of the UN to provide and
maintain effective mobile communications and expertise in
disaster response operations.

The partnership involves UN agencies that address emer-
gency response and mitigation as well as the International
Federation of Red Cross and Red Crescent Societies (IFRC).

In 2003 Ericsson Response signed an agreement with the
UN's World Food Programme to use Ericsson volunteers in
the World Food Programme's humanitarian operations
worldwide.

Technical support to relief organizations

In addition to Ericsson's ongoing activities with major international relief organizations, the company constantly seeks new ways to improve its ability to make a difference. Ericsson has created a Technical Reference Group that meets twice a year to identify needs and develop technical proposals and applications for more efficient disaster response communications.

During 2003, extensive research was done on a new network solution which will help provide local, as well as secure data communications, for users in the field during emergency response operations. During 2004, this solution will be tested together with the relevant UN agencies.

Voluntary and local initiatives

Complementing the programs and activities originating from Ericsson's corporate office are the many local initiatives championed by employees around the world. Ericsson's local companies support the needs of their communities through Ericsson Response as well as a broad range of other activities, including cultural initiatives, educational and school programs, regional charities, local community causes, and even the protection and preservation of rare animal and plant species.

Support is provided in the form of financial aid, as well as through non-monetary communication, such as voluntary work and the donations of goods.

Local Red Cross and Red Crescent support

Over many areas, Ericsson's international and local relief efforts have worked hand-in-hand. For example, as a result of the company's joint activities with the International Federation of Red Cross and Red Crescent Societies, many local Ericsson offices expressed interest in developing programs in their markets, in conjunction with their local Red Cross or Red Crescent organizations. For instance, during 2003, local cooperative agreements were developed in northern Latin America, Central America and the Caribbean. In these areas, local Ericsson volunteers and volunteers from Ericsson Spain have been involved in activities supporting the Red Cross or Red Crescent during the year.

Ericsson Response™ is a trademark owned by Telefonaktiebolaget LM Ericsson.

Safety is key

By using design, testing and installation guidelines Ericsson ensure that its products comply with all relevant safety standards and the company supports independent research on possible health effects related to wireless communications.

Electromagnetic field exposure

Since Ericsson's first involvement in the wireless industry, the company has not only ensured that its products are designed and tested to comply with all relevant safety standards but has worked to support independent research on electromagnetic field (EMF) exposure and health. In 2003, Ericsson's total funding of independent EMF research was approximately SEK 6 million (EUR 0.7 million).

Whilst there have been extensive studies by public health authorities and independent groups, the balance of scientific evidence does not demonstrate any negative health effects associated with radio wave exposure either from mobile phones or radio base stations.

In the last ten years more than 400 studies have been conducted, which are directly related to mobile communications. Recently, several expert groups and health authorities worldwide have reviewed this research. The World Health Organization (WHO) has summarized the current status in the following manner: "None of the recent reviews have concluded that exposure to RF fields from mobile phones or their base stations causes any adverse health consequence."

During 2003 additional research updates were produced in France, Norway and Sweden. The conclusions were in line with previous major expert reports; i.e., it was reiterated that the available scientific evidence does not show any health probelms associated with the use of mobile telephony.

Research support

Ericsson, however, also acknowledges the recommendation from expert groups and health authorities that additional research is needed to address identified knowledge gaps and thereby further increase the knowledge about radio waves and health. Although Ericsson does not conduct its own medical research, Ericsson actively supports the efforts of other independent organizations, such as the World Health Organization, which has established a research agenda with prioritized EMF research.

Currently Ericsson co-sponsors in excess 50 different on-going or planned projects in Europe, USA and Asia with a total cost of more than EUR 40 million.

The research projects that Ericsson currently supports include:

- INTERPHONE – an international epidemiological case control study on the potential links between cancer and the use of mobile phones. Involving 13 countries, it is part of the European Commission's fifth framework research program
- PERFORM-A – a series of studies across five European countries into possible health effects related to mobile phones and radio base stations. This is also within the European Commission's fifth framework research program
- MTHR – Mobile Telecommunications and Health Research Programme, a comprehensive program set up by the UK Government and jointly funded by government and industry

Mobile phone manufacturers and operators, as well as Ericsson, contribute approximately half of the cost of funding these projects.

Information initiatives

Ericsson is committed to providing adequate information about health and safety that help answer questions people may have.

For example, since 2001 relevant information about radio wave exposure, including the measured maximum SAR value, is provided with all the new mobile phone models. The information is also available on Sony Ericsson Mobile Communications' web site (www.sonyericsson.com).

Since 2002, RF safety information and guidelines are included in the documentation for all new Ericsson GSM and WCDMA base station products. Ericsson is also supporting mobile network operators in their dialog with different stakeholders when installing radio base stations and antennas.

