



10. The IST Companies Operators and Equipment Manufacturers

The European telecommunications market shall be fully deregulated by January 1, 1998, according to several EU agreements, presented in, for instance the "Services Review" of March 22, 1993. However, some governments are having troubles in this privatisation process. So, for instance, is Deutsche Telekom the only company holding a license to provide facilities-based international switched voice services in Germany. Partial privatisation of the company took place in November 1996, but the German government will retain a majority of the shares until 2000.

Regarding France, the situation is similar as far as goes the license holding — only France Télécom holds one to provide facilities-based international switched voice services. And the French government has over the past years displayed a kind of on-again/off-again privatisation policy, with no decisions taken as yet.

In Spain, Telefónica de España still has a monopoly over international telephone services, although the government approved competition for the provision of voice and data services within closed user groups in the beginning of 1996. In Italy, the license situation is similar, so far, only Telecom Italia holds a license to provide international services.

Sweden got its first telecommunications law on July 1, 1993. At the same date, Swedish Telecom, Televerket, was incorporated as Telia AB. So far, 100% of the shares are owned by the Swedish state. However, competition is free in Sweden, and Sweden was together with New Zealand ranked as the most liberated among the OECD countries by the OECD in 1993¹.

In sum, deregulation is on its way even in Europe, there is no doubt about it, but a fully liberalised telecommunications market may be a bit further off than most of the European users may wish. The implications of the strategic alliances, so important to this industry, are not yet evident. The Ovum Telecoms Industry Alliances Map 1995, see page 43, gives an inkling.

¹ See OECD "Communications Outlook 1993" and "TELDOKs Årsbok 1994", fig. 144, p. 202.

When reading this chapter, it becomes evident to the attentive reader, that there are a number of companies which should have been presented here but which are not included. Examples are the German media giant Bertelsmann, American Microsoft, Italy's (and Berlusconi's) Fininvest Italia SpA, just to mention a few. Our feeble reason for this is that there are just too many of them in our field. More seriously, first of all, we have chosen to describe companies that are directly or indirectly active in the Swedish market, although we cannot guarantee that we have covered them all. Secondly, we have chosen to stay with a rather conservative definition of the telecommunications industry, since we are not capable of telling you where it starts and where it ends.

Finally, there are some very, very new players in the Swedish telecommunications market, so new that there is no public information available about them. Such companies are:

- FT Nordphone AB
- TELiT AB
- First Telecom Sweden AB
- Tele Express International SA

According to information on the Internet, these are described by Sam Spens Clason as *"not known at directory enquiries, so there isn't really much to write about them yet. If they don't even have a phone of their own..."*

The sources of information for this chapter are several and not indicated in each separate case. Information about the operators and suppliers has been collected from companies' home pages, and, in some cases, from their annual reports, from several OECD reports, in particular *"Communications Outlook 1997"*, from two guides from TeleGeography, *"The TeleGeography 100 — A Graphical Guide to the World's Leading Information Companies"*, and *"New International Carriers 1996"*, and from the general press. One of several interesting sources on the Internet is the Telecom Observer's *"Industry Talk"*. More information can also be found in OVUM's *"The Major Telcos in 1996"*.

The British telecom intelligence firm Ovum has mapped the major telecommunications operators of the world and their strategic alliances, as shown in this diagram. Several interesting facts should be noted:

- i) not one single telecommunications operator is large enough to cope with global telecommunications on its own;
- ii) in spite of the appeal a number of people see in transnational and transcontinental mergers to build global communication conglomerates, most people's calling habits still are related to their physical communities. Only the very avid Internet users, and so far they make up a minority of the global telecommunications users population, take advantage of the mergers at present;
- iii) by March 1993, there were in total 1 660 strategic alliances formed within the IT industries. 366 pertained to telecommunications. How many are there now? And what are the capacities of each one?²

Source: Ovum

² For further information see information from the following sources: Hagedoorn and Schakerad, Maastricht Economic Research Institute in Innovation and Technology, quoted in *The Economist*, March 27, 1993, and "TELDOKs Årsbok 1994" p. 204.

The Top 10 Telecommunications Operators in the World in 1995

Company and country	1995 revenues in million of US\$	Number of employees
1. NTT (Japan)	84 045	231 000
2. AT&T (USA)	51 374	127 000
3. Deutsche Telecom (Germany)	46 151	213 500
4. France Télécom (France)	29 613	167 660
5. BT (UK)	22 785	130 700
6. GTE (USA)	19 957	106 000
7. Telecom Italia (Italy)	18 503	90 222
8. Bell South (USA)	17 886	87 571
9. MCI (USA)	15 265	50 367
10. Telefónica (Spain)	13 958	69 570

Fig Ny 10–3: This ranking was made by the OECD, based on the figures of 1995. It includes only companies operating within the OECD countries. Swedish Telia AB is number 25 on this list, with revenues of US\$ 5.8 billion, and 33 065 employees.

Source: OECD: Communication Outlook 1997, Vol. 1, ©OECD, reproduced with the permission of the OECD

Major Telecommunication Equipment Manufacturers in the OECD Area in 1995

Company	Country	Revenues in million US\$	Number of Employees
1. Siemens	Germany	61 942	373 000
2. NEC	Japan	46 729	152 719
3. Fujitsu	Japan	39 978	165 056
4. Alcatel NV	France	32 141	191 830
5. Motorola	USA	27 037	142 000
6. Lucent Technologies	USA	23 286	124 000
7. Ericsson	Sweden	13 846	84 513
8. Northern Telecom	Canada	10 653	63 715
9. Nokia	Finland	8 429	31 948
Totals:		264 042	1 328 781

Fig. Ny 10-4: The largest telecommunication equipment manufacturers in the OECD area in 1995 spent US\$ 23.9 billion on research and development, and employed 1 328 781 persons.

Source: OECD: Communications Outlook 1997, Vol. 1, ©OECD, reproduced with the permission of the OECD

10.1. National IsT Initiatives and Authorities

A great number of countries have initiated national information and communications initiatives, demonstrating local creativity, national political will-power, and financial strength, by expressing more or less ambitious plans for ICT development, and its role for future economical growth. Most countries have expressed their political intentions in official documents, mostly created by a ministry or an authority. However, the field of operations and the areas of power for the existing regulatory and licensing authorities differ from country to country. Those specifically interested in national initiatives can find information in a report called: "IT världen runt — nationella initiativ", STATT 9502. by the Swedish Office of Science and Technology, (STATT).

10.2. Liberalisation

As has been mentioned several times in this document, liberalisation is being pushed by the EU, among others, and promoted by the recent WTO agreement. The old monopolies of Western Europe are being deployed more or less rapidly, depending on national politics and economics.

In order to provide an understanding and the facts of the national telecommunications regulatory situations, the OECD has undertaken a study among their member countries, asking them to answer a certain number of questions related to the competitive status in their countries. The results are publicised in "Communications Outlook 1997, volume 2, Regulatory annex". According to this publication the Swedish situation is described as follows:

Telecommunication Market Situation in Sweden by January 1997

Infrastructure provision for following service	Regulatory status	Number of licensed operators	Date of future proposed regulatory change
Local PSTN	Open competition	6	1997
National PSTN	Open competition	6	1997
International PSTN	Open competition	6	1997
Leased lines	Open competition	5	1997
Analog cellular mobile (NMT, etc.)	Open competition		1997
Digital cellular mobile (GSM, etc.)	Open competition	6	1997
Other mobile communication (PCS, PCN, CT-2, etc.)	Open competition	3	
Radio paging	Open competition	2	1997
Payphones	Open competition	2	1997
Cable television infrastructure	Open competition	2	none
Data communication	Open competition	numerous	1997
Internet access	Open competition	numerous	1997

Source: "Communications Outlook 1997, volume 2, Regulatory annex", ©OECD, reproduced with the permission of the OECD

10.3. The Operators

(N.B. All figures refer to 1995 unless otherwise indicated. Current information is available via the homepages of each company on the Internet.)

AirTouch Communications, Inc.

Country of origin: USA

Some basic facts:

- * AirTouch is the largest international mobile telephone company in the world
- * The company was formed in 1994, as a spin-off from Pacific Telesis
- * AirTouch has a stake in Globalstar, a company planning to offer satellite based telephone services to its subscribers by 2000

The company in numbers:

- * 1995 revenues: US\$ 1.59 billion (1994: US\$ 1.24 billion)
- * Number of US subscribers in 1995: 2.3 million
- * Number of international subscribers: 800 000

Ameritech - American Information Technologies

Country of origin: USA

Primary operations:

- * In 1993, Ameritech offered telecommunications services in the states of Illinois, Indiana, Michigan, Ohio and Wisconsin — covering 17% of the US population. In 1995, the company is announcing that it is growing in order to reach new customers in 50 states and 40 countries
- * Core businesses are: Telephony, cellular and paging, caller ID, Internet services
- * Projected growth of the world communications market: From US\$ 677 billion in 1995 to US\$ 1 trillion in 2000, a growth rate of 57% over five years
- * Ameritech International was founded in 1990 in order to exploit business opportunities outside of the US

International partners:

- * **In North America:** Atlantic Canada On-Line
CCL Group, Canada
Software Kenetics, Canada
Unisys Canada
- * **In Europe:** Belgacom S.A., Belgium
Credit Communal, Belgium
Kredietbank, Belgium
Singapore Telecom
SOFINA, Belgium
Tele Danmark, Denmark
Matav RT, Hungary
Deutsche Telekom, Germany
NetCom GSM, Norway
Comvik, Norway
Orkla, Norway
Polska Telefonja Komorkova, Poland
France Télécom, France
Telekommunikacja Polska S.A., Poland
- * **In Asia:** China Unicom, China
ChinaCom, China
Sky Network Television
Bell Atlantic
TCI
Time Warner
Telecom Corporation of New Zealand

