telia

Deutsche Morgan Grenfell

July 18, 1995

Company Report

Telecommunications **Sweden**

Telia

- Telia is the dominant operator in one of the most advanced and telephone conscious markets in the world.
- Sweden has one of the most liberalised markets in the world with the highest wireline and wireless penetration, a background and platform for steady domestic growth and strong international diversification.
- Barriers to entry are high as Telia has one of the lowest international business and residential tariffs when compared with other telecommunication operators.
- Telia has the leading market position in mobile telephony through Mobitel, and in Cable TV through Svenska Kabel-TV, both wholly owned subsidiaries.
- International telecommunication companies attracted by such pickings in the Nordic region have targated the liberalised market as a way into Sweden and Northern Europe including the Baltic region.

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Essential Financial Information - 1994

Share Capital - SEK 8,800 m

Share Holders Funds - SEK 19,842 m

Net Debt - SEK 3,380 m; gearing 17%

Year end December SEK bn	Sales	Net Profit	Gross Cash Flow	EBDIT
1993	35.34	3.15	10.92	13.27
1994	37.94	2.23	10.86	13.20
1995e	40.13	3.01	12.01	14.57
1996e	42.00	3.22	12.62	15.25

Summary

Telia is a unique telecommunications company operating in a unusual environment. Sweden, its home market, has the highest fixed line and mobile telephone penetrations in the world. Furthermore, Sweden has a high concentration per capita of consumer terminals such as video and TV sets as well as video games. As Telia has some of the lowest tariffs in the world and operates on one of the world's most modern digital networks, it could be argued that the foundation for accelarated growth has been laid. Yet, Telia is still wholly owned by the Swedish State and perhaps somewhat paradoxically, Sweden is the one of the most liberalised and open markets in the world, to the extent of even allowing simple international resale of telephony. The following report initially discusses the development of the telecommunications network and telecommunication services before analysing the company itself.

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Chapter 1: Introduction to the telecom services industry

We have in our previous reports stated that the pace of technology together with its associated high costs as well as growing liberalisation and deregulation will lead to a restructuring of the global telecommunications industry. Although we still subscribe to our previously held opinion that there will probably be around 4 global super-carriers/ service providers by the end of the century we are now coming around to the view there are greater complexities operating under the top tier of telecommunication operators. Barriers to entry are constantly being lowered through developments in both software and semiconductor technology. Ever increasing functionality and processing power at rapidly diminishing costs mean that telecom operators with a degree of marketing skill and an understanding of telecommunications software should find it relatively easy to penetrate the market or network when regulations permit easy access on equitable terms to networks of dominant operators. We therefore expect to see many successful players to operate within niches in the growing telecommunications industry.

The evolving telecommunications world may be described by a three tier model given below which are:

A) Access networks

B) Transport environment and

C) Service provision

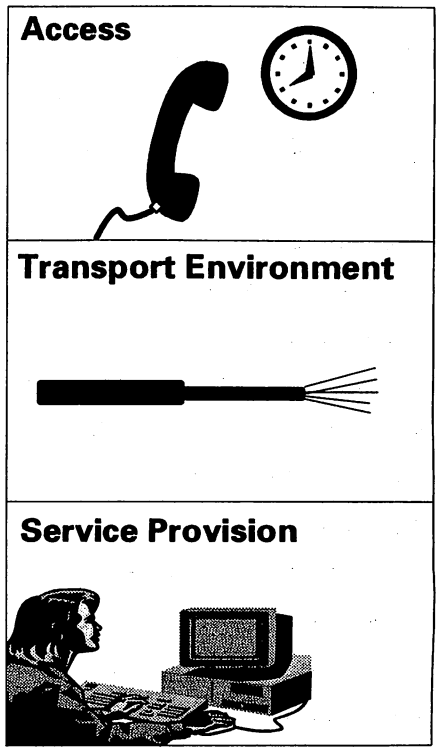
Each of these segments is beginning to develop its own unique characteristics moving away from the previous integrated monolithic structures. Competition and changes in technology, as our analysis based on the three tier model shows, are forcing the pace of change. This radical restructuring of the telecommunications industry should according to some observers transform telecommunications so radically that many traditional telecom operators may cease to exist if they do not adopt flexible market-driven organisations to meet these new challenges. Nevertheless, the potential of this industry should not be underestimated. Telecommunications, a key success factor in business, and an essential convenience for the residential user should accelerate in growth well into the 21st century.

