NORDIC INVESTMENT BANK

bulletin

December 1999

Connectivity

Telecom – Datacom – Internet – Mobility – Media

Jón Sigurðsson, President and CEO

Necessity is the mother of invention. The far-flung, sparsely populated regions of the north are without any doubt one of the reasons why the Nordic area has become a world leader in telecommunications technology, mobile telephony not least.

Today we can see how telecommunications, data communications and media are merging into one. A new society is taking shape – the society characterised by connectivity, using a combination of computers and telecommunications and making mobility a key factor of technological development as we approach the new millennium.

The motive force behind these interesting developments is digital technology, mobility and the Internet.

The curtain is about to rise on a new millennium. Just about all we know about this third millenium is that information, communication and education are going to be key concepts in a rapidly growing, ever more powerful international network. The advanced net-work society needs people with an individual profile, adaptability and a sense of responsibility. Digitalised information systems are increasing the scope for customised solutions and products in every sector. The spider at the centre of this web is the IT industry.

The Nordic area holds a good position in this world picture. Finland and Sweden are in the vanguard of world mobile communication development, thanks to the global activities of Nokia and Ericsson.

The world centre of mobility is in the Nordic area, not in California. In addition, the Nordic countries have a long and massive tradition where fixed telecom infrastructure is concerned. The whole of the Nordic area is well to the fore in telecommunications liberalisation, which has given its telecom sector a head start in terms of growth. High mobile phone and PC densities in the Nordic area, coupled with a large number of Internet connections, are important factors in the creation of a powerful environment for IT technology to develop in. The Nordic area today can be termed a world leader in IT where applications are concerned. This can and should confer competitive advantage in electronic commerce, a sector where the Nordic countries have it in them to become European leaders. The Nordic area has manifold strength with which to assert itself in IT:

- A good education system from compulsory school to university.
- Many qualified and demanding IT users.
- Strong infrastructure in the telecommunications and IT sector.
- Strong IT suppliers with a global range.
- Dynamic new small businesses in the IT and software field.

The weakness of the Nordic IT sector in terms of competition is the Nordic area's limited capacity for investment and finance in the global arena, not least where new products and services for export are concerned.

In order for the Nordic area to retain its leading position, the conditions for enterprise in the IT and software sector will have to be improved, partly because it is in this sector that the start-ups are now taking place. Good general conditions for entrepreneurial start-ups are important for the continuation of growth.

IT competence in the community must occupy the focus of attention at all stages of the education system, from compulsory school to university. Co-operation between industry and political decision-makers is extremely important in this connection. This calls for measures at national level, but the international perspective is also supremely relevant to the IT industry and is going to be of crucial consequence for industrial activities in the Nordic area. Just as universal literacy and a high standard of general education formed the basis of positive social development in the Nordic area during the century which is now ending, computer skills and IT knowledge, coupled with a solid general education, will be decisive factors for the new century.

Telecommunications are the theme of this issue of the NIB Bulletin. In recent years this growth sector has come to play a very important part in NIB's lending activities. So far the Bank has signed 36 credit agreements with firms in the telecom sector, 12 of them in the Nordic area and 24 outside it. Most of these loans have been granted during the second half of the 1990s. They total nearly EUR 800m., slightly more than half this total amount having been provided in the Nordic area. Loans to the telecommunications sector have grown rapidly in recent years, not least in the privatised sector and, above all, to private mobile telephony, which accounts for nearly 60% of NIB's total lending to telecommunications projects.

There are many reasons why NIB's lending activities in this field are increasing. Firstly, telecommunications infrastructure accounts for a rapidly growing share of investments in all countries during this period. Secondly, the liberalisation of telecommunications in the Nordic area has created new investment opportunities, e.g. as regards cross-border investments. Thirdly, the strong technology-based enterprises in this sector are Nordic in character and cover the entire Nordic area. These companies regard the Nordic area as their home market and as a home base for project exports to new markets.

IT frequency

amount per 1000 inhabitants 1998

	The Nordic countries	EU*	USA
Mobile phones	465	227	256
PC	36	26	46
Internet connections	250	68	222

Source: ITU – International Telecommunication Union 1999

*EU, exclusive of the Nordic countries

Contents

Telecommunications are the theme in this issue of the NIB Bulletin. Cover: Tony Stone Images

NIB bulletin
December 1999

Bulletin
The NIB Bulletin is published twice a year in Danish, English, Finnish and Swedish.

Christian Söderström, Editor-in-chief
Jamima Löfström
Christa Koivulehto
Carl Lindqvist

Translation: *Roger Tanner, Stockholm*

Lay-out: *Lowe Brindfors & Partners, Helsinki*

Printed by: *Nomini, Helsinki*

Publisher: *Nordic Investment Bank*

Headquarters:
Fabianinkatu 34, Helsinki, Finland

Mailing address:
P.O. Box 249, FIN-00171 Helsinki

Telephone: *+ 358 9 18001*
Telefax: *+ 358 9 1800210*

Internet: *www.nibank.org*
E-mail: *info@nib.fi*

New addresses: *Telephone: + 358 9 1800293*

Nokia shaping our future

Any attempt at gaining a balanced picture of electronics giant Nokia is impeded by all the superlatives one cannot help stumbling over: Nokia is not only Finland's biggest and internationally best-known company, it also has a profitability, a rate of expansion and a capacity for technical innovation which are in a class of their own and, up till now, has left its opponents standing in the principal markets.

Nokia's operation is global. The company is active in more than 130 countries and has research and development centres in 12.

Between January and September 1999, turnover rose to EUR 13,400m. Growth during the second third of the year was 49%! There are 53,700 employees.

Nokia's mobile phones are selling well. Altogether 40.8 million of them were manufactured in 1998. Totting up its total sales over the years, in December 1998 the company notched up its 100 millionth phone manufactured. This makes Nokia the world's biggest producer of mobile phones.

Nokia has divided its operation into a number of divisions, each with its own Managing Director and staff functions. **Nokia Mobile Phones** is the company's biggest and fastest-growing unit, and occupies itself with mobile phones, Nokia's main product. Turnover at the end of 1998 was EUR 8,000m. Presenting its interim report for the first nine months of this year, the company had reached 9,000m., which was 58% up on the corresponding time last year!

Nokia Networks offers systems and infrastructure for analogue and digital telecommunications networks. Its products are switching, transmission, network management and intelligent network solutions. All Nokia's network products are intended to operate in connection with either fixed, wireless or convergent environments.

Divisional turnover at 31.12.98 was EUR 4,400m. The nine-monthly figures showed a turnover of 4,000m., an increase of 32 per cent.

Nokia Communications Products comprises the multimedia terminal, monitor and industrial electronics product groups. This division's newest member is Nokia Home Communications, which is developing various possibilities for home electronics using the new broadband technology. Turnover at year's end totalled EUR 1,000m.

Nokia Ventures Organization expands Nokia's business scope into promising new areas in communications solutions, products and services. It includes, for example, Nokia Internet Communications, which is responsible for all the new applications devised in connection with the Internet, parallel to the rapid progress of wireless solutions.

Nokia Research Center. Research and development has always been one of the cornerstones of Nokia's operation. Its personnel strength of 13,000 at the company's 44 research centres in 12 different countries (figures as per 31.12.1998) testifies to the importance attached to research. Nokia is said to spend the same amount of money on research as on marketing.

Why Nokia?

One question which the Nokia management often has to answer is: Why has your particular company been so successful?

There are two ways in which to look for an explanation for the success of this Finnish technology phenomenon. The outward conditions of telecommunications progress were created when the Nordic national authorities decided, at the beginning of the 1980s, to adopt a common mobile telecommunications standard. Nordic Mobile Telephone, otherwise known as the NMT system, was designed so that all interested suppliers would be able to take part. The saying goes that the consideration shown for consumers' needs then came to distinguish the Nordic model from that adopted by most other countries with government-controlled telecommunications.

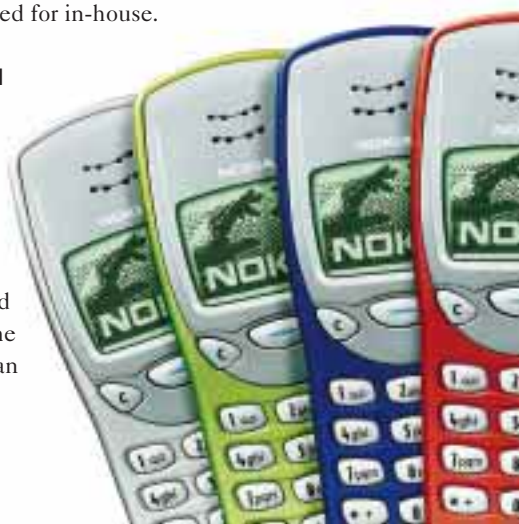
NMT opened up the market for mobile telephones in the Nordic area, giving both operators and suppliers a head start, which it took competitors elsewhere in Europe many years to catch up on.

This process was further reinforced by the decisions to deregulate the telecommunications market and to open it up to free competition in the Nordic countries.

Today the results of this development are clear for all to see. Telecommunications enterprises in the Nordic countries can point to a whole array of successful enterprises—Ericsson in Sweden, Telenor in Norway, Tele-Danmark and so on. In Nokia's case, as with the other successful telecom enterprises, the factors of success also have to be searched for in-house.

The Nokia model

Director of Finance Timo Korvenpää sees one explanation for Nokia's successes in the specialisation it opted for. Whereas in the 1980s it was still an



Timo Korvenpää

industrial conglomerate, Nokia now drastically reduced the number of sectors it wanted to be involved in.

The company settled on telecommunications and the technology associated with mobile telephony. Capacity for turning up with the right products at the right time has long been a characteristic of the company. The results were not long in coming.

Factors of success within the company can also be looked for among such things as management climate. Emphasis was placed on the capacity of members for assuming responsibility and using their own powers of initiative. A broad-based training programme gives every employee the opportunity of further studies in the subject of his own choosing. During their first year, new employees—Nokia recruited 9,500 of them last year—are given a grounding in Nokia's corporate policy.

Timo Korvenpää says that decision-making, which can often put obstacles in the path of big organisations, is no problem to Nokia.

"Our teams are prepared for constant improvements. Sometimes new groups may join a team and the old organisation be dropped. But the important thing is for everyone to know what they have to do."

Sari Baldauf, Managing Director of Nokia Networks, describes, in a newspaper interview, her view of Nokia's successful ventures:

"We all have a fast and market-adjusted rhythm in our spinal reflexes, and so we have ourselves been able to influence the rapid development occurring in the industry."

As regards the Internet, which will also demand new procedures, Sari Baldauf says that here again Nokia can probably sway the course of development.

Co-operation with banks

As Finance Director of a solid enterprise, Timo Korvenpää seldom has to worry about financial aspects. He says that a large part of Nokia's investments can be funded internally. But, he notes, there are arrangements where Nokia benefits from external financing. For example, Nokia has collaborated with NIB on a number of investment projects. The Bank has then been able to assist the investing company, i.e. Nokia's customer, with credits.

"Smooth co-operation to the benefit of both parties," he sums up.