The company in numbers:

- * 1995 revenues: US\$ 13.4 billion (1992: US\$ 11.15 billion)
- * Number of employees: 65 345 (1992: 71 300)
- * Mainlines 1995: 19 057 000
- * Mobile subscribers: 1 891 000

AT&T

Country of origin: USA

Some basic facts:

- * AT&T was incorporated in 1885
- * AT&T today is focused on offering customers a full menu of communications and information services — long distance telephony service, local telephony service, wireless services, on-line and Internet access services, home entertainment
- * AT&T is the driving force behind the global alliance WorldPartners, and the company is also a member of Uniworld
- * AT&T is an important partner to Telia
- * Lucent Technologies is basing its manufacturing of telecommunications systems, software, and products on research activities conducted by Bell Laboratories
- * Until 1984, when deregulation went into effect, AT&T was the largest company in the US
- * AT&T's international operations are steered by the FCC, Federal Communications Commission, the US regulatory authority
- * The AT&T network is the most extensive in the world. It includes more than 2.75 billion circuit miles of transmission facilities, and it transmits more than 95% of traffic over fiber-optic circuits
- * More than 210 million voice, data, and image calls are handled each business day
- * AT&T provides long-distance telephone service to every country and territory in the world, 280 in all. The company offers direct-dial access to more than 260 countries and territories
- * AT&T has a subsidiary in Sweden since 1988

The company in numbers:

- * 1995 revenues: US\$ 51.3 billion (1992: US\$ 64.9 billion, approximately US\$ 39.5 billion generated by telecom services)
- * Number of employees: 127 000 (1992: 312 700, with 50 000 employed outside of the US) Number of mobile subscribers: 5 500 000

Banverket

(The Swedish National Rail Administration)

Country of origin: Sweden

Some basic facts:

- * Banverket is relatively new as a telecommunications operator in Sweden. In 1988, the Swedish State Railroads, SJ, was divided into two companies, SJ, handling railroad transports of passengers and goods, and Banverket, responsible for the infrastructure, covering 9 820 kilometers of railroads, and 11 000 kilometers of main cables
- * 7 000 kilometers of optical fiber-cable, 90 switches, and 2 300 cellular base and link stations are part of the telecommunications infrastructure

The company in numbers:

- * 1995 revenues: 14 billion SEK
- * Number of employees: 6 405

Belgacom

Country of origin: Belgium

The company in numbers:

- * 1995 revenues: US\$ 4.3 billion
- * Number of employees: 26 012
- * Number of mainlines: 4 623 000
- * Number of mobile subscribers: 302 000

Bell Atlantic Corporation

Country of origin: USA

Some basic facts:

- * In 1992, Bell Atlantic had 18 million telecommunication subscribers in eastern US, in the states of New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and Washington D.C. In 1995, the firm reported 19 million mainline subscribers
- * In 1994, Bell Atlantic's chairman Ray Smith put the concept of the information highway on many people's mental maps. He announced that the firm would merge with TCI, the largest US cable TV company. The deal was never closed, but the vision of a multi-purpose communication network which could deliver hundreds of channels of voice, data, and video information to homes and offices still is influencing our ideas of the future
- * Bell Atlantic Mobile merged with NYNEX Mobile in 1995, becoming Bell Atlantic NYNEX Mobile, the largest cellular carrier on the American east coast. The 1996 US telecommunications law allows the companies to provide long distance service jointly
- * Bell Atlantic is part of an alliance with AirTouch and USWest

The company in numbers:

- * 1995 revenues: US\$ 13.4 billion (1994: US\$ 13.8 billion; 1993: US\$ 13.1 billion; 1992: US\$ 12.6 billion,)
- * Number of employees: 61 800 (1992: 71 400)

Bell Canada

Country of origin: Canada

The company in numbers:

- * 1995 revenues: US\$ 5.9 billion
- * Number of employees: 48 333
- * Number of mainlines: 10 001 100

Bell South

Country of origin: USA

Some basic facts:

- * Bell South provides telecommunications services through 21 million lines to subscribers in the southern states of Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee. This makes Bell South the largest RBOC (Regional Bell Operating Company) currently
- * Bell South supplied telecommunications services to the 1996 Olympic Summer Games in Atlanta
- * Through Bell South Interactive Media Services, Inc., Bell South is providing cable TV, video programming and distribution, and developing video-on-demand and other entertainment services
- * The company is involved in the operation of mobile networks in five Latin American countries: Argentina, Chile, Mexico, Uruguay, and Venezuela
- * The largest of Bell South's international interests is in Australia, where the company is part of the Optus consortium, with 24.5%. The Optus consortium, the second operator in Australia, is currently constructing a digital mobile network
- * Bell South has interests in Ram Mobile Data which is constructing and operating mobile data networks in the US, UK, Denmark, France, Australia, the Netherlands, Belgium, and Singapore
- * European headquarters are based in Brussels

The company in numbers:

- * 1995 revenues: US\$ 17.9 billion (1992: US\$ 15.2 billion; 1994: US\$ 16.6 billion)
- * Number of Employees: 87 571 (1992: 97 112)
- * Number of mainline subscribers: 21 133 000
- * Number of mobile subscribers: 3 600 000

BT

Country of origin: Great Britain

Some basic facts:

- * BT's main products and services are local, long-distance, and international calls; telephone lines, equipment and private circuits for homes and businesses; private networks; and mobile communications services
- * In the UK, BT has 20.5 million domestic and 6.8 million business exchange lines
- * BT handles about 100 million local, national, and international calls every day
- * BT offers per second pricing on direct dialled calls to its customers
- * Through Cellnet, BT offers mobile GSM services across the UK
- * BT has the ambition to develop and grow new business in the UK market, which is one of the most open and competitive in the world, with more than 150 licensed operators
- * BT has a 20% stake in American MCI Communications Corp., with whom it owns the joint venture company Concert, offering a one-stop shopping facility for customers with global communications needs
- * In Europe, BT is involved with joint ventures with Spanish Banco Santander, German VIAG, and Italian Banca Nazionale del Lavoro
- * BT has formed Telenordia together with TeleDanmark and Norwegian Telenor in order to offer telecommunications services in the Swedish market

The company in numbers:

- * 1996 revenues: £ 14.5 billion (1995: £ 13.8 billion, 1993: £ 13.2 billion)
- * Number of employees: 130 700 (1993: 170 000)
- * BT was privatized in December 1984 and the British state now owns 23%. BT has more stockholders than any other company in the world
- * In 1995, BT spent more than £ 2 billion on modernising and expanding its networks and supporting systems

Cable & Wireless (C&W)

Country of origin: Great Britain

Some basic facts:

- * Founded in 1929 as a private company, it was nationalized in 1946. In 1981 the company was privatized once again
- * Hong Kong has been a core business and was in 1993 responsible for 43% of revenues and 65% of the trading profit. Hongkong Telecom's international telecom traffic rose by 15%, while traffic between Hong Kong and South China increased by 35%. After 1997, HongKong will be governed by China
- * C&W operates 15 mobile communications companies in the world, and had agreements for six additional companies to start during 1994
- * A 25 year license, starting in 1984, gave Mercury Communications Ltd., C&W's public network operator in Great Britain, the same status as BT. C&W operates 4 800 kms of fiber optic cable and an additional 2 000 kms of digital microwave links
- * "The Global Digital Highway," a digital network based on fiber optic cable, connecting the world's economic and financial centers, is a core activity in the company's strategy
- * Asia and Oceania are the most important markets, the Caribbean and the Middle East also have high priority
- * Many subsidiaries and well-developed cooperative agreements are part of the C&W strategy as well. These exist in Hong Kong, USA, Japan, Bahrain, the Philippines, Vanuatu, West Indies, Sweden (Tele2), Eastern Europe and China
- * US operations occur via an alliance with US Sprint
- * C&W owns 39.9% of the Swedish operator Tele2 — see Tele2 AB — while the Kinnevik group owns 60.1%

The company in numbers:

- * 1996 revenues: £ 5.5 billion (1995: £ 5.1 billion; 1992: £ 3.2 billion)
- * Number of employees: 39 636 (1992: 38 835)
- * In 1996, C&W reported losses at its One 2 One venture with Mercury of £ 66 million; at Vebacom, Germany, of £ 20 million; a break even for its Australian Optus venture; and a profit of £ 2 million at Swedish Tele2 (in 1995, Tele2 reported losses of £ 3 million)
- * C&W have operations in over 50 countries, with concentration in the former British empire and the core business in Hong Kong

Cable & Wireless Flightnet Limited

Country of origin: Great Britain

Some basic facts:

- * C&W Flightnet Ltd. is a subsidiary of C&W — see above — offering in-flight telecommunications services
- * The company holds a license to offer TFTS mobile telecommunications services from aircraft in the Swedish market

Comviq GSM AB

Country of origin: Sweden

Some basic facts:

- * Comviq GSM AB provides mobile telephony according to the GSM standard
- * Comviq GSM AB has the ambition to be the cheapest GSM operator in Europe, an objective the company has achieved according to its Internet homepage
- * It offers its subscribers value added and additional services, such as directory service, secretarial services, informational services, and limited time calling
- * Comvik has signed roaming agreements with Denmark, Finland and Germany
- * The company was established in 1989
- * The firm is owned by Kinnevik — see Tele2AB
- * Comviq GSM has offices in Malmö, Jönköping, Göteborg, Karlskoga, Västerås, Stockholm, Borlänge and Sundsvall, and its headoffice in Stockholm

The company in numbers:

- * 1995 revenue: 1.088 billion SEK
- * Number of employees: 350

Deutsche Telekom AG

Country of origin: Germany

Some basic facts:

- * Deutsche Telekom increased its revenues from 1989 to 1995 by 73%
- * Deutsche Bundespost was separated into three business areas on January 1, 1990: Postdienst, Postbank, and Telekom.
- * By the end of 1995, the company represented an investment of DM 120 billion in infrastructure, systems, and service provision
- * Deutsche Telekom has gone from a state monopoly to a privately held, competitive international operator, concentrating on being the leading full service provider in Germany, and at the same time developing new markets such as multimedia, and securing a healthy growth internationally
- * International growth is the particular task of Global One, an alliance Deutsche Telekom has formed with France Télécom and Sprint
- * Global One obtained EU approval in July 1996
- * On January 1 1995, Deutsche Telekom became a publicly held corporation
- * Deutsche Telekom supplies all types of telecommunications and related services — fax, teletex, interactive videotex, cable TV, personal paging services, land mobile radio, video conferences, electronic mail, etc.
- * Deutsche Telekom is Europe's largest telecom operator/supplier. Some numbers:

Service	1990	1991	1992	1993	1994	1995
Telephone lines						
- analog and digital (in millions)	31.9	33.6	35.4	37.0	38.8	40.4
Telephone calls						
- national (in billions)	35.4	41.0	44.6	49.2	51.0	52.5
- international (in billions)	796.7	921.8	1011.6	1179.7	1384.0	1464.8
ISDN						
- basic access ('000)	14.5	595.1	138.8	281.3	509.2	924.7
- primary rate access (('000)	1.8	5.6	11.3	18.7	27.6	36.9
- channels ('000)	84.1	285.8	616.8	1122.9	1845.3	2956.4
Mobile communications						
- C network ('000)	274	533	772	794	724	648
- D1 network ('000)	—	—	69	481	887	1482
- Cityruf paging (('000)	65	132	207	277	336	342
Inmarsat users	—	0.8	1.1	1.5	2.3	3
CATV						
- Households connected (in millions)	8.1	9.9	11.8	13.5	14.6	15.8
- Households passed (in millions)	16.0	17.7	19.6	21.5	23.2	24.2
Longdistance network						
- Copper cables (('000 km)	193.3	197.4	148.2	148.2	148.3	147.0
- Optical fiber cables (('000 km)	30.9	42.1	57.1	68.4	81.1	86.0
- Broadband cables (('000 km)	279.5	327.0	352.0	372.2	387.4	402.0

Source: Deutsche Telekom

The company in numbers:

* 1995 revenues: DM 66 billion = equivalent to US\$ 46.1 billion (1992: DM 53.9 billion; 1993: DM 60.1 billion; 1994: DM 63.8 billion)

* Number of employees: 1995: 220 000 (1994: 231 000; 1993: 234 000; objective for 2000: 170 000)

Dotcom Data & Tele Communication AB — Enator Dotcom AB

Country of origin: Sweden

Some basic facts:

- * Dotcom was founded in April 1990 by a group of specialists — 230 persons — on corporate switching, all former employees of Ericsson Sweden AB, which merged with Televerket in 1989
- * Dotcom offers its users data and telecommunications services, such as LANs and WANs, switching, and multimedia services
- * In 1994, Dotcom obtained a telecommunications operating license from PTS
- * Dotcom has merged with the ICT consulting group Enator, and is now operating under the name of Enator Dotcom AB
- * Enator Dotcom is based in Linköping, and has 38 offices all over Sweden. The head office is situated in Kista, north of Stockholm

The company in figures:

- * Number of Dotcom employees in September 1996: 500
- * The parent company, Enator AB, employs 4 800 persons in the Nordic countries and Germany
- * In 1996, total revenues of the Enator Group was SEK 4.5 billion

Europolitan AB — NordicTel Holdings AB

Country of origin: Sweden

Some basic facts:

- * In January 1991, Europolitan obtained its GSM frequencies for mobile telecommunications from PTS. The Europolitan network was inaugurated on September 1, 1992
- * Europolitan is owned by NordicTel Holdings AB, see below, in turn owned by the American mobile telecommunications operator AirTouch Communications (51%) and British Vodafone (19.5%). 29.5% of the shares are held privately
- * Europolitan is offering its clients quality, and the firm was the first GSM operator to obtain ISO-9001 certification for the construction and management of mobile telecommunications networks
- * Europolitan has a license to construct a DCS-1800 network in Sweden
- * The firm has a sister organisation called Europolitan Stores, which is running 18 speciality stores for mobile communications in Sweden
- * Europolitan has its head office in Karlskrona, in southern Sweden

The company in figures:

- * Revenues in 1995: 752 million SEK (preliminary); by September 30, 1996, the company reported 9 months revenues of 995 million SEK as compared to 531 million SEK for the same period in 1995. 1996 was the first year the company could report a positive net result
- * Number of employees by the end of 1996: 600
- * On September 30, 1996, Europolitan had 241 000 subscribers
- * The Europolitan GSM network reaches 96% of the Swedish inhabitants

Finnet Group

Country of origin: Finland

Some basic facts:

- * Finnet Group belongs to what is called the private Telephone Companies Group in Finland, i.e. telecommunications companies not belonging to the state owned Telecom Finland
- * The private Telephone Companies have formed several joint ventures to manage nationwide functions — Kaukoverkko Ysi Ltd. for long-distance calls, Finnet International Ltd. for international calls, and Radiolinja Ltd. for mobile telephony

The company in numbers:

- * 1995 revenues: US\$ 1.2 billion
- * Number of employees: 8 657
- * Number of mainlines: 2 018 716
- * Number of mobile subscribers: 133 807

France Télécom

Country of origin: France

Some basic facts:

- * France Télécom is the world's fourth-largest telecommunications carrier
- * The company provides local and long-distance telephony services, and also data, wireless, on-line, Internet, cable-TV, and value-added services
- * Through its subsidiary TDF, France Télécom is a leading European television and radio broadcaster
- * France Télécom was the first public telecom operator to launch ISDN services. Today, there are 1.27 million ISDN B channels in operation
- * The Transpac subsidiary operates a data network with 128 000 access points in Europe. In 1995, there were more than 200 Internet access points connected to the Transpac network
- * France Télécom's on-line information service for private users, Minitel, had more than six million Minitel terminals in France by 1992. In early 1997, there were more than 25 000 services and more than 14 million users. However, the number of terminals does not grow as fast
- * An on-line package called Wanadoo offers the 25 000 Minitel-services as well as access to the Internet
- * The GSM cellular network is called Itineris, and had 860 000 subscribers as of May 1996
- * France Télécom owns and operates the Telecom 1 and Telecom 2 satellites
- * France's trunk network is 100% digital: All lines are connected to fully electronic digital switches
- * France Télécom became public in January 1991, since then, France Télécom has been governed by the on-again/off-again privatisation plans of the French government, with no definite decisions made as yet
- * In February 1996, France Télécom with several collaborators, was selected by STATTEL, the Swedish state telecommunications procurement organisation, as a main provider of telecommunications services for all Swedish state agencies and municipalities. The contract was worth 12 billion SEK (US\$ 1.8 billion), and covers a period of five years

The company in numbers:

- * 1995 revenues: US\$ 29.6 billion (1992: Ffr 122 billion; 1994: Ffr 154.6 billion = US\$ 25.7 billion)
- * Number of employees: 167 660 (1992: 153 300)
- * Number of mainlines: 32 400 000
- * Number of mobile subscribers: 996 000
- * Prepaid calling cards sold: 112 million
- * In 1992, 1.8 billion Ffr were spent on R&D at the Centre National d'Etudes des Télécommunications (CNET)

FT Nordphone AB

Countries of origin: Sweden and France

- * FT Nordphone AB is a company created for the Swedish market by France Télécom. It was FT Nordphone AB that won the STATTEL agreement in close cooperation with Global One, the strategic alliance formed in 1996 between France Télécom, Deutsche Telekom, and Sprint. See each of these for further information

FTNS Nordic AB — Global One

Some facts:

- * FTNS AB is short for France Télécom Network Services, which is in reality an operating arm of Global One — see Global One
- * FTNS was founded in 1992. Today, the company is called either FT Nordphone AB or Global One

Global One

Countries of origin: France, Germany, and USA

Some basic facts:

- * Global One is one of the new worldwide consortia, being formed in order to offer global telecommunications services
- * Global One started its operations in 1996
- * The consortium has 1 200 switching centers in 60 countries
- * DT's and FT's joint venture Altas, including eunetcom, is now part of Global One
- * By January 1, 1998, Deutsche Telekom's and France Télécom's data networks will be integrated into Global One
- * According to Global One, it is "the new telecommunications operator, owned by three of the largest and most innovative operators in the world — Deutsche Telekom, France Télécom, and American Sprint, having merged their international businesses"
- * Global One has existed in Sweden since 1992, then as France Télécom Network Services — see FTNS Nordic AB
- * In 1996, Global One — see France Télécom — won part of the STATTEL contract, providing Swedish public authorities and municipalities with up-to-date telecommunications
- * Global One has offices in a number of countries, the idea being of offering its customers one point of contact for any needs of global communications

The company in numbers:

- * 1997 revenues (estimates) globally: US\$ 800 million; in Sweden: 200 million SEK
- * Number of employees globally: 2 900 persons in 1 200 offices; in Sweden 130

KDD, Kokusai Denshin Denwa Co., Ltd.