In 2003, Ericsson further extended its information package on mobile communications and health. A comprehensive article on the subject was published in the journal Ericsson Review, and information on safety issues related to in-building mobile systems is available for customers and other stakeholders.

Additional information regarding EMF is available from Ericsson's website (www.ericsson.com/health).

Ericsson as an employer

As an employer of choice, Ericsson offers opportunities for its employees to develop and work in a global leading company.

A culture of performance

A question a company should continuously ask itself is "how effective are we?" Ericsson asks itself that question and has implemented a performance management process to help measure its effectiveness and aid in its efforts to encourage a performance culture.

In order for Ericsson to measure how effective the company is, information is gathered from a variety of sources and is measured against pre-defined objectives. The results are communicated to the employees in order to establish a common understanding of the company's progress in relation to customers' expectations.

Competence when it is needed

A challenge for every company is to have the right competence where and when it is needed. Ericsson has a systematic way to benchmark existing competencies against those that are anticipated to be required in the near future. With the complexity of today's tasks, individual competence is not enough to excel. It is important to work effectively in teams and share knowledge through participation in competence networks.

Currently, Ericsson has five large knowledge networks for efficient internal, and sometimes also external, sharing of information. The largest has around 1,000 people and is built for customer services employees.

Ericsson is a knowledge-based corporation requiring continuous updating and development of skills. Ericsson uses a variety of ways to develop the talent of its employees, including formal training provided by preferred suppliers to more informal opportunities for job rotation and international assignments.

One of Ericsson's goals is to further enhance learning through focus on business goals supported by cooperation with academies worldwide. Ericsson also provides learning opportunities through net-based modules on the intranet. Job rotation is used and encouraged as a powerful tool to enhance and broaden the competence of its employees.

As a multinational corporation, Ericsson views it as extremely important that its employees are able to work in multicultural environments. Ericsson use contract assignments as a way of enhancing and developing this skill. At year-end 2003, there were 700 employees on long-term assignment outside their home countries.

Most contract assignments are advertised within the company and those accepting the opportunity to work abroad are offered a guaranteed return to their "home" organization. The opportunity to live and work abroad is viewed as a very attractive aspect of employment with Ericsson.

Diversity

Ericsson strives to have a diverse workforce. When reviewing current management, Ericsson has recognized areas of improvement, such as internationalization; i.e., more non-Swedish managers, and more female managers. Ericsson is constantly reviewing its resources in order to achieve improvements in these identified areas.

Nearly 30 percent of Ericsson's workforce is female. By striving for a more diversified next generation of manager, Ericsson works to encourage all its employees to develop their skills within Ericsson. Since 1999, Ericsson runs the Ericsson European Equality Award with the objective to stimulate actions that support the work for equality within Ericsson.

Discrimination

Ericsson has clear and far-reaching policies against discrimination, which are respected and part of the culture of the company. Ericsson believes that employees should not be discriminated against because of age, race, gender, religion, sexual orientation, martial or maternity status, political opinion or ethnic background.

Employer of choice

According to a yearly survey conducted by Universum, an international research and management consulting company specializing in the career expectations of today's university students and young professionals, Ericsson is ranked the preferred employer in Sweden among the engineering students, and as number six among computer/IT students.

The share of Ericsson employees with academic degrees is steadily increasing and, during the period between 1998 and 2003, the share went from 37 to 50 percent. In some countries in Central Europe and Asia, the share is sometimes as high as 80 percent.

Employee satisfaction

As part of Ericsson's efforts to be a good employer, thoughts and opinions of its employees are actively canvassed through an annual global employee survey. The survey provides Ericsson with an in-depth understanding of its employees' opinions in a variety of areas.

Through the survey, each Ericsson manager receives anonymous feedback from his/her employees, which is used, following discussions, as the basis for planning and improvements. Ericsson also benchmarks these indices against other technology industries globally.

Sharing the rewards and motivating long-term contribution

Ericsson companies around the world develop local remuneration programs that are competitive in their respective markets and geographic areas. These take into consideration the overall Ericsson policy, including the global incentive plans, as well as local practices in each country.

In addition to wages and benefits paid to employees, Ericsson manages a number of global incentives, coordinated centrally, which are developed to motivate performance, reward achievement and encourage long-term commitment to the company.

During 2003, the Ericsson employee incentive plans included a Short-Term Incentive Plan and a Stock Purchase Plan.

The Short-Term Incentive Plan rewards achievement of specific targets at business and team levels and defines a global norm for incentives as a flexible part of remuneration to be applied throughout the company.

The Stock Purchase Plan encourages long-term commitment and reward employees with ownership opportunities.