We also expect the end-user market to segment into two main areas, the Information Technology segment running on real time world-wide telecom networks and broadband entertainment networks (mainly cable) to the home. We also foresee many new successful entrants, many of whom will be adept at providing content and many who will also supply innovative services with large profit potential.

Telia - Key Statistics	
Number of lines	6.0 m
- Business	1.4 m e
- Residential	4.6 m e
Growth in 1994 call volume	(+4.7%)
Lines per 100 people	67.7
No. of mobile subscribers	1.62 m
Mobile subs. per 100 people (Sweden)	18.6
No. of employees	32,807
Revenue per employee	SEK 1.16 m
Revenue per line	SEK 6,358
Employees per 10,000 lines	55
% trunk digital lines	95%
% local digital lines	70% e

Source: Company reports Deutsche Bank Research

A three tier model describes the telecommunications industry



The potential for this industry is huge as reports from market researchers seem to suggest. According to CIT Research the European market for wireline telecom services was worth over ECU 100 bn in 1993 and is estimated to be 50% larger by 2003. Conventional telephony, i.e. Public Switched Telephone Network (PSTN) revenues totalled ECU 90 bn, which is nearly 90% of total revenue from public wireline services. Public Data generated ECU 2.5 bn, Private Circuits ECU 6.2 bn, ISDN (Integrated Services Digital Network) only ECU 1.3 bn but forecast to be over ECU 40 bn by 2003. It should however, become part of the PSTN network. That report is much more pessimistic about the advanced services market and significantly lower than our own estimations. It says that these new services (typically Intelligent Network Services such as itemised billing, call barring, call divert etc.) will generate less than ECU 10 bn by 2003 - less than 10% of combined PSTN and ISDN revenues.

This three tier model of access, transport and service provision briefly described below in terms of liberalisation and technology highlights the key developments taking place within this industry.

Access

Access to the final end-user is being transformed by developments taking place within both wireline and wired technologies. Traditional twin wire cable is being supplanted by coax and fibre but the most costly factor in access is not necessarily technology. It has to be borne in mind that civil engineering construction is responsible for more than 75% of costs in final access.

We also believe, coaxial links with its inherent large bandwidth will be the preferred method to connect with the home and fibre should form the back-bone network to the business customer. The flexibility that the current generation of electronic equipment offers, experience gained in operating within a working environment as well as economies of scale are all factors which ensure that fibre optic terminals and ancillary equipment are not likely to displace electronics and coax, by at least the early 21st century. Furthermore, the development of Asymmetric Digital Line (ADSL) along with Hi Bit Rate Subscriber Line (HDSL) means that traditional copper may have a longer life than orginally forecast.

It is in wireless that the most significant developments in access are taking place. Conventional cellular (the present generation of analogue as well as GSM) confers mobility at a premium but pricing and, maybe quality, do not match that of the fixed network. We also believe that a combination of the intelligence of the fixed network with the feature rich capability of the latest mobile digital systems should release synergy and more choice to the customer. While cellular telephony is at present a premium mobile service, other wireless methods offer alternatives to users which may substitute the fixed network. Our view which is now gaining support is that the fixed network is likely to be used for higher band width multi-media services while basic voice and low speed data will be carried over wireless

The Top Western European VAS Countries by Revenue, 1992

	ECU m
1. UK	2144
2. France	1915
3. Germany	907
4. Italy	545
5. Netherlands	490
6. Spain	350
7. Sweden	338
8. Switzerland	287
9. Belgium/Luxembourg	151
10. Finland	98
11. Norway	93
12. Austria	74

Source: CIT Research — Deutsche Bank Research

Market conditions in the EU and Sweden - 1993

	EU (except UK)	Sweden
Terminals	Free	Free
Value-added services	Free/ being liberalised	Free
3rd party traffic (data com.)	Free by 1996	Free
Data network services	Free by 1996	Free
Mobile telephony	Licensed duopoly/ monopoly	3 operators
Satellite com (VSAT 2-ways)	Monopoly/ limited freedom	Free
3rd party traffic (telephony)	Restrictions/ not permitted	Free
Voice telephony	Monopoly	Free
Cable TV	Geographical monopolies	Free
Construction of physical nets	Monopoly	Free
Regulator/ Implemented operator separation	Implemented	

networks. It is worth noting that wireless broadband is now technically feasible and has been successfully demonstrated in the US.