New challenges

Where is Nokia heading today? Anyone leafing through the company's brochures, visiting its home pages or reading articles about Nokia will soon realise that wireless communication is now the up and coming thing.

Nokia's new WAP telephone has just been launched. Work has also begun on technical adjustment to the combination of the Internet and mobile telephony.

In its forecast, Nokia says that the greater part of our personal communication - that is phone calls, data images and even live video images - will soon be wireless. The great advantage of WAP, they say, is that with the wireless system, service-producing enterprises can reach their customers round the clock. At the end of October 1999, for example, a British bank announced that it had now become the first bank in the UK to open a facility for Internet banking by mobile telephone, using a WAP server supplied by Nokia.

The WAP (Wireless Application Protocol) standard which Nokia and other players in the industry have developed provides access to the new technology with no restrictions as regards manufacturer, product or operator. A big new market is opening up, with Nokia—yet again—in the lead.

Ericsson has faith in the future

Ericsson is not only Sweden's biggest enterprise but also a leading telecommunications concern at global level. Following a dip in profits, the company is now looking to better times ahead. The nine-monthly figures showed good growth for Network Operations, Ericsson's main segment, while mobile phone sales lost ground. Corporate turnover totalled MSEK 141,600, an increase of 13 per cent.

Ericsson, unlike its rival in Finland, is mainly a supplier of different systems for fixed and mobile telephony. Mobile phones provide one-fifth of its turnover. To hold its own in the mobile phone market, Ericsson has to come up regularly with new models.

In the launching of new models, Ericsson has not kept pace with the competition. This has reduced its market share and led to poor profitability for the mobile phone segment. But a trend inflection is now hoped for.

Commenting on the interim figures on 30th September 1999, Board Chairman Lars Ramqvist said: "First and foremost, we will have to be more responsive and serve our customers better. Ericsson has lost momentum in the past 12 months. One year is a long time in the telecom business. During that time our competitors have advanced their positions."

Karl-Henrik Sundström

A succession of new mobile phone models was launched in the summer—a completely new product family has been presented—and has been well received by the market. Ericsson expects this to show up in the figures for the final quarter.

Restructuring programme

Ericsson has decided to restructure costs and review its organisation. With upwards of 100,000 employees and with operations in 140 countries, changes are not easily introduced overnight. To improve its profitability, Ericsson has announced a reform programme which will affect some 15,000 employees over a two-year period.

In a statement following his appointment last summer, Ericsson's new President, Kurt Hellström, says that there is no question of sacking 15,000 employees. Instead operations are to be changed, partly through the introduction of new working methods, and he mentions training as a means of giving people new skills for the new tasks in store for them.

Ericsson's business areas are divided into three main segments:

Network operators/Service providers. This segment provides the company's biggest turnover (MSEK 99,200 at 30.9.1999) and has about 65,000 employees. Mobile telephony systems are Ericsson's strong point, and the company notes very big demand both in Europe and in the USA. American demand for Ericsson products has risen by 48 per cent compared with 12 months ago. Mobile Systems as a whole now represents 69 per cent of Ericsson's entire turnover.

President Kurt Hellström points out that whereas previously its attention was very strongly focused on mobile phones, the market has now begun to perceive that Ericsson's strength lies in infrastructure.

Consumer Products. Where mobile phones are concerned, Ericsson expects the total market for this year to be in the region of 250 million phones sold. To achieve a 15 per cent market share, which it hopes to do, Ericsson will have to sell nearly 35 million phones.

Enterprise Solutions. This unit develops various concepts for companies wishing to use mobile systems, the Internet and wireless solutions. This means internal communications solutions for businesses, based on their internal telephone exchanges.

Other operations is quite a large segment, with a turnover last year of nearly MSEK 14,000. It includes defence products, cables and components.

The global market

"We are market leaders in mobile communication and have a large share of the fixed network," says Karl-Henrik Sundström, retiring as Director of Finance at Ericsson's head office in Stockholm and about to take charge of operations in Australia. "The AXE system is the heart of our operation and the world's biggest telephone exchange standard, which we think is important."

Ericsson's most important market region is Europe-Africa-the Middle East, accounting today for about half of total billings. Growth has been 17 per cent for the first six months. This positive trend is reinforced by strong demand for Internet applications and the next generation of network solutions developed by Ericsson.

Next come Asia and the Pacific region (21%), with China providing half the regional turnover. Latin Ameri-

ca is an important region to Ericsson, with 13% of turnover, and with Brazil and Mexico as its cornerstones.

The USA, representing 12% of turnover, is the fastest-growing region at the moment. This has to do with the fact of American mobile phone penetration having been extraordinarily low. It was 25 per cent last year and is now approaching 30 per cent.

Driving force for growth

Karl-Henrik Sundström reminds us that communication is one of the very greatest driving forces for growth in the world today. Which is why this particular field—telecommunications—is growing faster than others.

"During the past ten years, Ericsson has grown on average by 20 per cent," he says. "And for the past five years growth has annually been something like 30 per cent.

"We believe that in five years time, in 2004, there will be more than a billion subscribers on the fixed network, 1 billion subscribers on the mobile network and another billion on the Internet. This indicates the growth and necessity of telephones, terminals and also infrastructure for the future. It conveys a fair picture of the speed at which this sector is developing."

Karl-Henrik Sundström follows through with a very eloquent description:

"The fixed network took about a hundred years to collect one billion subscribers, the mobile network will need 25 years to do the same. But for the Internet it will only take ten years. This is the driving force, isn't it?"

The next and third generation

Ericsson strongly believes in a technology based on mobility combined with the Internet. Sundström speaks of "The New Telecom World", meaning a new convergence between IT and telecommunication and greater demands on mobility.

This is where the new "3G" or third generation technology comes in. The GPRS standard represents the first step of a technology which Ericsson as the first system provider applied to its mobile networks. So far GPRS networks have been ordered by 45 network operators. GPRS gives the users—customers, that is—a cost-effective and much faster system for wireless data communication.

With the GPRS standard, mobile systems can packet-switch (transmit) with a capacity of 115 kb/s, as compared with the 33 kb currently available on the PC at home.

Ericsson is quite clear about the potential applications of the new possibilities:

"Take, for example, on-line banking, the electronic wallet, stock market information, weather forecasts, train reservations, retail trade and parking machines. This is one of the strategic paths that we will be following," says Karl-Henrik Sundström.

"We are going to change our way of living. We will be able to chose a completely different way. And this is going to push down the prices of everything. You can already see it happening with on-line marketing. Lots of people are shopping food and doing their banking on the Internet. Everything is going to be more user-friendly."

Ericsson has been an active player in the international market for new technology. Symbion, Mariposa, Touchway, LCC, ACC, Torrent, Juniper, TeleBit, Ozcom and several new Internet companies have been acquired, partly or wholly.

"We buy what we don't have time to develop ourselves, and what we are really buying is a number of brains and patents."

Nordic area best off for e-commerce in Europe

With a head start on the rest of Europe as regards deregulating the telecommunications market, lower call charges and a generally higher infrastructure, plus two eminent producers of mobile communications solutions —Nokia and Ericsson—the Nordic area is outstandingly well prepared to meet the future in mobile electronic commerce.

A new survey report from Andersen Consulting indicates that, judging by market development tendencies over the past five years, the Nordic area can become the European centre of mobile e-commerce.

In addition, the Nordic countries today have more than 10 million mobile phone subscribers, the highest density of home computers (50% of private households) and more Internet connections in business and homes. This puts the Nordic area at the centre of mobile e-commerce in Europe.

Flemming Kjærsdam is a Danish economics journalist specialising in telecommunications and IT. He works as a freelance journalist at Børsen Informatik in Copenhagen.

When the European Commission began the process of deregulation at the end of the 1980s, telecommunications was singled out as Europe's biggest growth area. In the mid-1980s it accounted for 2% of GDP in the EU countries, and this was expected to rise to 7% by about the year 2000. Events have confirmed the forecast, and telecommunications is now one of the fastest-growing areas of business in the world market. So it is gratifying to note that the Nordic area occupies a strong position in the telecom sector and in relation to tomorrow's mobile electronic trading.

According to Pål Fevang, a partner in Andersen Consulting, the Nordic area is ahead of the rest of Europe where e-commerce is concerned. "This is because it has strong purchasing power, good education, a lot of mobile phones and computers connected to the Internet, and a willingness to experiment. In this respect the Nordic area has a head start. The decisive thing for Nordic companies now is to gain a good position in the local market, so that they can be in on the e-commerce market of the future. To achieve this, you have to be strong on your home ground. If there is no home market, there won't be any electronic commerce either. So it is very important for Nordic companies to come up with new solutions and in this way, using their advantage in mobile communication, to put their imprint on future e-commerce standards."

Wireless

Andersen Consulting recently carried out an analysis of e-commerce in Europe. The tendency is unmistakable. Andersen Consulting's report, "e-Europe takes off", indicates that the future electronic commerce market will be wireless.

This will put even more wind in the sails of the Nordic area, with big international corporations like Nokia and Ericsson helping to create standards for all wireless communication in e-commerce.

By virtue of their sheer size, Nokia and Ericsson, which are international producers of mobile communication, can put their imprint on Nordic and European telecommunications and, not least, on the future market for e-commerce.

Not only Europe but the whole of the world market is about to switch over to wireless communication. This is not to say that the market for fixed telephony will disappear. But future growth will be in wireless telephony, fixed telephone subscriptions in the Nordic area having reached more or less saturation point.

"Mobile communication is so much more widespread in the Nordic area compared with the rest of the world," Pål Fevang continues, "that this in itself can mean a real head start in e-commerce. So the lead which the USA currently has on the Nordic area can be eliminated within the next two or three years, and when wireless technology (WAP) for electronic commerce becomes standard, it will be the Nordic area's turn to take the lead.

Standards of the future

The battle over future standards for wireless e-commerce has now been joined in earnest. By tradition, people have logged onto the Internet from computers. In this respect, Nokia and Ericsson are evolving the new market standards. The telecom companies are also in a very good position, given their many years' experience of the mobile phone market's infrastructure.

Mobile phones are just one of a huge number of opportunities for wireless communication in e-commerce. Psion's Palmtop computers, 3Com's Palm Pilot and Symbion's wireless information equipment are just a few examples of new types of wireless communication equipment. By 2004, the number of wireless computers and mobile communication units will exceed the number of on-line computers by something like 500 million units. Last year 1.4 million Palmtops were sold in Europe.

By 2004 the number of mobile phones will equal the number of all other communication units put together, with something like a billion users. Globally in 2004 there will be about 2 billion units that can be used for electronic commerce.

Charges

The Nordic area as a whole is also in a good position where charges are concerned. Denmark leads, all things considered, while Sweden and Finland have low charges in individual fields - for example for leased lines within mobile telephony for private customers.

These new figures were released by Eurodata in August 1999.

It is natural that Denmark should be in the lead, as the only Nordic market where EU liberalisation has been in progress ever since 1988.

Flemming Kjærsdam

Faroese Telecom keeping well abreast of developments

Optimism is running high in the Faeroes at present. The difficult years of the early 90s when the fishing industry was plunged into crisis are now a thing of the past. The national economy has also recovered. The low oil prices still in force last year were good news to the Faroes' economy. There is full employment and exports of fish and fishery products are conquering new markets.