Leadership

At Ericsson, each unit and company shall identify future managers at an early stage in their careers. Once someone has been identified as having management potential, his/her background, achievements, experience and development plans are collected in a central database for future assessment.

Ericsson offer a complete set of basic leadership programs for new managers, a selected portfolio of courses for experienced managers, and a global assessment center and three executive development programs for those considered Ericsson Executive Resources.

The aim of these programs is to continually develop Ericsson managers and executives in order to create the right managerial culture in the organization, as well as have the right competence at the right time in order to make Ericsson more competitive and successful.

In addition to Ericsson's own programs, senior executives are offered training and development opportunities developed in conjunction with world-class universities and business schools.

Note on values and calculations:
This is Ericsson's third sustainability report and systems for data gathering for some dimensions are yet to be finalized. Much of the information above is based on a survey covering 80 percent of our employees. Statistical errors may occur and information may be missing. Ericsson is constantly striving to improve the quality of this data.

Ericsson and Society

Ericsson strives to be a responsible citizen in the communities where the company does business.

Voluntary contributions in Ericsson's local markets

Ericsson and its employees have made thousands of contributions to individual communities. Rather than try to summarize them all, here is a brief overview of some of the ways in which Ericsson employees around the world have enriched their communities. The stories chosen are not the biggest or even necessarily the best, but a representative sample of what Ericsson does.

Helping children

In Portugal, Ericsson donated the amount the company would have spent on Christmas gifts to two children's shelters – Casa do Parque and Casa da Encosta. These are temporary relief shelters for children in danger and belong to the Portuguese Association for the Family and Children Rights (APDMF).

In Spain, Ericsson donated money to Aldeas Infantiles, a member of UNESCO and a permanent adviser at the Economic and Social Commission of the United Nations, which currently helps more than 200,000 children and young people in over a 130 countries.

Promoting learning

Ericsson was the first foreign enterprise responding to the call for donations for the China Children Charity Day from the China Charity Federation & China Children and the Teenager's Fund. The China Children Charity Day helps young people who have dropped out of school to continue their studies.

In Russia, Ericsson, in cooperation with the AS Popov Central Communication Museum in St. Petersburg, donated 18 computers for the museum's new Internet café. The company also provided computers for the historical and modern technology sections of the exhibition.

In the United States, Ericsson hosted a Technical Career Day in Richardson, Texas, to teach local school children how scientific knowledge translates into technical careers.

Ericsson co-sponsors the Costa Rica World Youth Exchange Program. The program allows teenagers from Sweden and Costa Rica to exchange experiences while working in social programs.

Preserving the environment

In Portugal, a group of Ericsson volunteers participated in the "Cleaning the Beach"-project. During the day, the Ericsson volunteers talked about environmental awareness in waste reuse and recycling, and demonstrated techniques for making recycled paper and building musical instruments from waste found at the beach.

Contributing to society

Ericsson China donated a mobile emergency system to the Beijing Government for use in SARS treatment at a hospital. In just one day, five Ericsson volunteers installed the system and had it operating.

Ericsson in Poland donated office material and toys to the Children's Hospital in Warsaw and also replaced 40-year old windows at a school in Ruciane-Nida.

In Colombia, Ericsson donated 250 computers and printers to a governmental social program – Computers for Education. The program distributes the computers and printers to schools, which cannot afford such equipment.

Communication for many more users

Through improved communications solutions, Ericsson encourages sustainable economic development in markets across the globe, making it possible for people in areas previously not served, to communicate with the rest of the world.

Making communications technology more accessible, affordable and scalable to meet the needs of emerging markets plays an essential role in developing sustainable world economies.

Today, only around 20 percent of the world's population has a mobile subscription. The majority has no established telecommunications infrastructure and little access to other communications technologies. Over half of the world's population has never made a phone call. Bringing communication capability to isolated regions supports an inclusive society and encourages expansion of local markets.

There are 1.34 billion mobile subscribers worldwide today, and that is expected to grow to 2 billion by 2007. Ericsson believes that its solutions for operators in high-growth and emerging markets could even increase that growth rate. About 80 percent of this growth is expected to occur in new, fast-growing markets in the Asia-Pacific region, Africa, Central and Eastern Europe, the Middle East, Latin America and China, and will entail providing coverage to areas not previously served.

The main focus of Ericsson's offering for these markets is to bring affordable mobile services within the reach of many more users. The Ericsson Expander portfolio enables operators to address segments in high-growth markets through cost-efficient and scalable GSM/EDGE and CDMA2000 solutions.

Meet the growing demand cost effectively

In developing its Expander solutions portfolio, Ericsson has examined and discussed the needs of both users and the operators who are targeting new growth segments worldwide. Ericsson has seen strong interest in these solutions from China, India, Indonesia, Russia, Brazil, Mexico, Philippines, Pakistan, Vietnam, Thailand, Egypt, Nigeria and other countries in Africa, as well as from countries such as the United States, where there is a need for rural coverage.