Country of origin: Japan

Some basic facts:

- * KDD is an international telecom operator, with Japan as a base, which offers:
 - International telephone services
 - ISDN services to 13 countries, including G4-fax, video conferencing, transmission of data and images
 - Leased lines
 - International TV transmission via satellite
 - Owns and operates a global network consisting of satellites and undersea cables of various types
- * KDD has a strong focus on developing advanced telecommunications services which can be paid for with many major credit cards
- * The KDD group has 33 subsidiaries with operations in Europe, USA, Africa, Asia, Australia and Latin America
- * China and the USA have shown strong growth, and KDD has a number of cooperative agreements as well as R&D projects in progress in these countries
- * KDD is cooperating with Unisource, a strategic alliance between Telia and the Dutch and Swiss PTT's

The company in numbers:

- * 1995 revenues: ¥247.9 billion = US\$ 3.05 billion (1994: ¥246.4 billion; 1993: ¥ 240.1 billion; 1992: ¥ 244.5 billion; forecast for fiscal year 1996 (April 1, 1996—March 31, 1997: ¥ 334 billion)
- * Number of employees: 5 614 (March 31, 1992: 6 004)
- * KDD was founded in 1953, but has its roots in the international telecom traffic going back to 1871.

Koninklijke PTT Telecom — KPN

Country of origin: Netherlands

Some basic facts:

- * KPN was partially privatised in 1994, the Dutch state having been its sole owner until then
- * KPN is one of the Unisource partners, together with Spanish Telefónica, Swedish Telia, and Swiss Telecom — see Unisource. In April 1997, Telefónica announced that it is leaving Unisource
- * KPN has made significant investments in the Czech, Hungarian, Ukrainian, and Indonesian telecommunciations markets

The company in numbers:

- * 1995 revenues: US\$ 8.5 billion
- * Number of employees: 32 288
- * Number of mainlines: 8 124 000
- * Number of mobile subscribers: 513 000

Mannesmann Mobilfunk

Country of origin: Germany

The company in figures:

- * 1995 revenues: US\$ 1.89 billion
- * Number of employees: 3 556
- * Number of mobile subscribers: 1 450 000

MCI Telecommunications Corporation

Country of origin: USA

Some basic facts:

- * MCI was founded in 1968. In 1969, it was the first company to receive permission from the FCC, the US regulatory authority, to compete with AT&T in the longdistance market
- * In August 1990, MCI purchased MCI Telecom USA, the fourth largest longdistance operator
- * The purchase of Overseas Telecommunications, Inc. (OTI) in September 1990 gave access to 24 communications satellites and the development of satellite communications
- * In 1994, BT bought 20% of the voting interest of MCI
- * MCI recently paid US\$ 1 billion for the acquisition of the Canadian software company, SHL Systemhouse
- * The firm has invested in Australia's News Corporation, and it has an alliance with Microsoft
- * MCI offers its customers a large assortment of telecom services such as domestic and international longdistance calls, telephones with telephone cards, special "non-peak" charges, special services for large users of longdistance traffic, 071 (calling-party pays) numbers for domestic and international calls, electronic mail, fax, telex, etc.
- * MCI International has 80 offices around the world, including one in Sweden
- * MCI's network was digitalised in 1991, and has a total length of 78 800 kms
- * A transatlantic fiber cable, TAT-X, in agreement with BT, was finished during 1993
- * "MCI's success in winning over 25% of the US long distance market is legendary" according to "The TeleGeography 100" of 1996. By 2000, the same source sees the company generating half of its revenue from local services, including wireless telephone, systems integration, Internet access, and entertainment — it is already selling pop music over the phone!
- * Swedish users are being offered access to the MCI global network Concert via Telenordia

The company in numbers:

- * 1995 revenues: US\$ 15.3 billion (1992: US\$ 10.5 billion; 1993: US\$ 11.9 billion; 1994: US\$ 13.3 billion)
- * Number of employees: 50 367 (1991: 27 857; 1992: 30 964; 1993: 36 235; 1994: 40 667)

MFS Communications AB

Country of origin: USA; subsidiary of MFS Communications Company, Inc.

Some basic facts:

- * MFS was formed with 20 employees in 1987
- * The company covers three business segments:
 - telecommunications services
 - Internet services
 - network systems integration services
- * MFS became a public company in 1993
- * MFS operates in 52 metropolitan areas, 45 of which are in the US, and 7 are international financial centres

The company in numbers:

- * 1995 revenue: US\$ 583.2 million
- * Number of employees: 5 000
- * 745 Internet points of presence, 451 of these outside the US

Netcom Systems AB — see Comviq and Tele2

Country of origin: Sweden

Some basic facts:

- * Netcom Systems is the umbrella company of the telecommunications activities within the Kinnevik Group. It has interests in the following companies:
 - Comviq GSM AB, a mobile telecommunications operator; 100% of the shares
 - Tele2 AB, a national and international telecommunications operator; 60.1% of the shares, Cable & Wireless holding 39.9%
 - NetCom GSM A/S, mobile telecommunications operator in Norway; 32% of the shares; Orkla A/S holding 16%; Ameritech International 25%, Singapore Telecom 25%, and others 2%
 - Kabelvision KB, a cable TV provider; 38.3% of the shares, United Communications International holding 26.5%, Time Warner 20.7%, Bonniersfären 13.8%, Formator 0.5%, and others 0.2% — for further details, see Comviq, and Tele2
- * In 1979, Kinnevik bought the first mobile operator in Sweden, a company called Comvik, which marked the take-off of the NetCom Systems conglomerate
- * Kabelvision is collaborating with STOKAB, a Stockholm-based provider of fiberoptical infrastructure in order to improve service to cable-TV subscribers (AB STOKAB holds a license for fixed telecommunications operations)

The company in figures:

- * 1995 revenues: SEK 1 995 million =US\$ 280 million (1994: SEK 941 million)
- * Number of employees: 567
- * Number of mobile subscribers: 665 000
- * By the end of 1995, 458 000 Swedish households were connected to the cable networks of Kabelvision

NordicTel Holdings AB — see Europolitan

Country of origin: Sweden

Some basic facts:

- * NordicTel Holdings AB is the mother company of Europolitan and Europolitan Stores. See Europolitan above;
- * Europolitan is operating the Europolitan GSM mobile network
- * NordicTel was founded in 1990
- * The company obtained a license as a GSM mobile telecommunications operator in Sweden on March 4, 1991 (in the 900 MHz frequency area)
- * British Vodafone and American AirTouch Communications became partners and owners in 1993. AirTouch owns 51% of the shares
- * NordicTel was introduced on the Stockholm Stock Exchange on May 27, 1994
- * Together with France Télécom, Europolitan won the STATT contract in February 1996 — see France Télécom
- * The company has its headquarters in Karlskrona

The company in numbers:

- * Revenues in 1995: SEK 752 million (1994: SEK 278 million)
- * In 1992–93, the company invested some SEK 500 million in constructing Europolitan's GSM network. In 1995, investments were SEK 414 million, and in 1994 SEK 501million. The acumulated investments were SEK 1 600 million
- * Number of employees: 398 (1994: 273; 1993: 150)
- * Number of subscribers: 148 000

Nordiska Tele8 AB

Country of origin: Sweden

Some basic facts:

- * Nordiska Tele8 was established in 1992
- * Nordiska Tele8 AB is owned to 51% by FaCilicom International, LLC, USA
- * The company has its headoffice in Malmö, in southern Sweden
- * Tele8 Kontakt AB holds an operating license for mobile services (DCS 1800) in Sweden
- * FaciliCom, holding 51% of the shares, is a member of the American Armstrong-group, specialising in telecommunications and cable-TV

The company in numbers:

- * Revenues 1995: SEK 11.4 million (1994: SEK 282 758)
- * Investments 1995: SEK 26.1 million (1994: SEK 8.2 million)
- * Number of employees: 16

NTT - Nippon Telegraph and Telephone

Country of origin: Japan

Some basic facts:

- * Nippon Telegraph and Telephone Corporation and its subsidiaries are the largest nationwide suppliers of telecommunications services in Japan, offering telephone, cellular telephone, telegraph, leased circuit, data communication facilities, digital data exchange, pocket pagers, and other services to its customers;
- * Eleven regional divisions are responsible for telecommunications services within Japan
- * In 1985, NTT International Operations NTTI, was founded to assist existing users outside of Japan's borders
- * Privatised by the end of 1984, NTT is currently owned to 74.5% by the Japanese state, while 90% of the common stock is owned by private persons. Non-Japanese nationals are now able to hold NTT stock
- * Japan's telecom authority, Minister of Posts and Telecommunications (MPT), keeps NTT's activities in check, and prohibits international telephony operations
- * NTT is the world's second largest telecom operator. Some numbers from 1992:
 - 55.8 million telephone subscribers; **in 1995, 60 million**
 - 846 000 mobile telephone subscribers
 - 387.1 million telephone cards sold
 - 973 000 leased circuit lines
 - 3 859 000 pocket pager subscribers
 - 482 000 fax network subscribers
 - 90% of Japan's population has access to ISDN
- * Three laboratory groups and 13 laboratories make up the research and development department of NTT

The company in numbers:

- * 1995 revenues: ¥ 7 044 billion = US\$ 84.05 billion according to the OECD, US\$ 79.1 billion according to NTT (1992: ¥ 6 398.4 billion; 1993: ¥ 6 504 billion; 1994: ¥ 6 687 billion)
- * Number of employees in 1995: 235 000 (1994: 248 000; 1993: 249 000; 1992: 257 000)
- * R&D expenditure in 1992 were ¥ 286.9 billion.