Difficult terrain

Equipping a small, scattered group of islands in mid-Atlantic with ultra-modern digital telephone technology is not an easy undertaking. But Andras Róin jumps at it. "We already have a GSM network which covers most of the main communities," he says.

But the terrain and smallness of scale mean problems. Normally an area of the size of the Faroes can manage with four or five base stations. But here, because of the terrain, 40 or 50 base stations have to be installed to serve 95 per cent of the villages. And that costs money.

So far 14 base stations have been installed. The aim, says Andras Róin, is to have 20 up and running reasonably soon.

An important technical advance occurred when a fibre-optic cable called Cantat was connected up between the Faroes and Iceland and Denmark. This greatly boosted capacity and dependability for international calls to and from the Faroes.

Change of technology

In the company's mid-year report, President Andras Róin notes that the build-up of the GSM network has gone well. GSM connections have increased from 450 at the commencement in October 1998 to 2,500 by the end of June this year. He expects the number of subscribers to reach 5,000 before the year is out.

Roaming agreements with operators in other countries have not been concluded as quickly as Róin would have liked. Agreements now exist with 16 operators in 12 countries and, he promises, there are further agreements in the pipeline.

The Internet is also working well in the Faroes today, following a certain amount of teething trouble. To raise international capacity, a new cable is planned between the Faroes and Scotland or Iceland for more adequate channelling of the growing demand for Internet services.

Privatisation

So far FT has had the Faroese market all to itself, but the authorities have now awarded five new concessions. These apply to the entire telecom sector, from international calls to GSM and Internet services. FT has been instructed to sign co-operation agreements with these companies. How this will impact on FT's profitability remains to be seen.

In the long term, Andras Róin regards privatisation of the now Faroese-owned telecom company as an important step towards raising capital for an expansion of operations. He puts the investment requirement at DKK 40 or 50 million annually.

NIB has awarded FT a DKK 25 million credit.

Andras Róin, President of Føroya Tele, hopes for a privatisation of the Faroese telecom company, as a means of eventually infusing fresh capital into the company.

When a small community wants to keep up with developments and create for its members the same technical competence as is used by the world at large, many opportunities are opened up but also a number of problems. Andras Róin, head of the Faroese telecom company (FT), knows this from experience.

International calls to and from the Faroes used to be handled with the aid of a satellite aerial, but telecom President Andras Róin (right) says that an optic cable is now needed to cope with the increased traffic volume generated by the Internet. Contacts with the Faroese telecom company were handled by NIB's Regional Manager for Denmark, Søren Kjær Mortensen.

Sonera

—strong focus essential in a fast developing market

Finnish Sonera is an international telecommunications company whose main strategic emphases are mobile telephony and data and media communication. Like telecommunications and telecommunications engineering themselves, Sonera has undergone some big changes in recent years.

Within a short space of time Sonera has been transformed from a national utility to an international, competitive telecommunications company. One big step in Sonera's development has been a privatisation and a restructuring of the company. In 1998 the Finnish Government sold off some of its shares in the Sonera Group, reducing its holding to about 78%. The privatisation of the Group has continued during the autumn of 1999, with the Finnish Government further reducing its holding to about 60%. The present Group structure came about in June 1998, when the PT Finland Group was divided up into a telecommunications company and a postal company. The telecommunications company had already changed its name earlier in the year from Telecom Finland to Sonera, so as to have one and the same name both nationally and internationally and in this way to achieve a strong trademark which would show up on the international telecommunications and IT markets.

Sonera began developing mobile telephony already in the 1970s, in association with Nokia and others. Collaboration between the Nordic telecom operators on NMT mobile telephony was initiated in the 1980s. As a result of this early start and a long-term commitment to product development, Sonera today is on the leading edge of technology worldwide.

Since the mid-1980s, the Finnish market for telecom has been successively opened up to competition. Sonera's operation, in its own opinion, has benefited from a relatively early confrontation with market competition, which is now paying dividends.

"We have already had a sort of competitive situation in Finland," says Christer Nykopp, Vice President of Sonera's International Operations, "and during the past 12 years this has led to complete competition. In local telephony, Finland has by tradition had local operators. This has had a very important bearing on activities. The national utility has not been able to let its costs escalate freely or allow its standard of service to lag far behind other players in the market, which of course has also affected the private firms and in this way been good for the whole of Finland's telecommunications sector."

This, he points out, is an important difference between Sonera and other postal and telecommunications companies.

"Sonera has never had a real monopoly, except in certain fields like international and long-distance traffic, the first fields in which monopolies, de facto, were abolished. Even if there were geographic divisions in the Finnish market, it always had a small element of competition that was lacking in other countries."

Sonera's present business activity rests on the decisions that were taken at the end of the 1980s, both by the government and by state-owned Sonera, to the effect that the company would have to change its focus. Sonera realised at the time that long-distance traffic would not be all that lucrative after a couple of years, and events proved that they were right. When the government decided to liberalise the telecommunications market, it was highly motivated by the fact that NMT mobile telephony was starting to develop with immense rapidity.

Internationalisation

Outside Finland, Sonera aims to boost its growth in three ways: through direct investments in telecom companies, through service provider activity in European subsidiaries and by selling product rights and service concepts.

"One year ago," Christer Nykopp continues, "when Sonera went public, we promised to expand internationally. We have done so, for example by investing in America. We aim to become one of the dominant mobile enterprises in Europe, with a strong position in North America as well. We will have to focus on these regions, because that is where the growth potential and purchasing power are."

Even though the same potential cannot be ascribed to

the Baltic region, it still occupies a special position for Sonera because the company has come to participate quite comprehensively in national telecommunications companies.

"Entering the Baltic region was easy for Sonera, for purely geographical reasons," says Christer Nykopp. "In addition, a very attractive possibility was opened up there with the collapse of the Soviet Union. At that time countries all over Europe had enormously protectionist postal and telecommunications companies, which ruled out any internationalisation within the EU. In the first place, Finland was not an EU member, and secondly, the liberalisation process within the EU had hardly got started. It is only now that liberalisation has opened up prospects of internationalisation in Europe."

In Central Europe, Sonera firmly expects a strong economic development. Poland and Hungary are good examples of countries where economic activity is set to rise, even if it does not do so continuously.

In Hungary, Sonera and Telenor are joint owners of the Pannon mobile phone company. Sonera has a stake of 18.1 per cent. NIB has awarded Pannon a loan totalling USD 25m. Pannon was one of the first telecom projects in Central Europe to be project-financed, and NIB has been in on the project since 1995, i.e. almost from the beginning.

"In the longer term I think these are good investments, just like our establishment in Turkey (Türkcell Illetisim Hizmetleri A.S.)", says Christer Nykopp.

Controlling interests in Türkcell are held by Sonera with 41% and the Turkish Cukurova Group with 50.46%. Cukurova is a leading industrial and financial conglomerate in Turkey. Türkcell today is the leading operator in Turkish mobile telephony, with a market share of 77%, and the fifth biggest operator in Europe. For Sonera's part, the investment in Türkcell accounted for one-third of its profits between January and September 1999.

NIB has awarded Türkcell a loan of USD 25m. to finance a nationwide GSM network in Turkey. This project, with Ericsson as its main supplier, has developed well in excess of expectations, with the number of subscribers, for example, rising from 2.3 to 4.7 million during the first nine months of the year.

Strong Nordic co-operation in the Baltic region

Sonera's international activity started at the end of the 1980s in Russia, after the Soviet era, when it proved possible to go in and build up communications with the west. Sonera still has a mobile business, North-West GSM A/O, in Russia, in which it has a 23.5% holding. Telia and Telenor between them have a 24.5% interest in the same company. Sonera's internationalisation continued together with Telia in the Baltic, beginning in Estonia with the Eesti Mobiltelefon mobile enterprises, in which the companies each had a 24.5% interest, and continuing in Latvia with Latvijas Mobilais, again with 24.5% each. Co-operation with Telia continued and the next step was to enter the fixed networks in the Baltic region, again starting with Estonia and, for Sonera's part, continuing in Latvia (Eesti Telefon and Lattelkom respectively). Most recently of all, Sonera and Telia have established an operation in Lithuania through the Omnitel mobile telephony enterprise (27.5% each) and in the Lietuvos Telekomas fixed network (30% each).

Sonera's and Telia's co-operation in the Baltic region has to a very great extent been a matter of distributing the risk, which the companies have judged to be relatively great in these countries.

"In the neighbouring regions, then," Christer Nykopp continues, "Swedish-Finnish enterprise has been very strong, invariably on a 50/50 basis."

Christer Nykopp says that Sonera and Telia work excellently together in markets where they share companies, in spite of being competitors in Sonera's home market, where Telia has above all been trying to get into the Finnish mobile market.

NIB, like Sonera and Telia, focused its attention on the Baltic region at an early stage. When the Baltic countries recovered their independence, there was a great need to develop financial mechanisms for promoting the economic development of the region. Through its credit facilities, NIB has awarded credits for telecommunications in Estonia, Latvia and Lithuania to A/S Eesti Telefon, Latvijas Mobilais and AB Lietuvos Telekomas. For figures, see page 13.

New strategic course

Sonera's is very much a forward-looking operation. The company was first in the world, for example, to offer Internet subscriptions for mobile phones and a service for linking up mobile phones and company switchboards. In December 1998 Sonera became the first company in Europe to launch IP communications networks, linking Internet and telephone network functions in a single IT network. In February 1998 Sonera became the first company in the world to launch a SIM-card-based technology, SmartTrust, for digital signing, developed for the mobile network. This technology guarantees secure communication and trading on the web. Commercially interesting solutions include, for example, new services in mobile communication and sophisticated solutions for data transmission, used among other things in electronic commerce. Sonera develops its products for global use.

In September Sonera's management announced the new strategic policy whereby Sonera is to concentrate on mobile and media activities, both nationally and internationally.

"We are banking on what we find to be our strongest areas. Focusing is very important, especially as a strong consolidation trend has begun all over the world in the last year or two. In a market with big companies buying up one another, you need a very strong focus in order to stand the pace," he emphasises.

Telia now part of a major conglomerate

Hans E. Golteus, Executive Vice President of Telia/Telenor

The telecommunications market is going through a major transformation process, with new ownership and partnership constellations emerging. The amalgamation of Swedish Telia and Norwegian-owned Telenor was settled in October 1999. The aim of the merger has been to create a rapidly growing communications company with a strong international profile in such fields as mobile communication, IP-based services and IP-carrier services.

Technologically, Norway and Sweden both rank among the most advanced countries in the world, not least where telecommunications are concerned. Both companies are in the frontline of technical innovation. The point of departure is the strong position of the two companies in their respective home markets. The aim now is to build Europe's leading telecom company on these foundations. The amalgamated Telia/Telenor, whose new name had yet to be made public at our going to press, will be the sixth largest telecom company in Europe, with 51,000 employees and a turnover for the first half of 1999 of about SEK 43bn/NOK 41bn.

The agreements with the owners provide for Telia/Telenor to go public in 2000. Initially the Swedish government owns 60 per cent of shares in the amalgamated company and the Norwegian government 40 per cent. Both governments are to gradually reduce their stakes to 33.4 per cent each. This will give the other owners a combined stake of 33.2 per cent.