One of the key objectives behind the introduction of the Expander solutions portfolio is to reduce the total cost of ownership for operators of both GSM/EDGE and CDMA2000 networks. As well as addressing actual operating and capital costs, this also means delivering high-quality performance with scalable coverage and capacity to meet growing demand cost effectively.

Coverage is king

Subscribers in high-growth markets fall into two main categories. First, there are the potential subscribers in urban areas or large cities, where there is a need for capacity expansion. Second, there are the potential users who live in areas with little or no existing mobile coverage, such as rural communities, where there is a need to provide initial coverage cost effectively with built-in expansion possibilities.

In the first segment, the likely growth in mobile traffic is putting intense pressure on the limited amount of capacity available.

In the second segment, network operators are facing the challenge of providing cost-efficient transmission to the more remote areas, which can have an impact on the average cost per site. In both segments, it is increasingly important to find cost effective coverage solutions in order to meet subscriber growth and network expansion needs of high-growth markets.

Apart from network infrastructure costs, there are other issues that must be dealt with, including subscriber acquisition and the availability of low cost terminals; charging systems; managing credit risk and preventing revenue loss; distribution channels; subscriber retention and management; service differentiation and, of course, capital and operating costs in the network. Other key issues include transmission flexibility, growing network complexity and network rollout and tuning.

Ericsson solutions for new high-growth markets

The Ericsson Expander solutions for GSM/EDGE and CDMA2000 offer complete mobile solutions for high-growth markets. They include radio and core networks, service and connectivity layers, as well as network management systems. Tailored business and technology consulting services are also available from Ericsson to support operators

in developing business cases and designing networks with optimal quality and performance.

The Ericsson approach is based on the following principles:

• Maintaining a broad portfolio of radio base station configurations to meet different network requirements. Reliable radio features are adaptable to cope with different coverage and capacity needs, with dramatically fewer sites than Ericsson's main competitors

• Offering a unique range of service layer offerings, such as solutions to cost effectively capture the growing number of prepaid subscribers (95 percent + in some markets)

• Offering a scalable core mobile network, that is scalable from small single nodes to large configurations with pooled resources

• Using standardized, pre-fabricated and tested core and radio site packages which enables simple and fast roll-out

• Improving network scalability to reduce initial capital expenses and transmission costs

• Making it easier to manage and service the network, thus reducing operating expenses

• Providing managed service offerings, optionally based on shared network infrastructure

Fewer radio sites required

Ericsson Expander offers lower total ownership costs while maintaining cost-efficient coverage with mainstream high-quality products, rather than cutting costs through reducing functionality and quality of the radio equipment. Minimizing the number of radio sites delivers far better savings than installing cheap radio base solutions.

To enable operators to serve the growing number of pre-paid subscribers in high-growth markets profitably, the Ericsson GSM/EDGE Expander solution includes the Ericsson Charging System. Real-time billing of both pre-paid and post-paid subscribers reduces the cost of ownership by eliminating the need for a separate billing system. It also improves financial risk management, while protecting existing investments.

Ericsson is currently working with many terminal vendors to ensure a good supply of terminals for this segment. Sony Ericsson is already supplying entry-level products like the T100 and T200 to many markets worldwide.

CDMA 450 MHz in rural areas

Ericsson has expanded its current CDMA2000 network portfolio with the addition of 450 MHz. This is ideally suited to provide 3G support to rural and remote locations. Adding support for 450 MHz to the CDMA portfolio further extends Ericsson's solution for meeting the changing market requirements.

The significance of the 450 MHz frequency range is simple: because lower-frequency radio waves travel further, fewer base stations are required. This translates into lower ownership costs, high-quality performance for voice, greater data capabilities, and scalable coverage.

Operators can thus meet growing needs for capacity with an offering that is particularly well-suited to attract new subscribers in rural regions.

Reaching toward the future

To help the world progress toward sustainability, thought must be given to man's long-term development in partnership with the environment.

Ericsson actively develops products and services that support resource efficiency. Already highlighted in this report are a number of services that save human and environmental resources.

Ericsson believes that the multimedia capabilities of third generation (3G) and coming generations of mobile networks will encourage significant advances in sustainability, enabling more efficient use of the world's resources.

Ericsson is a leading force behind the successful development of mobile telephony. This leadership role is supported by extensive research and development commitments that constantly monitor current and future trends while investigating, expanding and evolving new technologies that may be beneficial in both the short- and long-term.