Nynex Corporation

Country of origin: USA

Some basic facts:

- * NYNEX Corporation is a global communications and media company providing a full range of services in the northeastern US and selected markets around the world
- * NYNEX describes itself as a leader in telecommunications, wireless communications, cable television, directory publishing, video entertainment, and information services
- * NYNEX has approximately 15 million subscribers in New York and the states of New England
- * NYNEX is collaborating with Bell Atlantic in Bell Atlantic NYNEX Mobile in order to provide a full range of wireless local, long distance, data, and paging communications, offering 3.4 million customers these mobile services (Dec. 1995)
- * NYNEX is the second largest cable network owner in Great Britain
- * FLAG, Fiber-optic Link Around the Globe, is a giant submarine cable, the world's longest, which will link several Middle Eastern and Asian countries on its path from the UK to Japan. NYNEX is the prime mover of this project

The company in numbers:

- * 1995 revenues: US\$ 13.4 billion (1992: US\$ 13.15 billion)
- * Number of employees: 65 800 (1992: 81 900)
- * Number of mainlines: 17 138 000
- * Number of mobile subscribers: 3 400 000

Pacific Telesis

Country of origin: USA

Some basic facts:

- * Pacific Telesis, normally called PacTel, covers the states of California and Nevada and serves 11 million telecom users
- * The company offers its customers the following services:
 - voice services, for instance local toll telephone services
 - data services such as fast packet switching
 - Internet access
 - network management
 - video services via wireless, digital TV networks of more than 100 channels offer video-on-demand and interactive video applications
 - mobile communications via PCS, personal communications services
- * Pacific Telesis is running a California Research and Education Network, a high-speed data network for the development of interactive and multimedia applications
- * The Pacific Telesis "Education First" program equips the Californian schools with online access
- * In 1994, through divestiture, PacTel had to spin off its cellular telephone business, now known as AirTouch — see above

The company in numbers:

- * 1995 revenues: US\$ 9.04 billion (1992: US\$ 9.94 billion)
- * Number of employees: 48 889 (1992: 61 346)
- * PacTel has 11 subsidiaries throughout the world

RSLCOM, former Cyberlink Sweden AB

Country of origin: USA

Some basic facts:

- * Cyberlink Sweden AB is owned by the American firm Cyberlink Europe, based in the UK, in turn owned by RSLCOM
- * RSLCOM Sweden AB, the Swedish subsidiary was introduced in October 1994 as Cyberlink Sweden AB
- * In May 1995, Cyberlink was granted an operating license by PTS
- * In Sweden, the company is operating as Cyberlink, while its name is RSLCOM in other parts of the world
- * RSLCOM has as its business idea to offer global voice, fax, data communication, and Internet services to businesses as well as to private subscribers at competitive prices
- * In May 1996, RSLCOM purchased Sprint Corporation's international voice-transmission businesses in France and Germany
- * RSLCOM has the ambition to become the largest independent telecommunications operator in Europe within 10 years. Today, the company has subsidiaries in Finland, Germany, England, and France, outside the US
- * The global strategy is to have a network around the world
- * RSLCOM is a privately held company, and does not reveal its financial situation

The company in numbers:

- * RSLCOM Sweden AB has some 20 employees
- * Global annual revenues: US\$ 130 million (est.)

SBC Communications Inc. — formerly South Western Bell

Country of origin: USA

Some basic facts:

- * South Western Bell's original territory covers Arkansas, Kansas, Missouri, Oklahoma, and Texas, with a total of 9.7 million subscribers
- * SBC is offering national and international services in the following areas:
 - telephone services
 - wireless products and services
 - messaging services
 - interactive video services
 - cable TV services
 - advanced technology resources
 - international operations
- * SBC is one of the most successful companies on Wall Street, having achieved a total return to its shareholders of 985% over the past 12 years
- * SBC is the second largest wireless communications company in the world, serving more than 3.7 million subscribers
- * In Mexico, SBC owns 10% in Telmex, the largest long distance carrier in the country
- * In Israel, South Western Bell has 50% of the cable TV company Golden Hannels Ltd., which reached 279 000 households in 1994
- * SBC is a partner of several strategic alliances

The company in numbers:

- * 1995 revenues: US\$ 12.67 billion (1992 revenues: US\$ 10.02 billion)
- * Number of employees: 59 300 (1992: 59 500)
- * Mainlines: 14 223 000
- * Mobile subscribers: 3 659 500

Singapore Telecom — Singapore Telecom International Svenska AB

Country of origin: Singapore

Some basic facts:

- * Singapore Telecom has through its international branch, Singapore Telecom International made investments in 15 countries since 1988
- * The company has formed several strategic alliances and is operating services in telecommunications, cable television, and related areas
- * Singapore Telecom is involved in China, Norway, Thailand, and Vietnam, among other countries
- * Its Swedish subsidiary, Singapore Telecom International Svenska AB was formed in 1992, concentrating on providing cable TV services via StjärnTV
- * The Swedish subsidiary holds a license to operate a telecommunications network in Sweden
- * Singapore Telecom has ambitions to become the most important telecoms investor and operator in China

The company in numbers:

- * 1995/96 revenues: US\$ 3.999 billion (1994/95: US\$ 3.5 billion)

Sirti S.p.A.

Country of origin: Italy

Some basic facts:

- * This Milan based company is part of the STET holding, one of several state owned holding companies in the telecommunications area in Italy — IRI is the largest one
- * Sirti's main business is network installation and maintenance, Telecom Italia being the main customer
- * According to its advertising, Sirti is bringing telecommunications to the world from Italy
- * Sirti does not have an operating license in Italy, Telecom Italia being the only company to be a fully fledged operator
- * In 1998, the Italian market is supposed to be free for all

Sprint Corporation

Country of origin: USA

Some basic facts:

- * Sprint's long distance division provides voice, video, and data services to nearly 8 million users
- * Sprint operates the only 100% digital, fiber-optic network in the US
- * Sprint North Supply is one of USA's largest wholesale distributors of voice, data, and teleconferencing equipment, and security and alarm systems. Another subsidiary publishes 325 telephone directories, having an annual circulation of more than 17 million in 20 states of the USA
- * Sprint is, together with Deutsche Telekom and France Télécom, one of the partners of the consortium Global One — see above
- * Sprint has formed a partnership with three of USA's largest cable companies: Tele-Communications Inc., Comcast Corporation, and Cox Communications, in order to provide personal communications service, PCS, to more than 182 million Americans
- * In 1994, the company spun off its cellular and wireless division as a result of the new US telecommunications legislation
- * On February 26, 1992, United Telecommunications, Inc. changed its name to Sprint. United Telecommunications was founded in 1899 in Kansas City

The company in numbers:

- * 1995 revenues: US\$ 12.765 billion (1994: US\$ 11.98 billion; 1993: US\$ 10.91; 1992: US\$ 10.1 billion)
- * Number of employees: 48 268 (1992: 43 400)
- * Sprint provides local telephone service to 6.7 million customers in the US

STET, Società Finanziaria Per Azioni

Country of origin: Italy

Some basic facts:

- * STET is the major holding company for telecommunications activities in Italy, majority-owned by the Italian state (53%)
- * STET is the majority-owner of Telecom Italy, the so far only holder of an operating license in Italy
- * STET has made major investments in Chile, Argentina, and Bolivia, and is one of the major operators in these countries
- * STET has formed strategic alliances with Siemens and IBM

Some numbers:

- * 1995 revenues: Lire 37 000 billion; (1994: Lire 33 752 billion; 1993: Lire 31 378 billion)

Swiss Telecom PTT

Country of origin: Switzerland

Some basic facts:

- * In spite of Switzerland not being a member of the European Union, the country has agreed to join the liberalisation of the European telecommunications market by January 1, 1998
- * Swiss Telecom bought a stake in the Czech carrier SPT in 1995
- * In 1993, Swiss Telecom formed the Unisource consortium together with Swedish Telia and Dutch KPN — see Unisource

The company in numbers:

- * 1995 revenues: Sfr 10.507 billion (= US\$ 8.9 billion; 1994: SFr 9.748 billion; 1993: SFr 9.445 billion)
- * Number of employees: 20 143
- * Number of mainlines: 4 318 000
- * Number of mobile subscribers: 447 167

Tele 1 Europe AB

- * This start-up company has its headoffice in Stockholm, Sweden
- * Tele1 holds an operating license for telephony in Sweden

Tele2 AB

Country of origin: Sweden

Some basic facts:

- * Tele2 is a supplier of international and domestic telecommunications with Sweden as a base
- * The company is owned by Swedish NetCom Systems AB (60.1%), which belongs to the Kinnevik industrial group, specialising in farming, packaging and packaging materials, TV & media, telecommunications, and financial operations, and by Cable & Wireless (39.9%)
- * Tele2 has been present in the Swedish market since December 1985, having Comvik Skyport as its original base. In September 1990, the company was registered as Tele2 AB
- * The NetCom group operates in the markets of GSM (via Comviq), Internet, fixed-line telecommunications, and cable-TV
- * Tele2 is operating SwipNet, which offers Internet access to its users. It has a cooperative agreement with SNUS (Swedish Network User Society) for the use of SwipNet for external data transmission, file transmission, message handling, as well as data communication between UNIX computers and local networks
- * See Comviq and NetCom above

The company in numbers:

- * Revenues in 1995: SEK 937 million
- * Number of Employees 1991: 70

Telecom Eireann

Country of origin: Ireland

The company in numbers:

- * 1995 revenues: US\$ 1.7 billion
- * Number of employees: 12 025
- * Number of mainlines: 1 320 000
- * Number of mobile subscribers: 158 000

Telecom Finland

Country of origin: Finland

Some basic facts:

- * The Finnish telecommunications market become open to competition in July 1994. t
The major telecommunications operators in Finland are the private Telephone Companies group — see Finnet Group — and Telecom Finland Ltd. Telecom Finland is a limited company, owned to 100% by the Finnish state
- * Telecom Finland is presently active in the following countries as well as in other parts of western Europe:
 - Estonia, Latvia, Lithuania
 - Sweden
 - Belgium
 - The Netherlands
 - Russia
- * Telecom Finland has 55% of the total Finnish telecommunications market
- * Telecom Finland holds operating licenses for GSM networks in Estonia, Latvia, Turkey, Hungary, and the St Petersburg area of Russia
- * In Sweden, Telecom Finland has obtained a telephony operating license
- * Telecom Finland and Telia have started large-scale fixed network construction in collaboration with Estonian Telecom
- * Telecom Finland offers the full range of mobile communications services, basic telephone services, data and voice services for corporations, business services such as fax, conference, e-mail, Internet, and the TeleSampo market place, and advanced data networking via DataNet

The company in figures:

- * 1995 revenues: FIM 5.7 billion (= US\$ 1.3 billion)
- * Number of employees: 7 067
- * Number of mainlines: 786 700
- * Number of mobile subscribers: 905 319

Telecom Italia

Country of origin: Italy

Some basic facts:

- * Telecom Italia is owned by the Italian state via the holding company STET — see STET
- * So far, Telecom Italia is the only company, holding an operating license in the country

The company in figures:

- * 1995 revenues: US\$ 18.5 billion
- * Number of employees: 90 222
- * Number of mainlines: 24 854 000

Tele Danmark International

Country of origin: Denmark

Some basic facts:

- * In 1994, Tele Danmark was privatised and is now owned to 51% by the Danish state. The remaining shares are held by approximately 60 000 private and institutional investors from all over the world. The company's shares are quoted on the Copenhagen Stock Exchange and the New York Stock Exchange
- * The Danish telecommunications market became fully liberalised in 1996
- * In December 1995, a consortium consisting of Tele Danmark, Ameritech, and Singapore Telecom became the strategic partner of Belgacom
- * Tele Danmark belongs to two other consortia having obtained operating licenses for GSM systems in Poland and Lithuania
- * In Sweden, Tele Danmark has formed Telenordia in partnership with BT and Telenor in order to offer domestic and international telecommunications services, primarily to business customers

The company in figures:

- * 1995 net revenues: DKK 18.846 billion (= US\$ 3.4 billion; 1994: DKK 17.878 billion, 1993: DKK 16.293 billion; 1992: DKK 15.653 billion; 1991: DKK 15.251 billion)
- * Number of employees: 16 476
- * Number of mainlines: 3 203 000
- * Number of mobile subscribers: 550 000

Telefónica de España

Country of origin: Spain

Some basic facts:

- * Telefónica is a de facto monopoly, and Spain is still, largely speaking, a closed market in telecommunications, in spite of its scrambling to catch up with 1998 liberalisation
- * Telefónica was founded in 1924 by ITT. In 1945, the Spanish government purchased a portion of the stock and gave Telefónica a monopoly status for domestic and international telephony services
- * By the end of 1991, the Kingdom of Spain owned 33.69% of the stock in Telefónica, and still is the largest single owner. Other shareholders own no more than five percent
- * The Spanish telecom network is the fifth largest in Europe with over 15 million installed lines (13.5 million in June 1992)
- * In preparation of the 1992 World Exhibition in Sevilla, and the Olympic Games in Barcelona, ESP 130 billion was invested to modernise the telecom network
- * Telefónica is offering its customers a number of services, like Internet-based "enREDados", a sort of cyberspace shop to make users learn more about communications; "TeleSpac!o", interactive shops where users can fill in their orders and have whatever goods they have asked for delivered at home
- * Telefónica is an avid user of Internet and websites — InfoVía — for marketing
- * Telefónica has been successful in its investments in Latin America. The company is involved in several joint ventures in for instance Chile, Peru, Venezuela, and Argentina
- * On January 15, 1997, Telefónica signed an agreement to buy 35% of Brazilian Companhia Riograndense de Telecomunicações (CRT)
- * Telefónica was a member of the global consortium Unisource together with Telia, Swiss Telecom, and KPN until April 1997, when the company announced that it was no longer a partner — see Unisource, Telia, Swiss Telecom, and KPN

The company in numbers:

- * 1995 revenues: ESP 1 740.55 billion (= US\$ 13.95 billion; 1994: ESP 1 578.85 billion; 1992: ESP 1 154 billion)
- * Number of employees: 69 570 (1991: 74 437)
- * Number of mainlines: 15 095 377
- * Number of mobile subscribers: 928 955

Telenor

Country of origin: Norway

Some basic facts:

- * Telenor is the state-owned Norwegian telecommunications monopoly
- * It is the national distributor for Concert, the BT/MCI global telecommunications network
- * Telenor is concentrating its foreign investments on mobile and satellite projects in Europe
- * Telenor is a partner of the Swedish telecommunications company Telenordia together with BT and Tele Danmark

The company in figures:

- * 1995 revenues: US\$ 3.1 billion
- * Number of employees: 18 480
- * Number of mainlines: 2 431 271
- * Number of mobile subscribers: 748 000

Telenordia —TBT Communication AB

Country of origin: Sweden

Some basic facts:

- * Telenordia was introduced to the Swedish market on May 4, 1995
- * The company is described as "a new Swedish telecoms operator and supplier of advanced voice and data communications services"
- * Telenordia is owned jointly by British BT, Danish Tele Danmark, and Norwegian Telenor
- * Telenordia sees its market as all companies with a need for national and/or international communications solutions. It offers, among other things, a seamless Nordic telecommunications market
- * The Telenordia network is 100% digital
- * Telenordia offers access to Concert, the global network and services of BT and MCI

The company in numbers:

- * Number of employees in 1996: 250 (1995: 150)
- * The company has three offices

Telia AB

(Televerket until July 1, 1993)

Country of origin: Sweden

Some basic facts:

- * The Telia Group is made up of the parent company Telia AB and 27 wholly owned operating subsidiaries but a modern key player in the most liberalised market in Europe
- * On July 1, 1993, Televerket changed its name to Telia AB in order to mark that it was no longer a state owned monopoly
- * During 1992, Televerket was obligated by the Swedish government to pay a one-time sum of SEK 5 billion to the state treasury, as well as to buy out a state loan of SEK 2.2 billion
- * In 1992, Sweden received its first regulatory authority in the National Post and Telecom Agency, PTS, and the previously free Swedish market became regulated
- * In June 1992, Televerket together with Dutch KPN, founded a global consortium called Unisource
- * In December 1992, an agreement was signed, together with Telecom Finland, involving the development of the Estonian telecom network. Telecom Finland and Telia own 49% of The Estonian Telephone Company
- * In January 1993, together with the Swiss PTT Telecom, Unisource signed an agreement of intention that would expand Unisource to a joint-venture among the Dutch, Swiss and Swedish telecom operators. The objective was to be able to compete in the European and the international markets. In 1995, Spanish Telefónica joined the Unisource consortium — see Unisource below — and in April 1997, this company announced that it was no longer a partner of Unisource
- * In 1995, Telia formed two new subsidiaries, Telia A/S in Denmark, and Telia Norge AS in Norway
- * In May 1995, Telia acquired 94% of the shares of Stofa A/S, the second largest cable-TV company of Denmark, serving roughly 500 000 Danish households
- * During 1995, Telia formed a special division for media and information services, Telia TeleRespons
- * Swedtel is the international consulting company of the Telia Group
- * Sweden being the world's most deregulated country when it comes to telecommunications, Telia is fighting competition with beneficial charges to its customers. Thus, Sweden continues to offer its telecommunications users among the lower telephone tariffs in the world. According to the OECD and EURODATA, Sweden has the sixth lowest telephone charges among the OECD countries. Only Norway, UK, Canada, Germany, and Turkey can offer lower charges — see OECD: "*Communications Outlook 1997*"