Towards consolidation

In their respective markets, Telia and Telenor have both been leading purveyors of telecommunications. Both companies have been state-owned, national telecommunications operators. As a result of market deregulation, both were turned into limited companies—Telia in 1993 and Telenor in 1994—fully owned by their respective governments.

"We are, so to speak, the traditional telecommunications operators in our respective home markets," says Hans E. Golteus, Executive Vice President of Telia/Telenor, "which means that in these two markets we have a very strong position as regards both fixed and mobile telephone operations and the provision of Internet services. We are companies with tremendously advanced customer service development, the reason being that we have very advanced customers, added to which, both our countries have had open competition for quite a long time now, which among other things has accelerated the pace of development."

"Telia was part of Sweden's National Telecommunications Administration, which was later turned into a limited company. That change was a very clear indication that the new Telia was going to be a company in every way resembling and managed like an ordinary limited company in a normal market", says Hans E. Golteus.

Telia's conversion into a limited company also coincided with the opening up of the Swedish market. Sweden was among the first European countries to open up its market to telecom competition. Hans E. Golteus says that competition in Sweden has been very keen. This has done a great deal to shape Telia and has been of great benefit to the company.

"Telia has come out of the competition very well indeed, which must mean that we have successfully adapted to an open world of open competition and to a tremendously interesting and rapid process of technical development, with the result that we have been able to offer new, advanced and more efficient products to our customers," he adds.

Telia/Telenor attaches great importance to being in the front rank of product development, especially on the technical side. WAP (Wireless Application Protocol) products are now rapidly gaining ground. The company believes that in future people will be able to work on the Internet from their mobile terminals more or less in the same way as from an ordinary terminal.

Hans E. Golteus says that the new company resulting from the Telia-Telenor merger is both financially and technically stronger.

"We go together very well indeed. We'll be a broad-based enterprise with a complete product portfolio. There is a strong tendency now in favour of mobile activity, IP-based services and IP-based operations."

Telia and Telenor have an overlap in their rival activities in Norway and Sweden and in Ireland. The new company has signed an agreement with the European Union Commission to dispose of these functions. The activities concerned are Telia Norway's operations in Norway, Telenor's operations in Sweden, a 33 per cent holding in Telenordia and one of Telia/Telenor's two companies in Ireland. The new company is to dispose either of Telia's 14 per cent holding in Eircom or of Telenor's 49.5 per cent holding in Esat Digifone—it is yet to be decided which. Cable television activities in Norway and Sweden are to be sold, but the company will retain its cable operations abroad.

Telia/Telenor in the world

Between them, Telia and Telenor have a competence which will provide the new company with a strong platform for international expansion. The focus of ambition is on such fields as mobile communication, the Internet and IP carrier. Like Sonera, the company intends also offering the content of Internet-based services internationally.

"We anticipate strong development on the portal side and content side," Hans E. Golteus emphasises.

All in all, the merger implies a highly comprehensive international operation covering large parts of the world. The new company has operations in more than 30 countries.

The Baltic

Early interest in the Baltic region derived from its geographic and mental proximity to the Nordic area.

"We have a strong presence in the Baltic States, where we have experienced a tremendously positive development," says Hans E. Golteus. "These are relatively small markets, but on the other hand they are developing at a rapid pace, so that being in them can be highly satisfactory. We intend to go on developing our operations in the Baltic States, with Sonera and others."

In addition to its corporate activities in fixed and mobile telephony together with Sonera, the company has, under its own auspices, established catalogue activities and cable TV, data communication and Internet service activities in the Baltic countries.

Hans E. Golteus says that co-operation with Sonera in the Baltic countries is having a positive impact. "Among other things, it has made us closely acquainted with each other, which makes it easier to discover opportunities and common interests in other markets as well."

Telecom in the Baltic – a coping stone

At the beginning of the 90s, when the Baltic States of Estonia, Latvia and Lithuania recovered their independence, it was immediately clear that big investments were needed in infrastructure, machinery and buildings. To supply this need, the Nordic Investment Bank has been able to draw on three different credit facilities for its lending to the Baltic States.

Telecommunications, which were both primitive and inefficient when the Baltic States became independent, have been a priority sector for swift modernisation. Efficient connections have been one of the basic prerequisites for entrepreneurial start-ups in the Baltic region.

Steady development and proximity to the Nordic area have made the Baltic countries a "home-from-home" market for many Nordic enterprises.

Telia and Sonera early arrivals

The Nordic telecom companies, especially Telia and the then Telecom Finland (now Sonera), were early arrivals in the Baltic countries. This already took place before independence and, looking back, the initiative was decisively important.

NIB's lending to the Baltic Telecom companies amounts to six loans totalling Euro 53 million and divided between three Telecom companies, one per country. In addition there is a sub-loan to a Lithuanian mobile telephone company, through a credit line to the Lithuanian Development Bank (LDB).

LITHUANIA

Lietuvos Telekomas (Lithuanian Telecom)

In 1998 the Lithuanian Government sold 60% of its Telecom company to a consortium, Amber Teleholdings S/A, owned by Sonera and Telia.

The Lithuanian Government, which retains 40% of the company, has announced its desire to privatise the remainder. Lietuvos Telekomas has been guaranteed a monopoly of fixed telephony until 2003.

NIB's loan to Lietuvos Telekomas: USD 25 million.

LATVIA

Latvian Mobile Telephone Company, LMT, is owned by the Latvian Government (51%) and by Sonera and Telia (24.5% each).

LMT inaugurated its mobile telephone operations—the first company in Latvia to do so—in 1992. The first network to be commissioned was for NMT 450. The first GSM network opened in 1995. The LMT company's NMT network is nationwide, while the GSM network reaches about 80% of the population. An investment is planned to upgrade the GSM network to nationwide coverage.

NIB's loan to LMT: Euro 10.9 million.

ESTONIA

The Estonian Telephone Company Ltd was founded in 1992. It is owned by the national Estonian Telecom Ltd, which subscribed 51% of the shares, and by Baltic Tele, which holds the remaining 49%. This company was backed by Sonera and Telia. In connection with a privatisation, Sonera and Telia subscribed new share capital for Estonian Telecom corresponding to a total of 49%. Following an international share issue—the first of its kind in the Baltic region—the state now owns about 27% and private investors just under 24% of shares in Estonian Telecom.

Estonian Telephone Company has a monopoly of domestic long-distance calls and international telephone traffic until 2001.

NIB's loan to Estonian Telephone Company: Euro 16 million.

Photo: Henrik Petit/EKKO

Tele Danmark Group President Henning Dyremose:

We want to be Number One

Tele Danmark is therefore having to look for growth in other countries. Since it was privatised, international activities have risen from 2% of turnover in 1995 to 40% this year.

Tele Danmark's Group President Henning Dyremose says that Tele Danmark doesn't want to be the biggest company.

"We want to be the best and the most advantageous. We are proving highly successful in this respect in a number of fields, and all the statistics show us at present to be number one in Europe—all things considered—if you compare prices, quality, profit, productivity and service level. Telenor comes fifth in the same statistics, Telia comes eighth."

Deregulation

Henning Dyremose describes Denmark as the most competitive market in Europe, with about 50 companies offering telecom services.

"Denmark was completely deregulated 18 months ahead of the timetable set forth in the 1987 EU Directive. That Directive required the market to be fully deregulated by 1st January 1998. In Denmark this was achieved on 1st July 1996. In addition, deregulation of the Danish market has continued and in this way has gone further than the EU Directive, whereas other European countries have not yet fully complied with the Directive. So as I see it, Denmark is three years ahead of most other EU countries in the matter of market deregulation."

Denmark also differs from other countries by being the only country in Europe where the former national monopoly has been completely privatised, and also in that its deregulation includes the following four areas which are not mentioned in the EU Directive:

In Denmark, everyone has free access to "the raw copper", i.e. the fixed telecom network.

Different telecom companies are "housed under the same roof" at the local telephone exchanges. This means that approved telecom companies can put up their own equipment at Tele Danmark's local telephone exchanges. In other words, Telia and Tele 2, for example, can offer special services of their own on Tele Danmark's network.

Tele Danmark, which owns the telecom network, has a "duty of resale" where capacity is concerned, and cannot refuse to lease capacity to other telecom companies.

The other telecom companies "lease" capacity at prices set by the National Telecommunications Board.

None of these four areas comes under the EU Directive. There is a certain amount of discontent in the Danish telecom market at present, because foreign rivals of Tele Danmark's feel that the charges for leasing capacity on the network are excessive.

Same legislation

According to Henning Dyremose, Denmark's legislation should also apply in Norway and Sweden.

"I don't feel that Telia and other foreign telecom companies should be given special treatment in the Danish market. I could understand that if it were a question of operative companies, but it isn't. Neither in Sweden nor in Norway does Tele Danmark have the kind of opportunities which Telia and Telenor have in Denmark.

"Tele Danmark does not have access to the permanent telecom network in those two countries, and we are not allowed to put up our own equipment in their exchanges. Under the Telia-Telenor merger, 66% will be owned by the Swedish and Nor-

During the past three years, with Denmark's telecom market completely deregulated under the EU Directive, privately owned Tele Danmark has been having to face competition from about 50 companies offering telecom services. This makes Denmark one of the most deregulated telecommunications markets in Europe. Meanwhile the Danish Government has completely privatised the former monopoly.

Facts about the deregulation of the market and the privatisation of Tele Danmark.

Denmark's telecom market differs from those of the other Nordic countries in that the market for the sale of on-line equipment was first deregulated nearly 12 years ago, in accordance with the 1987 EU Directive. The EU market was fully deregulated on 1st January 1998.

1990 In 1990 the four regional telecom companies and State-owned Telecom were amalgamated into Tele Danmark by the then non-socialist government in which Henning Dyremose served as Finance Minister. He is now Tele Danmark's Group President.

1992 In 1992 Sonofon began its operations, in competition with Tele Danmark Mobil.

1994 In 1994 the Social Democratic Finance Minister, Mogens Lykketoft, arranged a stock issue on the Copenhagen and New York stock exchanges, where 49% of the shares were traded.

1996 In 1996 the Danish telecom market was fully deregulated in accordance with the EU Directive - 18 months ahead of schedule.

1997 Negotiations for a merger between Telenor, Telia and Tele Danmark broke down in 1997.

In January 1998 Ameritech took over 41.6% of the Danish Government's shares in Tele Danmark, and the value of Tele Danmark shares has doubled since then. Tele Danmark is the only telecom company among the former PTT (post and telecom) companies in the EU to be fully privatised.

Tele Danmark's shares are the locomotive of the Danish stock market and have been so for some time now.

In October 1999, SBC acquired Ameritech for USD 72bn.

wegian Governments for several years to come. That situation matches the level in Denmark in 1994, so those markets in my opinion are five years behind in relation to the prevailing state of competition in the Danish market. I believe that competition leads to growth. The Swedish and Norwegian markets are far from deregulated."