The access loop - attractive to new entrants including mobile

Traditional cordless telephony should continue to grow in new forms but the emergence of Personal Communication Networks (operational now in Germany) - the E plus network and two in the UK (Mercury one -2- one and Orange) at higher frequencies in the public domain as well in the office (the DECT standard) should begin to feature more prominently in the local loop as the telecommunications industry evolves. Furthermore, radio techniques learnt in cellular are now being applied in the final access to the customer - the so-called local loop which has the additional advantage of negligible construction costs. Radio in the loop is operational in Hungary, Germany, Malaysia and the UK. Finally, development of intelligence in the fixed network as well as smart-card technology also confers a degree of mobility through what is termed number portability.

Competition

Quality/Price are important but dominant monopolies are breaking down attracting new entrants such as Cable TV and mobile

Three important factors have to be borne in mind when competition in the local loop is considered. Quality and price are key as should be expected but dominant monopoly and re-balancing are playing a greater role in breaking the stranglehold of the incumbent operator. Barriers to entry are high as a result of cross subsidisation by the significantly more profitable international and local long distance traffic. When local tariffs begin to reflect more accurately the cost of provisioning the same, access technologies described earlier should rapidly capture market share. Political initiatives across the world and, in particular, in Europe are aimed at promoting competition e.g. the recent EC Green Paper on the future of European mobile communications is aimed at quickening the pace of competition in the access loop. Issues such as connection of the different mobile operations within a national boundary, or even across frontiers, and whether the mobile operator will be allowed to provide fixed network services are under consideration and will have an important bearing on the future course of access and the evolution of the industry. Similarly, the EC's at present draft directive on network infrastructure calls for cable TV operators being allowed to offer alternative telecommunications infrastrucure while prohibiting public operators from owning telecoms and cable TV networks in the same geographical area.

The transport network

The transport network has high barriers to entry

Developing the transport and infrastructure network is expensive; apart from the hardware - switches, transmission equipment (cross connects, multiplexers etc), power supplies, network management systems, software development costs, there are also costs for land and building as well as construction of the same. Barriers to entry are high; however, as most transport networks are under utilised, many access networks and carriers, in theory, can be accommodated on a transport network. In our model mobile networks are primarily access

mechanisms, although, they do offer end- to-end transport functionality.

End to end transfer of data is also transport but metropolitan networks are in the transport category

Data communication networks are usually separate and dedicated but it too can be described in terms of our model. Data communications whether it is a dedicated packet switching network (X .25 protocol) or the more modern frame relay uses leased lines as a pipe to transport information. Metropolitan networks used in the transport of fast data or the interconnection of Local Area Networks, are in our view, part of the access network. Fibre-optic rings now in operation in urban areas for the large-user business customer are also part of the transport network. One of the most significant developments in telecommunication is the implementation of the Virtual Private Network (VPN) made possible by the deployment of what is known as common channel signalling. No 7 in the public switched network i.e. creating a private network using the Public Switched Network VPNs can also transport data including frame relay, compressed voice and Switched Megabit Data Services.

Competition

Competition limited in transport

The transport network is almost totally controlled by the dominant or monopoly operator but, increasingly, utilities such as the railways and electricity as well as institutions with large information technology operations have entered the telecommunications service world.

Most of these organisations have fibre-optic networks which are easily upgraded by the addition of switches and advanced transmission systems. Their strategy has been to bring in expertise or form alliances with other telecom operators. Their success, however, depends on the way the telecommunications industry is regulated, in particular, how interconnect and access deficit arrangements are negotiated.