Planning for the long-term
Ericsson analyzes work trends as well as changing trends in society and emerging technologies to ensure that its solutions support a sustainable society. To encourage these applications, Ericsson engages in business partnerships, joint ventures and collaborations.

Analysis of long-term issues are key inputs to the strategic planning process.

The ultimate challenge for the communications industry will be to ensure that its technology addresses the needs of a sustainable world. The technology needs to be easy to access and simple to use – so that mobile users can control and optimize their time and activities – while minimizing costs and resource consumption.

Key economic figures

Economic and financial results are not the same thing. Financial results concern the value of transactions that pass through a company's books. Economic results, on the other hand, extend beyond the boundaries of a single organization and take into account activities in, and outcomes for, societies at large.

Ericsson conducts business throughout the world and is subject to the effects of general global economic conditions as well as conditions unique to a specific country and region. In particular, Ericsson is affected most by the market conditions within the telecom industry.

To read more about Ericsson's operational and financial performance, please see the 2003 Annual Report at www.ericsson.com/investors/annual_report/2003/downloads.shtml.

Net sales 2003–2001

MSEK	2003	2002[1]	2001[1]
Net Sales	117,738	145,773	231,839

[1] Restated for changed accounting principles

Net income 2003–2001

MSEK	2003	2002[1]	2001[1]
Net Income	-10,844	-19,013	-21,264

[1] Restated for changed accounting principles

Wages and salaries per geographical area

	Consolidated		Parent Company	
	2003	2002	2003	2002
Europe, Middle East and Africa	18,176	22,979	757	814
North America	3,718	6,100	-	-
Latin America	861	1,571	12	11
Asia Pacific	2,074	3,000	-	-
Total	24,829	33,650	769	825

Return on capital employed 2003–2001

Percentage	2003	2002	2001
Return on capital employed	-5.9%	-11.3%	-14.3%

Number of employees by quarter 2003

	0303	0306	0309	0312
Systems	53,532	50,510	46,669	45,176
Other operations	7,047	6,786	6,409	6,110
Unallocated	361	348	323	297
Total	60,940	57,644	53,401	51,583

Ericsson research and development

Ericsson believes that future success depends largely on continued ability to deliver systems and services based on advanced technologies. Ericsson continues to have one of the largest R&D programs in the industry, with major investment in technology related to future business.

R&D expenditures, excluding restructuring costs and capitalization

	2003	2002	2001
R&D, SEK billion	23.2	29.3	43.1
As percentage of sales	20%	20%	19%
Number of R&D sites	25	30	70
Employees in R&D	16,500	20,500	25,200

Additions to tangible assets 2003–2001

	2003	2002	2001
Additions to tangible assets	3,493	2,738	8,726

Further details of Ericsson's research and development, as well as social and educational investments, are outlined in the Annual Report, which provides in-depth analysis of financial and economic performance. It also provides information on ownership, the Board of Directors and other company statistics.

Environmental and regulatory matters

Ericsson is subject to certain environmental, health and safety laws and regulations that affect operations, facilities and products in each place the company operates. Ericsson's policy is to comply with environmental requirements and to provide workplaces that are safe, environmentally sound and that will not harm the health or environment of the communities where the company operates. Ericsson complies fully with all environmental and health safety laws and regulations applicable to operations and business activities.

To read more, please see the 2003 Annual Report at www.ericsson.com/investors/annual_report/2003/downloads.shtml and see the sections on: "Risk Factors – Risks Associated with our Business" and "Sustainability and Environment" in the Board of Directors' Report.

Appendix

Environmental data

Ericsson does not only measure energy and CO_2, but also water and land use, waste fractions, emissions to air and water, use of chemicals and materials used in production and in products.

Ericsson has developed and carried out these measurements for over 10 years.

General trends

Total CO_2 emissions is constantly decreasing as a direct result of decreasing energy consumption. The overall energy and CO_2 emission decrease is large, measured per produced capacity, and just about every other indicator shows a steady decrease for Ericsson in total.

Some indicators are a result from division with net sales or number of employees. Due to the changes the industry has gone through as a whole for the last 2–3 years, these indicators should be used with caution.

Total figures

	2003	2002	2001	
Employees				
- Average	58,000	73,400	95,400	pers
- Year-end	51,500	64,600	85,200	pers
Net sales	118,000	146,000	211,000	MSEK
Electricity	580	729	877	GWh
Other energy	130	146	167	GWh
Indoor area	n.m.	3.2	3.3	km2
Land area	n.m.	5.5	5.2	km2
Water	n.m.	2.5	2.8	Mton
Air travel	650	795	1,024	Mpkm
Car travel	380	470	550	Mpkm
Air transports	251	256	275	Mtonkm
Road transports	110	110	150	Mtonkm
Waste, total	27,000	29,900	37,300	ton
Production				
emissions, total	10	15	27	ton
Produced weight	75,000	77,500	87,500	ton
Produced capacity	250	165	135	Msub
CO2-total	550,000	640,000	710,000	ton
- Office activities	310,000	386,000	424,000	ton
- Production and trp	240,000	248,000	287,000	ton

Emissions to air and water have not been measured completely during 2003. Requirements from monitoring authorities have been withdrawn as Ericsson's emission levels are so low. Outsourcing of manufacturing activities is another reason why Ericsson's emissions of metals is close to zero.