One of the revolutionary changes experienced by Tele Danmark since 1995, when State-owned Tele Danmark was privatised by the Social Democratic Finance Minister Mogens Lykketoft, has been the transition from government monopoly to privately owned, public company. Henning Dyremose, himself a former Conservative Finance Minister, unhesitatingly calls it a very farsighted decision.

"As a State-owned company up against international competition, Tele Danmark would never get big enough. Since it was privatised, Tele Danmark has earned DKK 14.6bn net and invested DKK 18bn in Denmark's telecom infrastructure and DKK 11bn in its own internationalisation. Privatising the company was a very wise decision, because it has enabled us to grow outside Denmark's borders. So what we lose at home we are going to recover many times over abroad."

Cross-border expansion

When privatisation began in 1995, Tele Danmark's international activities provided 2% of turnover. Today, five years later, the interim report for 1999 puts that figure at 40%. A highly expansive and offensive strategy began in 1996 with the acquisition of shares in State-owned Belgacom in Belgium, where Ameritech was another big player. That was where the parties met. Later, in January 1998, Ameritech took over 41.6% of shares in Tele Danmark. Ameritech itself was acquired by SBC for USD 72bn in October.

"The value of Tele Danmark shares has doubled for Ameritech's owners in barely two years, thanks to the combination of an offensive strategy and skilful portfolio managers. To begin with Tele Danmark often bought minority holdings in the second and third largest companies in a particular market, as a jumping-off point for growth in a foreign market. Now we are focusing more and buying majority holdings in a particular market. One such example is our acquisition of Talkline on the German market, which is one of the biggest players in mobile communication. We have just acquired the biggest alternative mobile operator in Lithuania. So as of now Tele Danmark's main market is Northern, Central and Eastern Europe."

Tele Danmark now has operations in 12 countries.

Big exports

1998 turned out to be the Tele Danmark Group's best year ever, with a turnover of DKK 34bn and a surplus of DKK 4bn. The Group's companies abroad accounted that year for DKK 13bn, or 38%, which is more than any other European telecom company can boast of. The corresponding figure for Telia/Telenor is 12% and for Sonera 5%.

"We are also very happy about the former Telecom, in partnership with the universities and Danish industry, having developed our Duét service, which we were first in the field with and which today is the only service of its kind in Europe offering full interlinkage of fixed telephony and mobile telephony and with full access to services of different kinds," says Henning Dyremose. "This means, for example, that your ordinary, on-line telephone rings if someone calls your mobile phone when it's turned off. The call is transferred automatically. All services are available with both technologies and on both of the numbers in a subscription."

At World Telecom 99 in Geneva, the Duét Multi was proclaimed the world's most innovative service, in competition with 29 other forms of service.

53-year-old Henning Dyremose has been Tele Danmark's Group President for a year now.

Flemming Kjærsdam


SANDVIK

Nature scenes from the Faroes

Absalom Hansen is a nature photographer from the Faroes. After 18 years in banking, he decided to make a full-time job of photography.

In addition to his camera work, he trains sheepdogs.

Absalom Hansen specialises in photographing the Faroes for the local tourist authority. His pictures have been shown at an exhibition arranged by the Nordic Council of Ministers in Tallinn, and also at an exhibition in Norway.

Dolphin sights on a European market

Carol Boivin is Managing Director of Dolphin Telecom headquartered in Paris. Germany, he says, is the next stop after France.

At the same time as the GSM network is expanding with immense rapidity all over the world, both Europe and the USA are hard at work building up a good digital mobile radio network. In certain cases this can replace the mobile phone by offering tailor-made, fast and advantageous mobile radio connections. We are talking about TETRA, short for Trans European Trunked Radio, a new digital mobile radio standard which is springing up in various parts of Europe.

TETRA is an all-European standard, which came about in 1995, when the European Telecommunications Standards Institute (ETSI) established a common wavelength and technical standard for all Tetra users in Europe. The idea behind TETRA is to achieve an all-European communications network with clearly defined groups of users.

TETRA has resulted from co-operation between network operators, national bodies and manufacturers of mobile communications apparatus. TETRA represents a new digital, updated way of using radio waves effectively. This gives the TETRA user the possibility of transmitting data and images, as well as speech, over the network, which, with its technical capacity of 28.8 kbit/s, performs almost three times as rapidly as the GSM network.

Tetra is based on four parallel functional principles:

- Group calls—joint communication between the units in a closed network. For voice, image and data transmission.
- Interoperability—permits access to private PABX (enterprise networks) and to other telecom networks.
- Immediate access calls to individuals within a closed user group (access time 0,3 seconds!). It will also permit direct mode type walkie-talkies.
- Calls to the public telecommunications network like GSM.

Pilot project in the UK

TETRA, briefly, is a radio communications system with many in-built refinements, which can be adapted to the users' needs. A fire fighter at work needs a simple and reliable apparatus that will be serviceable in every situation. Taxi and transport companies have communication needs of a different kind.
The system also permits the user to build up a sophisticated data and image transmission function.

Various national authorities have taken part during the development phase, and so TETRA is suitable for use by the police, ambulance and fire services. But transport companies, the larger industrial corporations and the military are also possible users.

First on the commercial scene in Europe is the Canadian-owned Dolphin company, which last summer launched a TETRA network in the UK. In Finland the Helsinki municipal energy utility has begun operating TETRA on a trial basis.

In France, Dolphin Telecom S.A., a fully owned subsidiary of Dolphin Telecom plc (owned by the Canadian public telecommunications company TIW), inaugurated activities at the end of 1998 by organising a tendering procedure for the supply of technical equipment for its nationwide network. Finnish Nokia landed the order, which was worth 150 million euros and involves delivery of infrastructure equipment for a network serving 90 per cent of the French population.

From Paris to Lyon

With "phase alpha", covering the biggest French cities – Paris, Lyon and Marseilles – about to start, Carol Boivin, head of the Dolphin operation in France, is highly optimistic:

"Now we have about 200 sites in Paris, on the 400 megahertz band, and we can penetrate even buildings quite well. For this, all we need is a base station with an antenna. That's what we will be trying to deploy in the whole of France before the end of year 2000.

"To get nation-wide coverage that can be compared with the GSM, with deep indoor coverage in large cities, we need 2,000 sites. But for

Dolphin Telecom S.A.

TETRA communication network in France.
Value: 185m. euro.
Potential users: 2,000,000.
NIB loan to Dolphin Telecom: 13m. euro.

good coverage – to reach 90 per cent of the population – we need 1250; that's our evaluation today, for good penetration in large cities," says Mr Boivin.

TETRA uses a more favourable wavelength than the rival GSM network. Whereas TETRA can do with just over 1,000 base stations to cover 90 per cent of the country, the GSM 900 network requires 3,500 base stations and the 1800 network no less than 5,500!

Next year, when Nokia have promised to come up with a new and even faster TETRA mobile radio unit, with a transmission capacity of 28.8 kilobytes, Carol Boivin expects to be packing a bigger punch than ever:

"So when I have my new handset, it can be connected to my portable PC. In this way I can work on the net and be completely mobile".

Lower prices

Tetra offers a number of savings compared with GSM. Since, in principle, calls between units in their own network, between peers and assistants, for example, are free of charge as included in the monthly subscription fees. A lot of money can be saved on this count. Just how much will depend on the subscription fee which the network operator—Dolphin in this case—charges its customers.

According to Carol Boivin, the European market would be infinitely larger if only the inter-European barriers - obstructive national laws, in other words - could be removed:

"We have companies that would like to sign one deal for all European countries where they operate. Then they could have identical equipment, the same type of training, the same software for e-mail and voice mail".

Carol Boivin is convinced of the strength of the Tetra concept, but doesn't want to count his chickens before they are hatched.

"We'll have to learn how to walk before we start to run. When it works well in the UK, that is, when we know how to do the billing, get the customer service running, then we'll go full blast to deploy in the rest of the countries in Europe"!

Following its introduction in France, Dolphin Telecom has also been looking at Belgium and Germany, where it also has TETRA licences. But Spain and Portugal are also plotted on Boivin's map, and he sums up as follows:

"Our prime market is the transportation industry, the safety industry, the military, the fire brigades. We also have the big courier companies like Fed Ex and UPS, the cement companies, the garbage collectors etc. Those are the ones that we target".

The Nordic countries, are on the other hand, not on the drawing board for Dolphin in the short term. Distances there are too great and the population rather small. Added to which, GSM penetration in these countries is too high for establishment on any considerable scale to be worth TETRA's while.

Globe International expanding in the Philippines

Globe International is the leading GSM operator in the Philippines. To retain that position it is investing heavily in new technology and expansion. Globe today has about 640,000 mobile phone subscribers – three times the number it opened the year with! There are no less than four companies vying for market shares on the digital GSM network. With a population of 76 million, the Philippines have an immense market potential and, as yet, a low level of mobile phone penetration.

Gerardo Ablanza, Jr., Globe International's Managing Director and CEO, has issued a statement to the effect that the company intends to go on increasing its capacity, maintaining the high quality performance of its network and supplying its customers with value-added services.

Globe International, whose operations include both fixed and mobile telephony, has two principal owners, and strong ones at that: Ayala Corporation, a Philippine public corporation, with a 44% holding, and Singapore Telecom International, with 39%.

Globe has decided to expand its GSM network, parallel to investment in fixed telephony. The GSM network in Metro Manila, the Philippine capital, is to be enlarged, and coverage is to be extended to new rural areas.

Investments over the next few years are expected to reach USD 550m. and will be financed with a USD 78,8m. lending programme, NIB's share of which amounts to USD 20m.

Since Globe commercially launched its mobile services in 1994, Finnish Nokia has supplied mobile telephone equipment worth over USD 100m. and further deliveries are to be signed up for.

Sweden's Ericsson, for its part has received orders from Globe worth over USD 45m.

With a population of 76 million, the Philippines have an immense market potential and, as yet, a low level of mobile phone penetration.

NORDIC DEVELOPMENT FUND

Uganda's commitment to improved telecommunications

Uganda, one of NDF's earliest partners in Africa, has one of the continent's lowest telephone densities, a modest 0.27 percent, which translates to 2.7 telephones for every 1,000 inhabitants, whereas the average for a low-income country is 2 percent.

For industrialised countries, the corresponding telephone density is about 50% or about 200 times higher than in Uganda. Clearly, a vital precondition to sustainable economic development is an efficient and reliable telecommunications system. In recognition of this, the Ugandan Government has set itself the target of raising the country's telephone density from 0.27% to 2% within the next few years.

This target is to be achieved by liberalising the country's telecommunications sector, which involves converting the former government monopoly into a limited company and establishing a regulatory body. Up to 51% of the shares of the newly constituted Uganda Telecom Limited will be offered to private investors.

The introduction of a second national operator is an important part of the liberalisation process. This operator is MTN (Uganda) Limited, which has been awarded a licence for both mobile telephony and fixed-link transmissions. The licensing agreement requires the company *inter alia* to invest in a rural telecommunications network. Towards this, the installation of 2,000 public telephone booths throughout the country is planned.

MTN is owned by MTN S.A. (South Africa), Telia of Sweden and a number of local and regional investors. The company plans to invest approximately USD 72 million, of which USD 2 million in quasi-equity has been secured from NDF. The other financiers include Swedfund, the European Investment Bank and the Ugandan Development Finance Company. A number of German and Dutch development organisations are also taking part. Ericsson AB of Sweden will supply a large proportion of the equipment required.