Service provision

Telecommunications has become a market-lead industry although the level of technology is also forcing the pace of growth in the industry. The highest level of semiconductor integration down to 0.5 micron line widths are needed in intelligent mobile phones; the most highly integrated memories are used in the newest generation of Public Switches, and the latest digital signalling processors offer multiple means of manipulating information. Technology is the enabling platform on which a variety of applications can be written to the benefit of both the business and residential user.

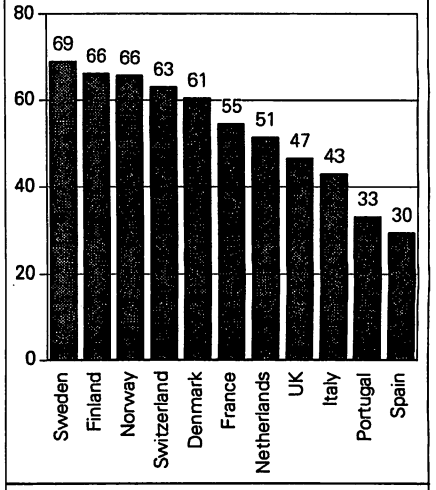
As in Information Technology where open systems led to a proliferation of PCs and applications software there is a move towards common standards in telecommunications. Client-server architecture, well established in the computer world is becoming more common in telecommunications. ATM forums are encouraging commonality and applications platforms are becoming merged e.g. AT&T and Hewlett-Packard are integrating their applications platform creating one platform for managing public networks and enterprise networks, so that there will be a single platform which will be based on HP Open View.

The rapid growth of service provision strengthens our view that the telecommunications industry is market-driven. Service provision encompasses a) value added services - totally liberalised in Europe -, b) the provision of corporate networks for both internal use and the public world, c)service provision in European mobile communications, and d) other services such as calling line identification and itemised billing now increasingly provided on telecommunications network as a result of what is known as common channel signalling (SS7). It is also worth re-emphasising that a telecommunications network is a computer network with a real-time operating system on which an accelerating number of applications can be written.

The size of the services market is huge as the following serve as examples. In 1993 European value added services, according to Analysys research, were ECU 5.6 bn and the global networking management and support service was USD 5.5 bn.

Furthermore, the study also reports that service providers are offering corporate voice services to closed user groups representing ECU 41bn out of a total ECU 77 bn market. When global markets totally liberalise we predict explosive growth in services which should also lead to a proportinate growth in traffic boosting revenue growth of carriers.

Main telephone lines per 100 inhabitants in European countries - 1992



Source: ITU — Deutsche Bank Research

Explosive growth in service provision ...

Competition

It is in the segment of service provision that we envisage the most competition and participants. The market driven telecommunications industry is growing as a result of a proliferation of applications programmes written on real time operating systems of modern telecom networks by service providers or applications software houses.

Traditional telecommunications companies do not have the breadth of knowledge of the end-user market to satisfy the needs of a demanding customer base.

The advantage to the operator of the transport network is that the network usage increases as a result of market stimulation and competition. However, effective regulation is needed to determine interconnect agreements and easy access to the transport network.

It could be argued that the way the service provision segment is stimulated and regulated determines the speed at which telecommunications services market moves.

We believe that the recent spate of alliances, BT MCI, WorldPartners, Unisource and EunetCom are signs that the world of service provision is consolidating. The key to success is likely to be marketing; i.e. how these businesses are organised when they face the customer. Factors such as vertical market strategy and quality assume importance over pricing.

.. but marketing is the key success factor

Operators, carriers and VAN providers on the Swedish market

Telia	MCI
BT	GEIS
AT&T	EDS
Tele 2/Cable & Wireless	IBM
US Sprint	Nordic Tel
Transpac/France Telecom	Comviq
Telenordia	MFS Communications
Singapore Telecom	Call-back operators
Telecom Finland	