Emissions to air

* Estimated figures for 2003
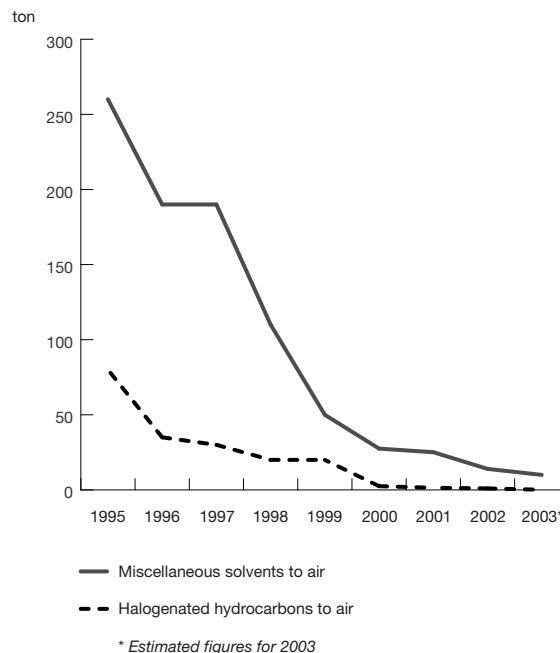
Metals to water
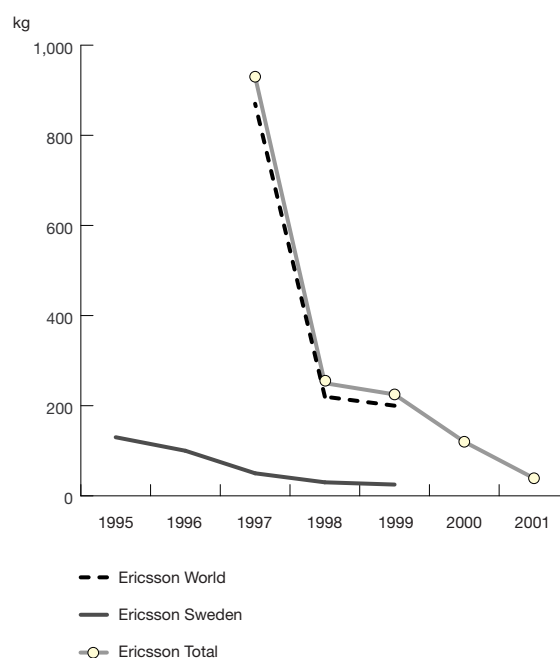
Measured per employee, most indicators show a slight increase. A maintained production, the produced capacity is in fact larger, with fewer employees makes transports increase per employee. Ericsson has been able to reduce air travel per employee by up to 40 percent.
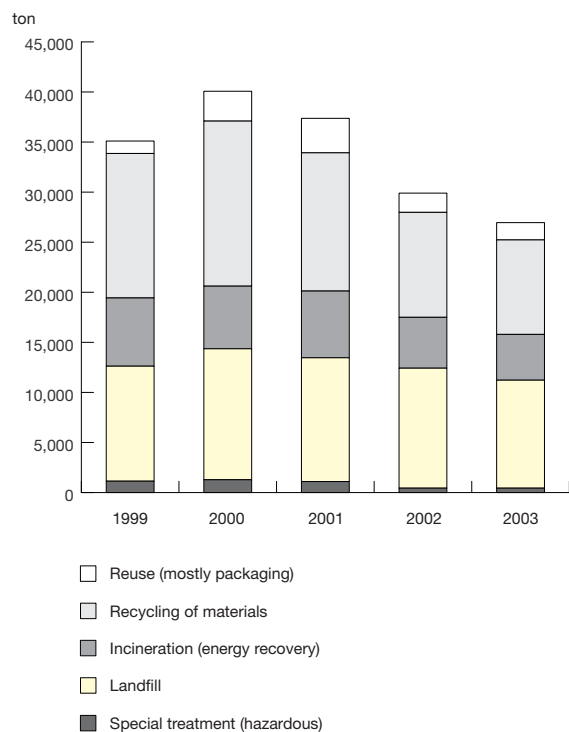
Ericsson

	1998	2003
Employees, pers	101,000	58,000
Energy consumption, GWh	1,200	710
Air transports, Mtonkm	290	251
CO2-emissions, ton	750,000	550,000
Produced weight, ton	125,000	77,500
Produced capacity, Msub	80	250

Improvements over time: 1998 compared to 2003

About 3.5 times the capacity were produced 2003 compared to 1998. This was achieved with 40 percent fewer employees, 40 percent less energy consumption, 40 percent less produced weight and less air transports required, which is quite a remarkable achievement. Ericsson emitted 9,000 tons CO_2 per million subscriber capacity produced in 1998, but only 2,200 tons in 2003.