MTN aims to build a telecommunications system that adheres to the highest international standards. The system, which is based on an open technical design, will afford wide geographical distribution and may be easily upgraded as the need arises. It is anticipated that, when completed, the company's network will serve 130,000 subscribers. MTN's mobile network has already achieved an 80% market share with an estimated 35,000 subscribers and the growing market competition has resulted in greatly reduced mobile call charges. By using a system of prepaid phone cards, MTN reduces possible credit risks, thereby strengthening its financial viability.

Regional structure

Telecommunications services in Uganda are subject to great regional differences. The central region, which includes the capital, Kampala, has about 80% of Uganda's subscribers. In contrast, the northern region bordering on Sudan has only 2% of mobile phone users.

To even out these differences, NDF, in co-financing with the World Bank, has offered a credit to finance expansion of the telecommunications network within the frame-

← *Uganda's telephone density will be raised from 0.27 to 2%. NDF, as part of the World Bank's Northern Uganda Reconstruction Programme (NURP), has offered a credit to finance the expansion of the telecommunications network in the northern region.*

work of the Northern Uganda Reconstruction Programme (NURP). The programme will play a critical role in Uganda's efforts to stabilise political conditions and enhance security in the northern region, which for the past ten years has been the scene of serious political unrest, warfare and widespread guerrilla activity.

The unrest has caused heavy migration from the region and severely hampered external assistance. The resulting social and economic isolation is characterised by growing poverty and severely restricted access to basic public services, such as primary health and education. Modernisation of northern Uganda's telecommunications network will contribute to the integration of the region with the rest of Uganda and the outside world.

Specifically, NURP will improve telecommunications between Kampala and the northern region through the installation of a new radio link. The total cost of the project has been budgeted at USD 28 million, of which NDF's share is more than 20%. The NDF credit will be used to finance deliveries of links, digital exchanges, generators (which may be solar-powered), telephones, and cables, as well as installation and technical assistance.

Cheaper services

In addition to the two telephone projects described above, NDF participates in telecom projects in Malawi, Nepal, Mongolia and Pakistan. What sets NDF's activities in Uganda apart is support to the government's liberalisation reforms through investment in private sector development of the telecomm sector. NDF's participation reflects current trends in the development of the telecomm sector throughout Africa. Through liberalisation and privatisation the population in general is benefiting from more economical and better quality telecommunications services.

It is not a given, however, that the whole population will benefit. Investing in advanced telecomm services in sparsely populated areas is not likely to become any more profitable in the future, from a commercial vantage point, than it is today. The expansion of telecomm services, therefore, must be justified on the calculation of other than purely economic or financial benefits. Under these circumstances, donor assistance or concessional lending of the type offered by NDF is essential to expanding the telecommunications network.

Modernisation of Uganda's telecommunications network will integrate the region with the rest of Uganda and with the outside world.

An estimated 8 million m³ of waste, some of it radioactive, has been dumped in the Sillamäe waste pool since the 1940s. Photography: Lentokuva Vallas Oy

Sillamäe landfill clean-up

NEFCO The radioactive landfill site at Sillamäe in the northeast of Estonia is to be cleaned up at last. Heavily burdened with radioactive contamination and nitrogen, it has long posed a deadly threat to the Gulf of Finland.

An earth bank is all that separates the dump from the sea. This "dam" has long been considered unstable, and some experts fear that it may be breached unless action is taken. Waste from an uranium enrichment plant has been dumped here, a little to the west of Narva and 185 km east of Tallinn, ever since the 1940s, resulting in what is now a major pollution problem. The dump contains an estimated 1,200 tonnes of uranium, 800 tonnes of highly toxic torium and large quantities of heavy metals. But the biggest immediate pollution problem is felt to be the continuous seepage of nitrogen through the barrier and into the sea.

The clean-up will start with the construction of a breakwater enclosing the earth bank, which will then be reinforced with stout concrete piling, the aim being to interpose a strong safety barrier between the pool and the sea. The whole site will then be covered over with a 60 cm layer of soil, to eliminate the risk of ecotoxins leeching into the sea with rainwater or spreading with dust and wind in dry weather.

The remediation project has been budgeted at a total of EUR 20m., with bilateral support from the Nordic governments and the Estonian government's own contribution between them amounting to 8m. The EU Phare programme is putting up EUR 5m., while the Nordic Environmental Development Fund, through NEFCO, is contributing 2m. NIB is planning to take part in the project with a long-term environmental loan of EUR 5m.

Narvesen ASA

NIB has awarded Norwegian Narvesen ASA a loan of NOK 175m. to finance the acquisition of Small Shops Holding AB, which operates the Pressbyrån and 7-Eleven chains. Through this acquisition, Narvesen embarked on an expansion in Sweden and Denmark of its core activity - kiosk chains.

The Narvesen Group is one of Scandinavia's leading enterprises in retail and wholesale trade and in fast food and catering. The Group has a total of some 1,200 retail outlets, i.e. shops, kiosks and take-aways, visited by over 900,000 customers daily.

Narvesen shares have been listed on the Oslo stock exchange since 1996. Activities are divided into four business areas: Retailing Norway, Retailing Sweden, Wholesaling and Catering.

Kiosks and food for people on the move

Narvesen is an established enterprise with a long history as an independent newspaper distributor in Norway. Great changes have been made to the group during the 90s. In addition to its traditional kiosk business, it is now also heavily committed to catering and fast food. Narvesen embarked on a Scandinavian expansion a few years ago and has gained a strong foothold in Sweden and Denmark, by taking over Pressbyrån and 7-Eleven.

Narvesen has shops and kiosks all over Norway. They are centrally located, usually at stopping points for public transport—buses, aircraft, trains and boats. The commodity range consists of newspapers and magazines, paperbacks, tobacco products, chocolate, fast food and some convenience goods. Narvesen also grosses a good deal through Lotto and football pools.

A leading service group

With an annual turnover of about NOK 7bn. and some 9,000 employees, Narvesen is the biggest player of its kind in the Norwegian market and has now also become one of the leading service combines in Scandinavia.

> *"We will create a warmer existence and richer experience for the general public"*

"We are very pleased with the way the Group's performance has developed," says Helge Lindalen, Executive Vice President and CFO. Growth has been especially dynamic in the Swedish retailing sector. The investments made have been successful and the company acquisitions have been well-advised. Helge Lindalen sees a bright future ahead, and he adds:

"Our strength is that we have several legs to stand on: we have chosen to bank on both retailing, wholesale business and the take-away trade."

Scandinavian expansion

In 1997 the Group ventured into the Scandinavian market, acquiring Pressbyrån, one of the biggest kiosk chains in Sweden. Pressbyrån, with a history going back almost a hundred years, has a strong tradition in the Swedish market and offers its customers newspapers, chocolate, tobacco and other products besides. The chain comprises more than 340 kiosks and shops all over Sweden.

"The trend in Sweden's convenience goods and service trade shows," Lindalen continues, "that these chains are going to strengthen their position, especially those in areas with a great deal of traffic. Pressbyrån is well-situated in this respect, with attractive outlets at places like railway stations, underground stations and bus terminals."

Narvesen's Scandinavian strategy also included the acquisition of 7-Eleven, the rights to which were acquired through the takeover of Small Shops Holding. 7-Eleven, with 120 outlets in the principal towns and cities of Norway, Sweden and Denmark, sells mainly fast food, fresh bread and convenience goods.

"We want to be where people are travelling, stay open as needed and offer people the things they want," says Helge Lindalen of Narvesen. This is the concept of the group, which sells food, drink, newspapers and cosmetics to people on the move.

Flexible and close to the customers

Modern living and changing values are making a big difference to people's shopping habits. There are more one-person households than there used to be, people eat out more often, they travel more than they used to and they shop more on impulse.

"We want to be where people are travelling, stay open as needed, we must have products so that people get what they need when they want to shop quickly and efficiently. We have adapted to changes in modern society. The key words in our line of business are flexibility, proximity, longer opening hours and a market-driven product range. With the platform and the chains we now have, I am very optimistic about the future development of the Group's retail business," says Helge Lindalen.

More eating out

More and more people are eating out and also restaurants are often chosen on impulse. New demands are developing for fast, simple but tasty meals. Here again, Narvesen's concept fits in well with the new pattern of self-service and fast food. The Caroline Café, Burger King, Peppes Pizza and T.G.I. Friday's chains are all part of the Group. In addition, Togservice handles catering arrangements on Norwegian trains. Narvesen has a 50% stake in RGN Denmark A/S, which is responsible for all Denmark's railway catering.

"Our catering activities," says Helge Lindalen, "have been characterised by swift expansion. The fast food and pizza market is also growing in Norway, and we've chosen to be in on it."

The Group has also secured important contracts at Norwegian airports, including the new Oslo airport Gardermoen.

The Narvesen Group also includes Vita and Esthetique, which sell perfumes and cosmetics in Norway.

Lindalen says that people are spending more than they used to on personal well-being and enjoyment. Added to which, the general trend is in favour of less tax-free shopping and more spending in the home country. Here again, there is a growing market for Narvesen.

To or from Arlanda Airport in 20 minutes, regardless of tailbacks and whatever the weather. The Arlanda Express offers safe, regular trips between four in the morning and midnight.

New Arlanda Express:

Train to Arlanda in 20 minutes flat

A world class reception is what the Stockholm Tourist Authority are promising when the airport shuttle between Arlanda and the centre of Stockholm was inaugurated in November 1999. After four intensive years of construction work it is now ready, the high-speed train which conveys air passengers in elegant, continental style from the air terminal to the centre of Stockholm in just 20 minutes—the Arlanda Express.

Inger Fjordgren, Arlanda Express Director of Public Relations, promises a luggage check-in next year as well.

Speed, safety and environmental aspects were the Swedish Government's reasons in 1989 for asking the Rail Administration to work out a scheme for financing an Arlanda Airport rail link.

The railway line out to Arlanda, 40 km away from the centre of Stockholm, has been constructed partly—the stretch from Stockholm Central to Rosersberg, parallel to the main railway line—by the National Rail Administration and partly—the remaining stretch to Arlanda—by the A-Train consortium.

"This project is jointly financed by the State and business interests," says Inger Fjordgren, Arlanda Express Director of Public Relations. "The Arlanda line is the first big infrastructure project in Sweden in modern times to be largely financed by private enterprise," she adds.

The A-Train AB consortium, in charge of the SEK 4,500m. project, is building the line mainly with private funding. As soon as work is completed, ownership of the line passes to the State. In return, A-Train will be entitled to operate the line until 2040.

For a total of SEK 3,850m., A-Train has commissioned the entire package, rolling stock included, on a turn-key basis from Arlanda Link Consortium. This consortium includes the Swedish companies NCC (incorporated Siab included) and Vattenfall. Equipment has also been supplied by the British Alstom (formerly GEC-Alstom) and Mowlem companies. All construction work was done by Banbrytarna/NCC, while Alstom provided signalling and telecommunications systems and rolling stock, and tracks and points were delivered by Mowlem.