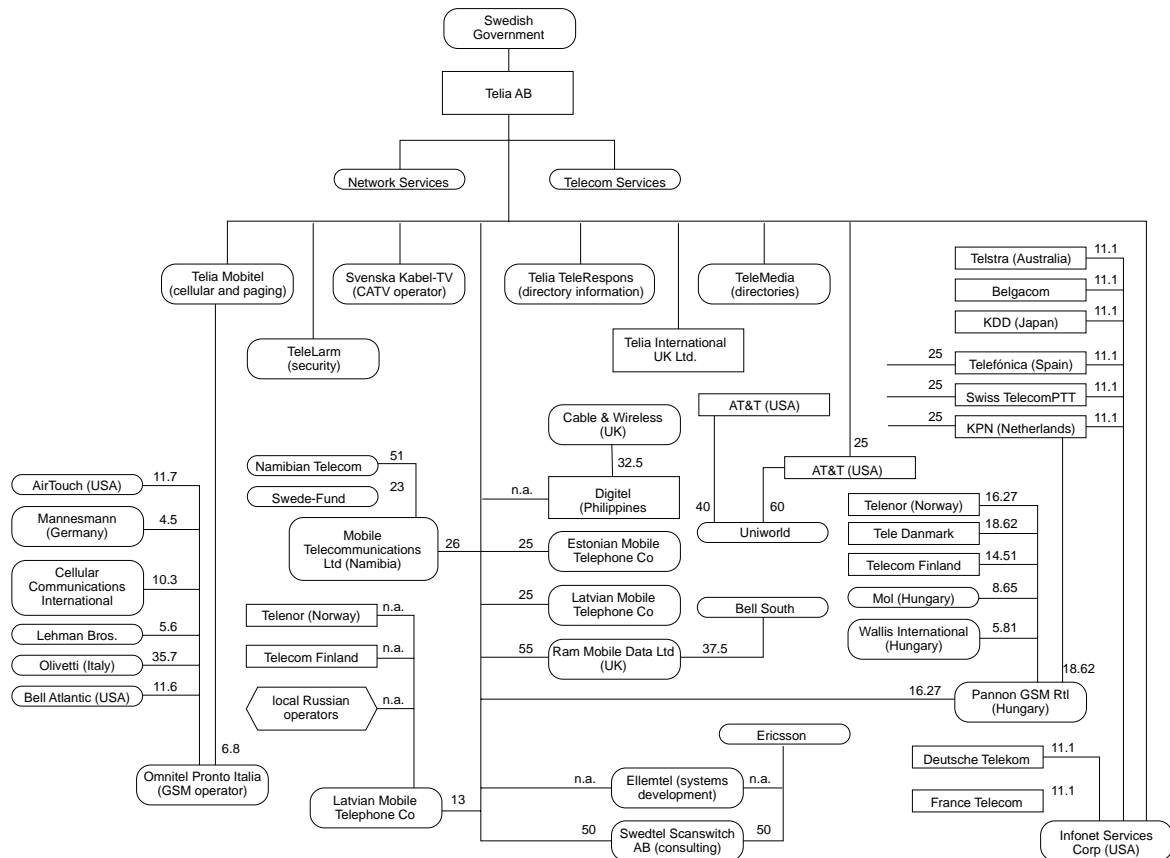


Fig.1 April 1997: The TeleGeography map of the Telia Group as it appears in "The TeleGeography 100, A Graphical Guide to the World's Leading Information Companies". Each company is mapped in a similar way. The map describes the situation as it was by the end of 1995.

Source: The TeleGeography 100, A Graphical Guide to the World's Leading Information Companies, 1996

The company in numbers:

- * 1995 revenues of the Telia Group: SEK 41.06 billion (= US\$ 5.8 billion; 1994: SEK 37.939 billion; 1992: 35 billion SEK)
- * Number of employees: 33 065 (1992: 41 771)
- * Number of mainlines: 6 013 000
- * Number of mobile subscribers: 1 800 000
- * R&D costs reached approximately SEK 1.2 billion, or 3.5% of revenues.
- * By the end of 1996, Telia's fibre optical network covered 40 000 km. 5 000 km is added each year
- * By the end of 1996, 96.1% of the more than 6 million Telia subscribers were connected to AXE switching stations, making so called PLUS-services available, for instance call forwarding, call waiting, three party call, call waiting tone, etc.
- * By the beginning of 1997, Telia had invested SEK 86 billion in a state-of-the-art network for the telecommunications Swedish users

Telstra Corporation, Ltd.

Country of origin: **Australia**

Some basic facts:

- * Telstra is owned by the Australian government, but shares are beginning to be sold to outside investors as off early 1997
- * Telstra is developing a broadband overlay network, FoxTel, in collaboration with News Corp.
- * Telstra has 80% for the Australian long distance market
- * Via Infonet Services Corp., based in USA, Telstra is collaborating with the Unisource consortium

The company in figures:

- * 1995 revenues: US\$ 11.3 billion
- * Number of employees: 76 522
- * Number of mainlines: 9 500 000
- * Number of mobile subscribers: 3 100 000

Unisource

Country of origin: **The Netherlands**

Some basic facts:

- * Unisource describes itself as "the first truly pan-European telecom company, providing telecommunication services to European corporations and individuals at work, on the move, or at home". "One contact, one contract" is the explicit business idea (*according to the Internet homepage*)
- * Unisource is owned by Swedish Telia, Dutch PTT Telecom Netherlands, Swiss Telecom PTT, and Spanish Telefónica
- * Unisource is made up by corporate headquarters in Hoofddorp, Netherlands, and the following subsidiaries:
 - Unisource Business Networks
 - Unisource Satellite Services
 - Unisource Mobile
 - Unisource Card Services
 - Unisource Carrier Services
 - Unisource Information Services
- * Unisource has signed distributor agreements with the following telecom providers:
 - Telia for Sweden, Denmark, Norway, the Baltic states
 - PTT Telecom Netherlands for the Netherlands
 - Swiss Telecom PTT for Switzerland
 - Telefónica for Spain
 - SIRIS for France
 - CNI, Communications Network International, for Germany
 - AT&T for UK
 - Helsinki Telephone Company for Finland
 - Unisource Business Networks Belgium for Belgium
 - Unisource Business Networks Italia SpA for Italy
- * Unisource has close collaboration with AT&T, manifested by the formation of the company AT&T-Unisource Communication Services, having 450 employees, also based in the Netherlands
- * Unisource is one of the partners in the global alliance WorldPartners, owned by American AT&T, Japanese KDD, Singapore Telecom, and Unisource
- * Unisource was founded in 1992
- * In April 1997, Telefónica announced that the company is leaving Unisource

The company in numbers:

- * 1995 revenue: NGL 1.3 billion
- * 1995 investments: NGL 326 million
- * Number of employees: 2 229

US West, Inc.

Country of origin: USA

Some basic facts:

- * US West covers US 14 states and thereby the largest land mass of the seven Regional Bell Operating Companies, providing telecommunications services to 25 million customers
- * US WEST Media Group is a leading media company, operating domestic and international cable television and wireless telecommunications networks, publishing directories, and developing and marketing interactive multimedia services
- * In February, 1996, the US WEST Media Group announced a merger with Continental Cablevision
- * In May 1993, US West and Time Warner Entertainment (1995 revenues: US\$ 17.7 billion) announced an alliance to provide information services, entertainment, and telephone service over the Time Warner cable systems

The company in numbers:

- * 1995 revenues: US\$ 11.7 billion (1994: US\$ 10.95 billion; 1992: US\$ 10.3 billion)
- * **Number of employees: 61 047 (1992: 63 700)**
- * Number of mainlines: 14 847 000

10.4. Selected Suppliers

Alcatel Alsthom Compagnie Générale d'Electricité

Country of origin: France

Some basic facts:

- * The Alcatel Group is a world-wide supplier of high tech systems in telecommunications, electronics, and electro-mechanics
- * Alcatel was founded by the merger of French CGE and American ITT in 1986. The company is 100% owned by French Alcatel Alsthom
- * The Alcatel Group conducts its business through the following sectors:
 - telecommunications
 - cable
 - systems
 - GEC Alsthom, combining energy and transport
 - batteries
- * Alcatel Telecommunications has, in collaboration with its partners, operations in 125 countries, manufacturing digital switches, transmission systems, broadband products, access products, and mobile communications systems
- * In 1991, Alcatel invested ECU 1.8 billion in R&D
- * In July 1991, Alcatel purchased Rockwell International's Network Transmission System Division. This made Alcatel, after AT&T, the second largest supplier in the US
- * In 1994, Alcatel acquired STC Submarine Systems, which made Alcatel the world's leading provider of undersea fiber optic cable systems. Demands are booming
- * The European market has shrunk, but the company has built a strong presence in the Far East, in particular in China, where Alcatel presently shows an annual growth of 30%

The company in numbers:

- * 1995 revenues: Ffr 67.724 billion (= US\$ 13.6 billion)
- * Number of employees: 95 000 (1992: 125 782)
- * Alcatel Telecom answered for 46.5% of the total turnover in 1994

Bosch

Country of origin: Germany

Areas of operation:

- * The company was founded in 1886
- * The Bosch Group is well-known for their electronic automotive systems
- * In 1995, the group restructured and formed Bosch Telecom, including Telenorma and ANT Nachrichtentechnik GmbH
- * Bosch Telecom has three divisions, each one dominated by at least one previously independent company:
 - For public communication, based on ANT Nachrichtentechnik GmbH
 - For private communication, based on Telenorma GmbH and J S Télécom
 - For mobile communication, based on Blaupunkt-Werke GmbH
- * Germany is the Bosch-group's home market. Telenorma GmbH was Germany's second largest telecommunications company after Siemens. It is the third largest in Europe after Alcatel and Siemens
- * Nearly 90% of the company's sales are generated in the home market
- * Bosch has, through purchases of telecommunications companies such as Telenorma Telefonbau, Normalzeit Lehner & Co., ANT Nachrichtentechnik GmbH, Blaupunkt-Werke GmbH and Jeumont Schneider Télécommunication (J S Télécom SA) firmly established itself in the German telecom market as Bosch Telecom

The company in numbers:

- * Revenues in 1995: US\$ 21 billion (1992 revenues: DM 34.4 billion)
- * Number of employees 1992: 169 804
- * Bosch Telecom has 21 000 employees, and annual revenues of DM 5.3 billion

Ericsson

Country of origin: Sweden

Some basic facts:

- * The parent company is called Telefonaktiebolaget LM Ericsson
- * Ericsson is active in more than 100 countries
- * Ericsson has 40% of the global cellular market and is the world leader in digital mobile communications
- * For 1995, the company reported the following figures per division:
 - Radio communications, SEK 56.4 billion (1994: SEK 40.9 billion)
 - Public telecommunications, SEK 27.2 billion (1994: SEK 25.9 billion)
 - Business networks, SEK 14 billion (1994: SEK 13.5 billion)
 - Components, SEK 7.7 billion (1994: SEK 6.3 billion)
 - Microwave systems, SEK 3.7 billion (1994: SEK 2.9 billion)
- * With 60% of revenues, Europe is the largest geographical market, with Sweden representing 13%
- * The USA and Canada generate about the same revenues as Latin America, with 12% and 11% of sales respectively
- * AXE systems are found in 101 countries, both for fixed and mobile networks;
- * Ericsson's mobile telephone systems have over six million users in 48 countries, equivalent to 40% of the world market
- * A number of former Eastern Block countries have signed agreements with Ericsson to supply mobile telephone networks — Slovenia, Romania, Hungary and Poland, to name a few
- * In Japan, Ericsson acts through Ericsson Toshiba Telecommunications Systems K.K.