Ericsson total waste

ton

- ☐ Reuse (mostly packaging)
- ☐ Recycling of materials
- ▨ Incineration (energy recovery)
- ☐ Landfill
- ▨ Special treatment (hazardous)

**How to improve power efficiency of real networks**

Studies have shown that in order to improve power efficiency, infrastructure suppliers need to understand the network performance; i.e., the power consumption of different parts of the network, the impact of climate and traffic and how to measure the total power efficiency of the newtwork.

Real network modeling

Ericsson has gained significant field experience from its environmental life cycle assessment studies (LCA) done in the mid-1990's. In the studies, operational site and network data was gathered from the field. Since then, Ericsson has developed a method to transfer the data collected from the lab test to the company's products and power consumption in the field.

The power consumption depends on configuration, load and environmental factors. By using a number of relevant models for radio access network, site equipment, traffic load and environmental temperatures, annual average power consumption can be adequately estimated for a real operator network. Knowing the conditions, radio access network power efficiency can be estimated from product lab test data.

Power efficiency of radio access network (3G)
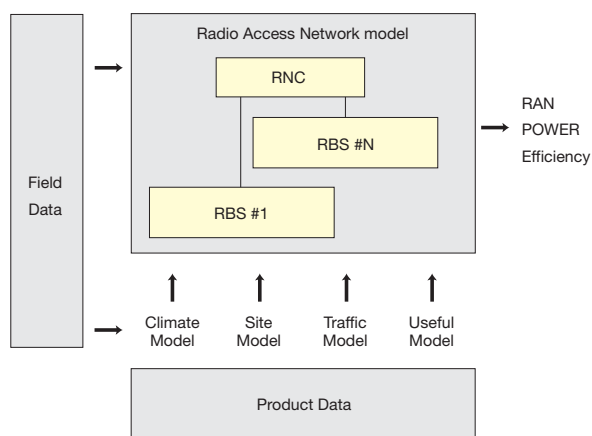
Key elements for radio access network power efficiency estimation

The figure shows the different models used. With them, the power efficiency of new products and complete radio access networks can be calculated, allowing goals to be set and fulfillment measured as new hardware and software are delivered and rolled out in the network.

Radio access model network

The challenge Ericsson faces is to compare different networks with each other. Consequently, a model network based on the most common base station products with the most typical radio network controller has been used. The relation between controller and the base stations is based on Ericsson offerings.

As a radio network controller will handle >100 base station nodes, the consumption of base station nodes are the most significant, and energy conservation efforts must be focused on radio base station sites.
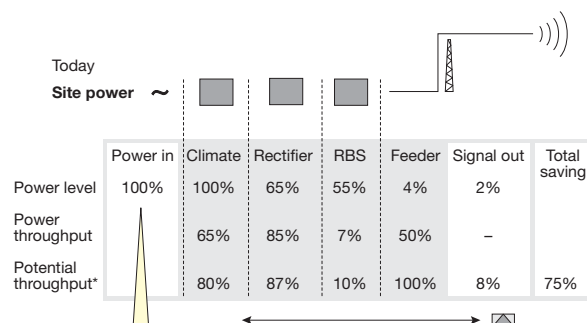
Site models

In the LCA studies the energy consumption, or annual average power consumption, is estimated from an operator perspective under normal operating conditions.

The power estimate includes not only the direct current consumption of the radio base station but also the air conditioning consumption of rectifiers and climate equipment. For the Ericsson outdoor radio base station, product data is used. For climate and rectifier equipment from other vendors, key figures from operator measurements are anticipated, based on field data.

At a radio base station site, two percent of the alternating native current input power is converted into radio frequency power to the antenna connector. The improvement potential is substantial for all components except the rectifiers. The total improvement potential, if costs are disregarded, is four times in power efficiency; i.e., a 75 percent decrease in losses.

2G/3G radio base stations

	Power in	Climate	Rectifier	RBS	Feeder	Signal out	Total saving
Power level	100%	100%	65%	55%	4%	2%	
Power throughput		65%	85%	7%	50%	–	
Potential throughput*		80%	87%	10%	100%	8%	75%

Radio base station site model indicating current losses and potential improvements.