As a security and to cover any cost overrun, A-Train has arranged mainly private finance through loans totalling about SEK 5,000m.

Inger Fjordgren says that they expect to take over a considerable share of passenger traffic to Arlanda. At present most of the passengers go by private car, airport bus and taxi.

The trains for Arlanda will leave every 15 minutes from their own platforms at Stockholm Central Station. Travelling at speeds of up to 200 km/h, they will make the journey in just under 20 minutes.

At Arlanda itself, the train will stop at two stations: Arlanda South, for Terminals 2, 3 and 4, and Arlanda North, with exits to Terminal 5 and Sky City.

"The whole system," says Arlanda Express Managing Director Göran Lundgren, "is designed as a continuation of the air journey rather than a traditional rail link. Our service concept is in line with the service which the airlines have to offer. There will be a definite 'flight feeling' about the Arlanda Express."

Arlanda Express

1994 tendering competition decided: order landed by the NCC-Siab-Vattenfall consortium together with the British Alstom and Mowlem companies.

1999 Project completed after a four-year construction period.

Total cost: MSEK 4,500.
NIB's share of lending: MSEK 500.

The pilot project that succeeded beyond expectation

Alternative model of road construction finance

"The rapid progress of the Nordic area's first privately financed motorway project has inspired praise, astonishment and admiration—and not without reason. Everyone involved in the project has good cause to be proud of their achievement."

Says Tom Schmidt, Managing Director of the Nelostie Oy road company. The investment phase was completed in the autumn of 1999, with the official opening of the motorway from Järvenpää to Lahti in October. The second phase will be concerned with getting value for money: that is to say, every year until the end of 2012 the state is to pay the company a charge based on traffic statistics. And for the same length of time the road company, as road administrator, will be responsible for maintaining the motorway.

Tom Schmidt says that the motorway project got off to a record-quick start. Compared with the traditional model of road construction, he believes the completion time was five or six years shorter.

Shadow Toll

The model for financing the private road comes from the UK where the Shadow Toll system of post-construction finance has been tested with good results. In this model the company responsible for the project assumes full responsibility for planning, construction, finance and road maintenance, in the present instance for a period of 15 years.

The cash flow from the state to the road company started immediately after the contract had been signed. The state has pledged itself for 15 years to pay the road company a certain amount for every vehicle using the road. According to Tom Schmidt, the payment from the state is based on different price zones. These are four in number. Zone four is a "zero zone" which constitutes a payment ceiling, aimed at limiting the road administration's liability for the cost of using the road. In this way the state will be spared extra expense if traffic volumes prove greater than expected.

Everybody is our customer

The motorway to Lahtis was completed almost one year ahead of schedule.

Managing Director Tom Schmidt says that this rapid completion was partly due to the new planning model. "For the first time we used what is called overlapping processes. The road construction workers were ready and waiting as the plans emerged from the planning office. In that way we avoided unnecessary waiting periods and the planners too were activated in a special kind of way, knowing as they did their drawings would be put into effect almost in real time.

"The tremendous amount of good publicity attracted by the road project was another thing that had everyone concerned on their mettle. I think it had quite an impact on efficiency.

"Right from the start our attitude has been that everyone using the road is a paying customer. And so we try to minimise the necessity of closing the road for blasting operations, taking a maximum of ten minutes' closure as our benchmark. The speed limits were suspended at weekends and the asphalting was done at night."

Tom Schmidt summarises the company's principles as follows: "Producing motorway service is a business activity, the profitability of which hinges on the quality of the service and the traffic volumes on the road.

"When the time comes we will see whether the traffic density on the road turns out as estimated and whether we land any more road projects of the same kind."

Tom Schmidt, Managing Director of the Nelostie road construction company: "Producing motorway service is a business activity, the profitability of which hinges on the quality of the service and the traffic volumes on the road."

Project facts

Length of the motorway:	69 km
Bridges:	88
Rock removal:	1.6 million m^3
Overburden removal:	2 million m^3
Asphalt surfacing:	1 million m^2
Game fencing:	140 km
Estimated value of the contract:	FIM 1,200 million
Credit from NIB:	FIM 250 million

Water purification in Russia

In projects of the magnitude of St Petersburg and Kaliningrad, NIB co-operates with various bilateral financiers and other multilateral ones like the EBRD, the World Bank and NEFCO.

The NIB strategy gives priority to projects with a positive effect on the environment in neighbouring regions to the Nordic area. Both the Baltic and Barents regions have priority in this respect.

NIB is involved in two of the most widely noted environmental projects in Russia—the St Petersburg and Kaliningrad water utilities. Both projects are among the most important remaining hot-spots of those presented in connection with the HELCOM agreement in 1974. Originally 132 of these hot-spots—meaning sources of heavy pollution—were identified.

The St Petersburg project, started in 1996, has now entered its implementation phase. The project has suffered delays following the economic difficulties entailed by the "Russian crisis" of August 1998. Tariff adjustments, for example, have not proceeded according to plan, with the result that quite significant reduction in the investment programme have been made.

Focus on Kaliningrad

For the Kaliningrad project, the project and investment analysis is based partly on a current feasibility study financed by the Danish bilateral organisation DEPA. NIB has granted a loan of USD 13m. for the project and is currently negotiating a loan agreement.

Drinking water is a serious problem in Kaliningrad today. The quality of the water falls short both of the Russian standard and of the WHO quality codes. The raw water for the drinking water process is extracted from the River Pregol. That river is unsuitable for the purpose, because a large proportion of industrial effluent is discharged into it unpurified. The working part of the treatment process mainly concerns household sewage, but also this treatment process is insufficient. The conclusion is that at present most wastewater flows, untreated or insufficiently processed, into the Baltic or goes straight into the soil and the groundwater.

A facility for extracting raw water from groundwater has been under construction since the 1980s but has yet to achieve completion.

The city water mains are of poor quality, with heavy leaks and frequent interruptions of water supply. Consequently, the population cannot rely on the flow of water. The perpetual interruptions of supply can lead to a further deterioration in water quality, engendering infectious water-borne bacteria and diceases. Water consumption is about 430 l/c per day, compared to a western town like Helsinki, for example, it is about 200 l/c per day.

These conditions have resulted from a prolonged lack of funds for renovation, investment and maintenance. It has not been possible, for example, to purchase the chemicals needed for purifying both water and wastewater.

Finance

The total project, including "soft services" as well as direct investments, is expected to cover about USD 63m. in a three or five-year perspective. The financiers are both bilateral and multilateral, as well as local.

Overall Objectives

The overall objectives in the Kaliningrad project are as follows:

- To develop the Kaliningrad Vodokanal (KVK) water company into a more autonomous company and a customer-oriented service provider.
- To develop the city and region of Kaliningrad into a better owner of its water company.
- To implement a detailed programme of investment in water supply and wastewater treatment.

Experience has shown that a project of this size demands a comprehensive institutional programme for both operating company and owners ahead of the investment programme. The financiers are collectively insisting on this.

An institutional programme provides a necessary synergy, with the company taking care of a progressively larger share of project implementation. The main components of such a programme are transfer of knowledge through strict education, training and benchmarking with other utilities in Nordic Capitals.

Benchmarking is an important component which shows that, although there are big differences in the conditions under which operators have to work, they are all pursuing the same target, namely that of raising water

Kaliningrad has serious problems with its drinking water supply and with wastewater treatment. Today, most of the city's wastewater flows, unprocessed or insufficiently processed, into the Baltic Sea or straight into the soil and the groundwater.

and sewerage services in each city to the highest possible level of economic and environmental efficiency. At this stage of things, KVK employees are being given the opportunity of working parallel to their counterparts in the western utility, asking questions, comparing similarities and dissimilarities and drawing conclusions of their own which can be fed back into their own organisation.

The institutional part of the project is one of the cornerstones, and does more than any other component to ensure that the project will be sustainable even after the technical investment programme.

Detailed investment programme

The programme will among other things include the following components and targets.

- Investment in a groundwater facility, i.e. upgrading of the existing construction and process development so as to ensure groundwater supply. This will reduce dependence on the surface water of the River Pregol, thus avoiding a major infection source, which in turn will benefit both the quality of the water and the general health situation.
- Rehabilitation of pumping stations and mains. This component will lead to more dependable deliveries to customers and, by reducing interruptions in the water supply, to a qualitative improvement.
- Installation of water meters. This way people will be invoiced for what they consume, which usually leads to a substantial drop in consumption and also in wastewater output.

A project implementation unit has been set up in Kaliningrad, with local experts supported by foreign ones. These experts will have the assignment of training the new unit in project management issues and of transferring knowledge concerning follow-up etc.

A unit consisting of foreign experts is to be outsourced. These experts will have the ultimate operational responsibility for implementing and following up each part of the investment project.

Environmental effects

The direct and indirectly quantifiable environmental effects of the project are:

- Positive health effects in the city and region, by improving the quality of drinking water and reducing wastage.
- Significant reduction in the amount of unprocessed wastewater and introduction of a high-quality treatment process, which will have a directly positive impact on the Baltic Sea and on local watercourses.
- Strengthening of KVK's management capacity, which will greatly improve the prospects of further pollution cuts for the future.
- Reduction of leakages from the sewerage mains, which will mean far less contaminated water escaping into soil and groundwater.
- Energy consumption will be reduced through the installation of new, modern and far more energy-efficient pumps and other equipment.
- Safety. Fewer interruptions and new equipment meeting other safety requirements will improve the safety of employees and consumers. Fewer workplace accidents are anticipated.

Detailed wastewater treatment investment programme

- Investment in the wastewater processing plant, for both mechanical and biological purification. This component will reduce discharges of unprocessed sewage into the Baltic Sea and local watercourses—a significant change.
- Rehabilitation of pumping stations, sewage intakes and mains. This component will mean more reliable deliveries to the wastewater processing plant, thus reducing the proportion of sewage flow directly into the soil and polluting groundwater.

Anders Lund

Kaliningrad

Kaliningrad is an autonomous region of the Russian Federation, wedged in between Poland and Lithuania and thus geographically cut off from the rest of Russia. Historically, Kaliningrad is better known as Königsberg, one of the largest and most successful cities of what was then Prussia.
Kaliningrad today has a big military base which employs a large part of the population. Fishing is the main industry.

	County	*City*
Population	940,000	420,000
GDP, USD	1,400 p/c	2,200 p/c

Hyötytuuli doubles windpower capacity

Finland's windpower production was virtually doubled with the commissioning of Suomen Hyötytuuli's wind farm outside Pori on the west coast of Finland in July 1999. The windpower company operating the farm has been formed by nine municipal energy utilities, some of which are privately owned, public companies, while others are entirely municipal.

The new wind farm has a total of eight units with a combined output rating of 8 MW. Annual output is expected to reach 20 GW/a. During 1998, windpower in Finland generated the equivalent of 23 GW/a.

The wind turbines have been erected in areas where wind conditions are rated good, namely the Tahkoluoto and Reposaari industrial zones and the road embankment out to Reposaari, near Pori, which has taken delivery of wind farms.

The total cost of the project is FIM 55 million NIB's share of the credit finance amounts to FIM 25 million. The Finnish Government is providing subsidies of FIM 35 million.