Surce: Company reports: — Deutsche Bank Research

Chapter 2: Telia - The Company

Telia, operating one of the most advanced digitised feature-rich networks in, arguably, the most liberalised telecommunications environment which has the highest fixed and mobile penetration in the world, faces unprecedented challenges to join the ranks of the world's top league of super carriers. In the absence of a protected and heavily populated domestic market with a substantial business segment Telia is adopting risky and bold international strategies to grow its revenues and profitability. An alliance called Unisource has been formed with three other large European carriers: PTT Telecom in the Netherlands, Telefonica of Spain, and the Swiss PTT. Its aim is to capture significant market share in the rapidly growing outsourcing business market as well as becoming a leading player in the European long distance telecommunications market. At the same time in the face of increasing domestic and Nordic competition the company is refining its network architecture and reducing its workforce to improve operating and market efficiencies. Telia in the pursuit of these aggressive aims has two important advantages; it is becoming competition-hardened and Sweden has some of the world's most sophisticated telecommunications users.

We believe in the next 5 years profit growth will be at around 5 - 8% per year which will be due in the main to a reduction of costs. Furthermore, a loss of domestic market share should be offset by more profitable, enhanced software services revenue. In the longer term Telia's future is closely linked with Unisource. We believe that its chances are better than even and the company should add a fast growing revenue stream.

Objectives, strategies and tactics

It is in the light of our view on the telecommunications service industry, the rapidly changing Swedish market and the growing competition in both international business telephony, we have analysed Telia's business policies.

The driving force behind Telia's business aims is the recognition that its loss of domestic market share has to be offset by international revenue from primarily the business customer. The company also believes that its shrinking margins which follow from growing competition have to be compensated by improving productivities to bring them in line with the best international practicses which are normally the US Regional Bell Operating Companies (RBOCs). The company is also reorganising so that it is becoming more customer driven in recognition of the growing market driven nature of the telecommunication services industry. Finally, Telia like all telecom companies recognises that the domestic customer, (both the residential and business) underpins its cash flow and profitability.

Telephone charges for business users - January 1994

(USD)	Fixed charges	Usage charges	Total
Australia	233	879	1,112
Austria	149	1,092	1,241
Belgium	123	584	707
Canada	349	591	940
Denmark	197	416	613
Finland	265	399	664
France	155	801	956
Germany	131	846	977
Greece	142	876	1,018
Iceland	100	212	312
Italy	164	1,082	1,246
Japan	170	662	832
Netherlands	**156**	**331**	**487**
New Zealand	472	459	931
Norway	206	453	659
Portugal	217	1,742	1,959
Spain	162	1,049	1,211
Sweden	187	216	403
Switzerland	160	704	864
Turkey	79	2,343	2,422
UK	240	564	804
US	220	732	952

Telephone charges for residential users - January 1994

(USD)	Fixed charges	Usage charges	Total
Australia	131	273	404
Austria	149	339	488
Belgium	130	204	334
Canada	111	155	266
Denmark	157	104	261
Finland	203	94	297
France	92	275	367
Germany	131	226	357
Greece	90	339	429
Ireland	255	290	545
Italy	101	289	390
Japan	112	209	321
Netherlands	**156**	**98**	**255**
New Zealand	273	122	395
Norway	169	122	291
Portugal	187	390	577
Spain	186	290	476
Sweden	122	97	219
Switzerland	160	218	378
Turkey	32	539	571
UK	188	182	370
US	171	218	389

Source: Company Reports Deutsche Bank Research

Objectives

Telia in our view has three main corporate aims:

3 corporate goals

a) Firstly, to consolidate its position with its small and medium domestic business.

... domestic

b) Secondly, to provide a comprehensive range of telecom services to Swedish Multinationals in local and international markets. This objective has been widened to include multinationals in Switzerland, the Netherlands and Spain with the formation of Unisource. A secondary aim is to capture a large market share in the fast growing outsourcing market. This market has not been fully defined but in broad terms is 'the management of telecommunications networks and information transmission need of multinationals'.

.. multinationals

c) Thirdly, to retain its position as the dominant supplier to the residential market.

.. dominant residential supplier of telecoms

Strategies

Strategies could include ...

Firstly, Telia's network is being simplified (including a flattening of its hierarchical structure) and modernisation accelerated (construction of fibre-optic rings aimed mainly at the large business customer, installation of ATM switches for multi-media and synchronous transmission systems). An important reason behind this process of refining the network architecture is the need to introduce flexibility. This will allow networks to be rapidly configured in order to respond quickly to customer needs.