Climate models

Climate model is used to calculate the energy consumption of the climate system. The percentages of time annually that different devices, such as fans, heat exchanger and air conditioners are used, can be calculated depending on the power dissipation and the triggering temperature for the different devices.

Traffic load and spread factor

The power consumption of any node depends on traffic load and on statistical spread. To estimate energy consumption, average values are used and the spread is disregarded.

The load is determined by a traffic model, based on field traffic measurements. For WCDMA, the pilot signal, 20 percent of nominal power, is the minimum load, at idling. Maximum power is limited by admission and congestion control parameter settings. The nominal power is reached only occasionally, while averaging 50–60 percent during busy hours.

A similar model was developed for GSM. In the WCDMA case the power consumption has a basically linear dependency on traffic. The 24-hour average value, 39.5 percent of nominal radio frequency output power, can be used for calculation of average power consumption. GSM, employing a number of transceivers, is not linear and integration over several power steps is imperative to achieve a correct result.

Power efficiency and "Useful Entity"

The power consumption is measured as specific power consumption; i.e., compared to the useful output capacity of the nodes in radio access network. The "Useful Entity" for radio access network equipment, 2G as well as 3G, is the product of coverage and capacity (voice equivalents). The radio frequency power efficiency of the site is actually the most important factor to achieve high power efficiency.

Glossary

3G
Third generation mobile communications systems. Offer higher user data rates and multimedia capabilities.

AC
Alternating Current

BCS
Base Station Controller – the GSM equivalent of the RNC in WCDMA basestations.

Beryllium oxide
Beryllium oxide (BeO) combines high thermal conductivity, excellent dielectric properties, corrosion resistance, and moderate mechanical strength. If inhaled it is highly toxic and causes pulmonary problems.

BTS
Base Transceiver Station

Code of Conduct
Ericsson's corporate directive establishing the framework for workers' rights and working conditions for all Ericsson activities worldwide. This is also applicable for work done on behalf of Ericsson by suppliers.

Code of Business Ethics and Conduct
An overview of fundamental Ericsson Group policies and directives guiding our relationships to each other and to our stakeholders.

Corporate Social Responsibility
The term used by Ericsson referring to the concept that an enterprise is accountable for its impact on all relevant stakeholders. It is the continuing commitment by business to behave fairly and responsibly and contribute to economic development while improving the quality of life for employees and their families as well as of the local community and society at large.

DC
Direct Current

EMF
Electromagnetic fields

Emission
Release or discharge of any substances, effluents or pollutants into the environment.

EMS
Environmental Management System – put in place to develop and implement a company's environmental policy.

End-of-life
The point when a product has come to the end of its useful purpose. A focus of Ericsson's environmental policy is on implementing environmentally responsible disposal practices for its products when they have reached their end of life.

EoLT
End-of-Life Treatment

Environmental impact
Any change to the environment, whether adverse or beneficial, wholly or partially resulting from human activities.

Ericsson Response™
Ericsson Response™ is a global initiative aimed at responding to human suffering caused by disasters. Ericsson Response™ assists disaster relief operations by providing specialist volunteers and communications equipment.

LCA
Life Cycle Assessment – a management tool for appraising and quantifying the environmental impact of products or activities over their lifetime.

Lead-free solder
Concern about toxicity has led Ericsson to research lead-free solder. The alternative currently being tested is an alloy of tin, silver and copper.

Outsourcing
The transfer of a business function and its resources to a third-party supplier who then sells back the function as a service.

PBB
Polybrominated biphenyls

PBDE
Polybrominated biphenyls ethers

RF
Radio Frequency

RoHS
EU directive on restriction of the use of certain hazardous substances in electrical and electronic equipment.

SAR
Specific Absorption Rate – a measure used in the research into exposure to radio waves.

Sustainability
A dynamic state of the earth's evolution where a prosperous human global society lives in harmony and with the carrying capacity of the eco-systems.

Sustainable development
Contributions toward sustainability. From the Bruntland Commission's report Our Common Future, to the UN General Assembly in 1987: "to meet the needs of the present without compromising the ability of future generations to meet their own needs."

Switch
A device for making, breaking, or changing the connections in an electrical circuit – in this context a telecommunications network.

WCDMA
Wideband Code Division Multiple Access – a technology for wideband digital radio communications of Internet, multimedia, video and other capacity-demanding applications. WCDMA, developed by Ericsson and others, provides higher capacity for voice and data and higher data rates. WCDMA is also known as UMTS and has been adopted as a standard by the ITU under the name IMT-2000 direct spread.

World Health Organization
A specialized agency of the United Nations that promotes technical cooperation for health among nations. The WHO carries out programs to control and eradicate disease and strives to improve the quality of human life.