The eight wind turbines, 60 meters high and weighing 120 tons, were put up in one-and-a-half weeks.

New luxury hotel opened in Riga

The Norwegian-owned Park Hotel Ridzene has re-opened following a comprehensive refurbishment. The Norwegian Investa, Varner and Haakon groups have invested NOK 93m. in the upgrading of this formerly state-owned hotel in the centre of Riga, and Hotel Manager Arild Sjödin declares that it fully meets with the exacting demands of present-day business travellers.

The hotel has 95 high-quality rooms whose attractions include marble-lined bathrooms. Park Hotel Ridzene does not belong to a hotel chain as such, but reservations can be made through Steinberger Reservation Service. The hotel is counting on 55% occupancy to meet its budget.

Park Hotel Ridzene

Owners: Norwegian Investa (50%)
Varner (25%) and Haakon Group (25%).

Project cost: USD 15m.

Finance: NIB USD 3.8m. and Landesbank Schlesvig-Holstein Girozentrale, Copenhagen branch, USD 3.8m.

NIB financing Iceland's telecom

The Icelandic Telecommunications Administration changed to digital telephony at the beginning of the 1990s. In addition to new telephone exchanges it has invested in a fibre optic cable (Cantat 3) running from Canada by way of Iceland and the Faroes and linking these two island countries with Denmark, Britain and Germany.
For this investment, NIB has awarded credits totalling USD 20.5 million.

As part of a credit facility granted to Landsbanki Islands, NIB has also helped to finance the new GSM company, Tal hf.

NIB at eco-fair

The Ecocity 99 ecological exhibition attracted specialists and interested laymen to a joint presentation of environmental technology in the Baltic region. The biennial event took place in the Wanha Satama exhibition centre in Helsinki at the beginning of September.
The NIB stand, which was appreciated by visitors to the exhibition, presented current eco-finance and, among other things, the Bank's environmental commitments in the Baltic region. Pictured here is NIB environmental analyst Roland Randefelt (right) receiving visitors.

New agreement on NIB

A new agreement on NIB entered into force on 18th July 1999. The agreement, approved by the parliaments of the Nordic countries, consolidates the Bank's status as an international legal person and in other respects confers the same status as that of the other multilateral financial institutions with which NIB co-operates. It attaches great importance to provision being made in the Bank's activities for the mutual interests of the borrower countries and the Nordic area.

Headquarters agreement signed

← NIB has signed a headquarters agreement with the Finnish Government settling in detail the matters connected with the Bank's location in Helsinki. The agreement was signed on Finland's behalf by Minister Suvi-Anne Siimes and for NIB by Bo Göran Eriksson, Member of the Board of Directors, and Jón Sigurðsson, President. The agreement came into force on 7th August 1999.

Headquarters agreement for NDF and NEFCO

← The Nordic Development Fund (NDF) and the Nordic Environment Finance Corporation (NEFCO) signed, on 14th October 1999, a headquarters agreement with Finland matching the agreement NIB and governing relations between each of them and the Finnish Government. The agreement was signed on Finland's behalf by Environment Minister Satu Hassi, for NDF by President Jens Lund Sørensen (left) and for NEFCO by President Harro Pitkänen.

New status agreement with China

← A new status agreement between NIB and the People's Republic of China was signed on 22nd October 1999. In connection with the signing, which took place at NIB's head office in Helsinki, a credit frame of USD 60m. was agreed on. The People's Republic was represented at the ceremony by Deputy General Secretary Xu Fangming of the Chinese Ministry of Finance and NIB by President Jón Sigurðsson and Executive Vice-President Erkki Karmila (left).

New environmental officers

Anders Lund (S)

has joined the Bank's International Department as Senior Adviser in the Central and Eastern European Region. His previous appointments have included that of Financial Director with Riga Water, Latvia, and Expert Adviser to the Novgorod City Administration in Russia, as well as serving in a world Bank project in Ulaanbaatar, the capital of Mongolia.

John Richard Hansen (N)

has been appointed Environmental Analyst in the Bank's Appraisal Department. He has a M.Sc. in Marine Ecology from University of Bergen and University of Tromsø, and research experience in sub-arctic and arctic environment. He comes from the Norwegian Polar Institute, Tromsø, where he has been working in the Environmental Management Department since 1994 with circumpolar management issues.

This is NIB

The Nordic Investment Bank (NIB) finances private and public projects both within and outside the Nordic countries.

NIB is a multilateral financial institution owned by the five Nordic countries, and operates in accordance with commercially sound banking principles. The member countries appoint representatives to the Bank's Board of Directors and to its Control Committee.

NIB offers its clients longterm loans and guarantees on competitive market terms.

NIB acquires the funds to finance its lending by borrowing on the international capital markets. NIB's bonds enjoy the highest possible credit rating, AAA/Aaa.

NIB has its headquarters in Helsinki and offices in Copenhagen, Oslo, Reykjavik, Stockholm and Singapore. The Bank has approximately 130 employees, recruited from all the five Nordic countries.

NIB's financing possibilities

The Nordic Investment Bank finances projects of common interest within the Nordic region, and international investment projects of mutual interest to the customer country and the Nordic countries. In the neighboring regions of the Nordic countries, the Bank grants loans to projects, which support economic development, and to investments which improve the environment. At present NIB is taking part in the financing of projects in ca. 40 countries.

NIB also participates in the financing of foreign investments, which provide employment in the Nordic countries.

Nordic Loans

Investment loans

NIB offers medium and longterm loans with maturities of 5 to 15 years. The loans are granted in various currencies at fixed or floating marketbased interest rates, for up to half of the project's total cost.
NIB finances projects in:

- The manufacturing sector, including investments in facilities and machinery,
- Infrastructure, including transportation, telecommunications, energy, water supply, sewerage and waste treatment,
- Environmental improvement, both in the private and the public sector,
- Research and development,
- Crossborder investments, such as mergers and corporate acquisitions,
- Foreign investments in the Nordic countries.

Regional loans

Regional loans are granted to national, regional credit institutions for the further development of business in priority regions.

International Loans

Project investment loans (PIL)

The core of NIB's international lending operations consists of project investment loans (PIL). These are longterm loans—up to 20 years—for projects growth markets in Asia, the Middle East, Central and Eastern Europe, Latin America as well as Africa.

The PIL loans are usually granted on a sovereign basis but may also be granted without a government guarantee, particularly to private sector infrastructure investments. The loans are granted for up to half of the project's total cost. The PIL loans can be utilized to finance all types of project costs, including local costs. The loans are granted at marketbased interest rates in various currencies. PIL loans have been granted for projects in more than 35 countries.

Investment loans outside the Nordic countries

NIB provides loans to investments, including joint ventures and corporate acquisitions, within the OECD area.

The Neighboring Areas

Investment loans

NIB participates in the financing of projects in the Baltic countries through investment loans to Nordic companies, which are investing in the Baltic countries.

Environmental loans (MIL)

Environmental investment loans are granted to the Nordic countries' neighboring areas. The loans are granted to public and privatesector environmental protection projects in northwest Russia and the Baltic Sea region. The projects are to help in reducing environmental degradation, and thereby also in reducing crossborder pollution. Priority is given to projects that can be carried out in co-operation with other financing sources.

The environmental investment loans are granted on the basis of commercial banking terms to governments, governmental authorities, institutions and companies.

Credit volume and net interest earnings on the increase

The economies of the Nordic countries continued to make good progress during the first eight months of the year. Domestic demand shows good growth and industrial output is rising. Employment is also increasing, and inflation remains low. World economic forecasts point to moderate, steady growth for the rest of 1999 and in 2000. This favours the Nordic economies. The investment needs of Nordic industry are expected to increase at the beginning of the new century – output capacity is heavily subscribed already.

The Nordic Investment Bank's results for the first eight months of 1999 were as follows:

During the period covered by this report, loan disbursements and guarantees issued totalled euro 924 million as against euro 616 million for the same period last year. Loans outstanding at the end of the period totalled euro 8,439 million (1998: 7,132), which was 17% up on the corresponding juncture one year earlier.

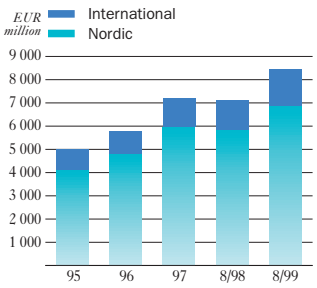
Net interest income totalled euro 92 million (91 million). The profit for the period was euro 69 million as compared with 78 million for the corresponding period last year. The difference was due to a provisioning of euro 2 million for possible losses on loans and to a negative effect of euro 4 million on financial posts, of which the latter mainly stemmed from market rate fluctuations of financial assets due to a rise in interest rates during the summer.

The balance sheet total was euro 12.3 million as against ECU 11.1 million at the turn of the year. Exchange rate changes account for 60% (euro 714 million) of the increase during the first two-thirds of the year. Net liquidity at the end of the period was euro 2,241 million as against 1,933 million 12 months before. Equity at the end of the period equalled euro 1,183 million (1,102).

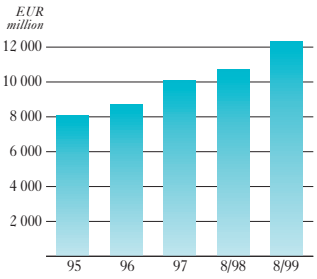
During the period the Bank paid a dividend of euro 35 million on its surplus for 1998 to its owners, the Nordic countries.

The quality of the Bank's loan portfolios and financial positions remains on the whole consistently high. The Bank has not noted any credit losses during the period. For the Bank's part, the Asian crisis, the deepest phase of which is now believed to be over, has not entailed any notable delays in the servicing of loans outstanding. The steady growth of NIB's profits for the first eight months of the year is expected to continue, and a profit in line with the eight-month result can be expected for 1999 as a whole.

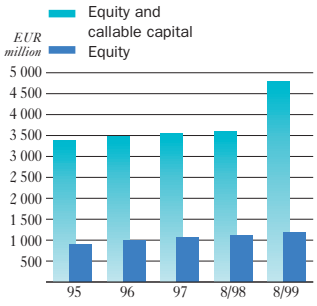
Loans outstanding



Total assets



Equity and callable capital



NORDIC INVESTMENT BANK

Headquarters

Fabianinkatu 34
P.O. Box 249
FIN-00171 Helsinki
Finland
Telephone: +358 9 18 001
Telefax: +358 9 1800 210

Other Offices

Copenhagen
Landgreven 4
DK-1301 Copenhagen K
Denmark
Telephone +45 33 144 242
Telefax +45 33 322 676

Oslo
Dronning Mauds gate 15
N-0119 Oslo
Norway
Telephone +47 2201 2201
Telefax +47 2201 2202

Reykjavík
Kalkofnsvegur 1
IS-150 Reykjavík
Iceland
Telephone +354 5 699 996
Telefax +354 5 629 982

Stockholm
Västra Trädgårdsgatan 11 B
S-111 35 Stockholm
Sweden
Telephone +46 8 613 8525
Telefax +46 8 205 728

Singapore
Regional Representative Office
78 Shenton Way # 16-03
Singapore 079120
Telephone +65 2276 355
Telefax +65 2276 455

Internet

http://www.nibank.org