... modernisation of networks

Secondly, Telia is refocussing on segments where there are growth opportunities such as mobile telephony and Cable TV. Telia's using the functionality present in the intelligent network to provide a joint mobile/fixed offering which also includes and hybrid service combining GSM and the Digital European Cordless Telecommunications telephony.

... focus on new growth areas, mobile and cable...

... as well as hybrid fixed mobile networks

Thirdly, Telia 's aim is to support its multinational client base globally and to service them in foreign markets as they rapidly globalise. A subset of this policy is to service foreign multinationals when they move into Sweden. As this policy should have a crucial bearing on Telia's future profitability an entire section will be devoted to an analysis of the benefits and risks involved in Telia's international strategy and, in particular, its participation in Unisource, a joint venture with Telefonica of Spain, PTT Netherlands and the Swiss PTT.

.. Support the multinational client

Fourthly, Telia's aim is to strengthen its position within the Baltic area by taking minority stakes in fixed line or mobile Telephone Operators, in countries which were part of the former Soviet Union.

... and treat the Baltic region as a home market

Tactics

a) Business and International
The aim of Unisource is to offer a full range of telecommunication services to the business customer, the domestic multinational i.e.those in the Netherlands, Switzerland, Spain and Sweden forming a large virtual captive market of critical size to which international telecommunication services are provided to the multinational customer. Unisource's long term goal is to become a dominant European long distance carrier which would handle intra-European and international voice and data traffic.

b) Residential
Telia's aim in its residential market is to capitalise on Sweden's large penetration in both the fixed and wireless network by providing a range of enhanced telecommunication services such as call waiting, call ID priority ringing, call screening, call transfer, call forwarding, busy line etc. These services typically carry high margins and are fast growing.

Investments already operational internationally (% stake)

Estonian Mobile Telephone	24.5%
Estonian Telephone Company	24.5%
Latvian Mobile Telephone	24.5%
Overlay network in Riga	(out-leased)
RAM UK (mobile data)	5.0%
Infonet	5.4%

Source: Company report: Deutsche Bank Research

Unisource will support the multinational customer

Telia will also try to provide entertainment via its own fixed network or through its subsidiary Svenska Kabel.

Service revenue to supplant loss of market share

Underpinning both its domestic and international strategy is Telia's commitment to quality flexibility and innovation. Telia's short term tactic is to reshape its culture into a market-driven organisation.

Strengths

Telia operates one of the most advanced networks in arguably one of the most liberalised telecom markets in the world. Its domestic market has the highest penetration of both wired and wireless services.

Sweden.....One of the most advanced telecom markets

Telia is the second largest cable TV operator in Europe. Telia has some of the lowest business and residential prices within the OECD group of countries.Telia has among the lowest charges for the business and residential user.

With lower business and residential costs

Weaknesses

Sweden or Telia's target market is much smaller than most of its major competitors such as the UK, Germany, France Japan and the US.

The telecommunications market of Sweden is the most open in the world which also offers international resale within the country and at present between Canada, Sweden, Denmark and Australia.

We understand that Telia's top 100 customers account for around 50% of its international revenue therefore its revenue base is vulnerable.

Threats

The potential of the Swedish market with its fairly large corporate base has attracted foreign telecommunications operators who are likely to capture market share.

The liberalisation of the European telecoms market and, in particular, the opening of the voice telephony market should facilitate the entry of new telecoms operators. It is worth noting that some barriers to entry which were fairly high due to rather large technical costs have been lowered by the pace of technological development.

Governments or European institutions having noted or noting the continuing significant dominance of the incumbent telecommunications operator may take dramatic action to stimulate (force) a reduction of market share. For example, we note that there are discussions within EC circles on the enforced separation of Cable TV companies from their parent telephone company.

Opportunities, response and conclusion

Telia is pursuing a policy of consolidation in its domestic market and a fairly risky international strategy. OECD studies show that Sweden's telecommunications spend on a per line basis was less than the OECD average but significantly higher on a per capita basis. This seems to indicate that the company is aggressive in trying to defend or indeed grow its market share (and profitability) but is also efficient in the way its investment policies are conducted. It should also be worth repeating that the penetration of telephony in Sweden is high. However, Telia's strategy in the shorter term is to acquire a more market lead culture.