The company in numbers:

- * Net sales 1995: SEK 98.780 billion (1994: SEK 82.554 billion; 1992 sales: SEK 47 billion)
- * Number of employees: some 90 000 (1992: 66 232)
- * Fully or partly owned subsidiaries in 64 countries
- * In 1992, investments in R&D went up to SEK 7.377 billion, or the equivalent of 16% of net sales

GEC Plessey Telecommunications (GPT)

Country of origin: Great Britain

Some basic facts:

- * The main business area is the manufacture of public and private switches, PABX's, package switches and transmission equipment
- * Manufactures private switching system ISDX and i-SLX
- * More than 40 telecom operators use GPT's pay telephones for coins, credit and charge cards
- * Four major business areas:
 - Telecommunication systems (switches)
 - Transmission
 - Business systems
 - International services

The company in numbers:

- * 1994 revenues: US\$ 1.7 billion
- * Number of employees 1992: 156 000

Italtel spa

Country of origin: Italy

Some basic facts:

- * Italtel spa was formed in January 1996 through the merger of Italtel of the STET group and Siemens Telecomunicazioni, Italian subsidiary of Siemens
- * In 1996, the company forecasts the following percentual distribution of sales per operating sector, forecasting total sales to ITL 3 742 billion:
 - Public switching = 35%
 - Network systems and services = 13%
 - Mobile radio = 26%
 - Transmission and radio = 26%
- * For 1996, export share is forecast to 43%
- * "Old" Italtel had six main business areas:
 - Società Italiana Telecomunicazioni (SIT) - network services
 - Telematica - telecom and computer communications services
 - Sistemi - systems
 - Tecnoelettronica - electronics
 - Tecnomeccanica - mechanics
 - Telesis
- * Italtel has operations in some 40 countries

The company in numbers:

- * 1995 revenues: ITL 3 710 billion (1994: ITL 3 290 billion; 1992 revenues: ITL 2,973 billion)
- * Number of employees by the end of 1996: 16 599 (1992: 16 517)
- * Italtel has worked together with AT&T since 1989, providing Italtel access to Bell Laboratories. The agreement has resulted in a marketing company for AT&T and Italtel's products.

Motorola

Country of origin: USA

Some basic facts:

- * Motorola has two major businesses, both being key parts of the networked economy:
 - computers
 - mobile telephony
- * Operations are divided into three main sectors, and four self-supporting groups:
 - Land Mobile Products Sector with two-way radios and electronic communications systems
 - Semiconductor Products Sector with semiconductors, integrated circuits, and microprocessors as well as microcomputers
 - General Systems Sector includes mobile telephony, land mobile radio, microcomputer boards, and information processing equipment
 - Paging and Telepoint Systems Group
 - Information Systems Group
 - Government Electronics Group
 - Automotive and Industrial Electronics Group
- * Motorola is the second largest producer of microprocessors in the US
- * One of the world's leading suppliers of terminals for wireless services — pagers, cellular telephones
- * Motorola is the prime mover behind the Iridium project, aiming at offering global wireless communications via 66 low earth orbit satellites by 1998
- * In Japan, Motorola owns Nippon Motorola Ltd, established in 1975

The company in numbers:

- * 1995 revenues: US\$ 27.04 billion (1994: US\$ 22.25 billion; 1992: US\$ 13.3 billion)
- * Number of employees: 142 000 (1994: 132 000; 1992: 107 000)
- * Operations in 34 countries
- * Approximately 8% of net sales is invested in R&D, distributed among eight centers for advanced research
- * The Nordic countries, with 700 employees, are corresponding to approximately 8% of European sales

NEC

Country of origin: Japan

Some basic facts:

- * NEC strives to advance societies worldwide through "C&C"
- * The company has four main business areas:
 - Communications systems and equipment are equivalent to 26% of the total sales, with products such as electronic and digital telephones, videotelephones, fax, CATV-systems, teleconference systems and fiber optic communications systems
 - Computers and industrial electronic systems are the largest business area, with 43% of sales from products such as super, mini and personal computers, as well as software
 - Electronic equipment includes integrated circuits, microprocessors and transistors, and is responsible for 22% of total sales
 - Home electronics includes TV's, video equipment, CD players, and kitchen appliances, with 7% of NEC's sales
- * Domestic sales account for 75%, international sales, 25%
- * NTT purchased a third of their digital switches, digital transmission systems and fiber optical hardware from NEC
- * In March 1996, the Trans-Siberian Microwave Communications Network, stretching from Moscow to Khabarovsk, was inaugurated, NEC being a major contributor of SDH systems
- * NEC is running PHS trials in China
- * NEC has 15 subsidiaries and offices in Europe, including Sweden
- * NEC markets and manufactures in Europe in four sectors:
 - Semiconductors: DRAM, ASIC
 - Home electronics: video equipment
 - Microwave and satellite communications systems
 - Communications equipment: fax, mobile radio

The company in numbers:

- * 1996 revenues: ¥ 4 397 billion (1995 : ¥ 3 769.39 billion; 1994: ¥ 3 579.79 billion; 1993: ¥ 3 514.98 billion; 1992: ¥ 3 514 billion)
- * Number of employees: 152 716 (1995: 151 069; 1994: 147 910; 1992: 117 994;
- * NEC has 78 factories, 51 subsidiaries/branches and 375 offices in the world
- * NEC invests approximately 16% of annual sales in R&D

Nokia Corporation

Country of origin: Finland

Some basic facts:

- * Nokia was formed in 1865, over its century of operations developing into a diversified industrial conglomerate
- * Today, Nokia is concentrating on two business areas, mobile telephones, and telecommunications called:
 - Nokia Mobile Phones, 1996 net sales of Fmk 21.6 billion, generated by 11 300 employees
 - Nokia Telecommunications, 1996 net sales of Fmk 13.3 billion, generated by 13 500 employees
- * In 1991, mobile telephones made up 16% of total revenues, in 1995 it was 44%
- * Telecommunications are responsible for 28% of 1995 revenues
- * Nokia claims to have 20% of the global market for handsets
- * Nokia has formed a joint venture with Mitsui & Co., Ltd. in Japan since August 1993 — Nokia Mobile Phones (Japan) K.K.

The company in numbers:

- * 1996 revenues: Fmk 39.3 billion (1995: Fmk 36.81 billion ; 1994: Fmk 30.18 billion)
- * Number of employees: 31 000 in 45 countries

Northern Telecom

Country of origin: Canada

Some basic facts:

- * Northern Telecom, Nortel, was founded in 1882 as the equipment supplier to Bell Canada
- * Bell Canada Enterprises Inc., a holding company for Bell Canada, owns 52.1% of Northern Telecom
- * The company operates in four global business areas:
 - broadband networks
 - enterprise networks
 - public carrier networks
 - wireless networks
- * Northern Telecom has an installed base of over 50 million lines in more than 60 countries
- * In February 1996, Nortel consolidated all its R&D resources under the Nortel name. It created Nortel Technology as an umbrella group for advanced design research
- * The international market for future growth includes Australia, France, Japan, New Zealand, Germany, Great Britain and Eastern Europe
- * Manufactures PABX-switches, System A345 and System M345 for Telia

The company in numbers:

- * 1996 revenues: US\$ 12.85 billion (1995: US\$ 10.67 billion; 1992: US\$ 8.4 billion)
- * Number of employees: 68 000 (1992: 57 955)
- * In 1988, Northern Telecom invested 13.1% of total revenues in R&D;
- * At the end of 1992, Northern Telecom had invested a billion dollars on the development of standards for synchronous optical networks (SONET).

Philips Electronics NV

Country of origin: The Netherlands

Some basic facts:

- * Since 1987, Philips has been going through an extensive restructuring, which has led to the sale or divestment of a number of previous businesses
- * Philips is the world's third largest electronics manufacturer
- * The company concentrated on communications and chips for next-generation electronics like interactive television, while competitors were busy making memory and microprocessors. Philips' semiconductor division is the fastest growing segment of the company
- * PolyGram, one of the world's three largest record companies, belongs to Philips, and is making inroads in the global entertainment industry
- * Philips has a dominant position in the Dutch market
- * The company has a strong position, approximately 40%, in the European consumer electronics market
- * Philips has subsidiaries in over 60 countries, including 17 in Europe.

The company in numbers:

- * 1996 revenues: NGL 69.2 billion (1995: NLG 64.462 billion; 1994: NLG 60.977 billion; 1992: NLG 58.5 billion)
- * Number of employees: 262 500 (1995: 250 600; 1992: 252 200)
- * In 1994, NLG 2.0 billion, 6.1% of revenues, was generated by telecom

Siemens AG

Country of origin: Germany

Some basic facts:

- * 17 business segments, including semiconductors, passive components and electronic tubing, transportation systems, public communications networks and private communications systems, generate total sales of almost DM 95 billion annually
- * The most well known telecom products are EWSD switches with installations in some 40 countries, Hicom PABX, EWSP packet switches and Transdata 960 communications computer systems
- * International sales account for approximately 55% of the total revenues, Germany for about 45%
- * Siemens Stromberg-Carlson accounts for 5% of the American public switching market
- * Through corporate acquisitions, Siemens has become the third largest supplier of public networks in North America, after AT&T and Northern Telecom
- * Well-established in Eastern Europe for a long time, Siemens is provided with a strong base for growth

The company in numbers:

- * 1996 revenues: DM 94.18 billion (1995: DM 88.76 billion; 1994: DM 84.598 billion; 1993: 81.648 billion; 1992: DM 78.5 billion)
- * Number of employees 379 000 (1995: 371 420; 1992: 413 000)