A recent CIT research survey rates Telia highly on technology and reliability - a strong foundation for growth - but average on customer services and responsiveness. In our view the speed at which Telia becomes a market driven organisation may very well be more important to its success than other factors. Telecommunications has indeed become a consumer lead industry. Given that line growth is minimal (our view is that the number of lines will remain static at around 5.9 m lines) we expect Telia to follow the example of the RBOCs and rapidly install revenue generating enhanced intelligent services. This should be accompanied by continuing marketing initiatives to stimulate usage of the telephone line. These would include flexible tariff options and other schemes such as those recently initiated by BT, e.g. premium discounts for the user, low price weekend local and international calls, etc. We expect at best a small growth in international call volume as the company begins to feel the impact of competitive forces.

The immediate impact of competition and stimulation should be to enlarge the market. Sweden is unusual in that there are more than 155 lines per 100 households and that many residential customers have telefaxes as well as vacation cottages with telephones. We expect that within five years revenue (1997) growth should be driven by intelligent services, more than offsetting a loss of market share.

Public Telecommunication Investment per mainline

(USD)	1986/ 1988	1992
Australia	274.89	232.21
Austria	387.65	383.52
Belgium	191.86	168.96
Canada	204.38	242.64
Denmark	232.80	146.27
Finland	235.60	211.86
France	253.85	188.89
Germany	429.85	505.62
Greece	73.94	158.12
Ireland	329.91	238.37
Italy	335.84	396.45
Japan	328.07	352.56
Netherlands	160.59	218.76
New Zealand	159.37	255.59
Norway	343.84	256.05
Portugal	315.52	295.60
Spain	274.68	305.74
Sweden	243.89	199.58
Switzerland	469.33	448.90
Turkey	275.49	53.06
UK	195.93	146.01
US	182.49	167.71

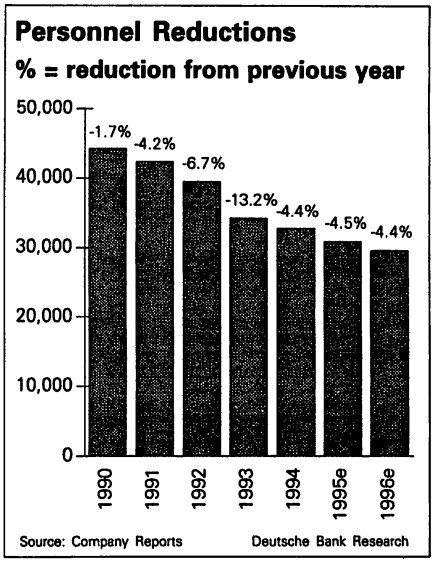
Public Telecommunication Investment per capita

(USD)	1986/ 1988	1992
Australia	120.18	113.13
Austria	148.80	168.63
Belgium	65.89	71.87
Canada	106.85	143.64
Denmark	123.96	84.96
Finland	113.16	115.22
France	113.04	99.10
Germany	191.20	222.16
Greece	25.65	69.03
Ireland	73.93	74.80
Italy	112.31	162.67
Japan	129.33	163.48
Netherlands	68.45	106.59
New Zealand	64.38	113.54
Norway	159.21	136.13
Portugal	54.84	90.49
Spain	73.82	123.71
Sweden	159.18	136.13
Switzerland	248.50	272.06
Turkey	19.26	8.55
UK	77.96	66.11
US	94.36	94.74

Source: OECD — Deutsche Bank Research

However, the greatest contribution to profitability in the short term will probably be driven by an aggressive reduction of Telia's workforce. The average number of staff employed has fallen from 43,535 in 1989 to 32,807 in 1994; we expect a further 10% reduction to below 26,000 full time equivalent number of staff by end of 1996. This should bring Telia in line with its competitors.

The more significant and material factor in the longer term will be the potential contribution from Unisource. In other words will the revenue gained by addressing a global segment - outsourcing - and the European as well as the long distance telephone market replace the erosion of Telia's market share in its home market in both business telephony and international telephone traffic. We believe that on balance Unisource has more than an even chance of becoming an important player on the global scene. However, there are risks involved which the investor should be aware of. Accordingly we devote below a brief overview and analysis of Unisource.



Chapter 3: Unisource

Unisource - a consortium of 4 major telecoms companies.... a key to success in international markets

The dominant telecommunications companies of the Netherlands, Sweden, Switzerland and Spain have each contributed a quarter of the capital of SFR 420 m, to Unisource whose principal aim is to supply the telecommunication needs of multinational companies in Europe. Its home market is Europe and the target is initially European based companies.

Industry - Background

Telecommunications industry consolidating

Three forces are driving the formation of global alliances to enter the consolidating telecommunications industry.

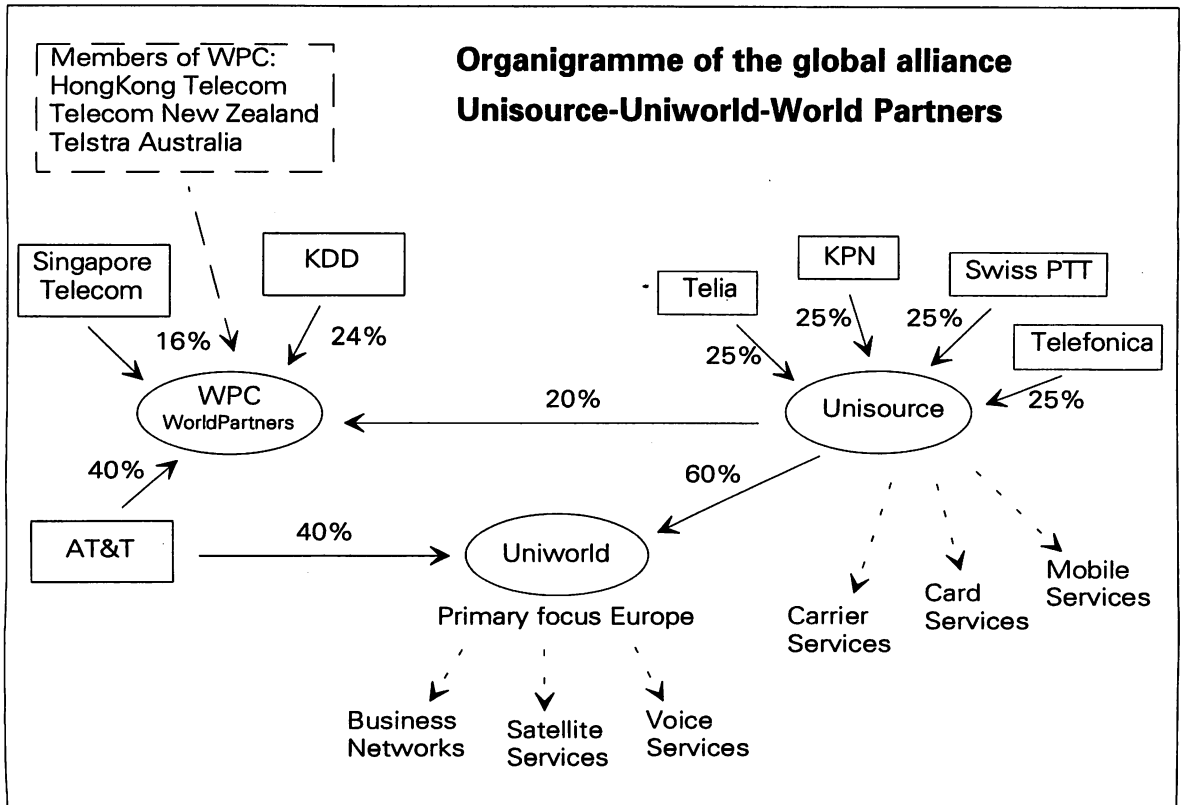
These are:

Emergence of outsourcing market

1) The emergence of what is called the outsourcing market which is addressing the global telecommunications needs of multinationals. These companies with diverse operations need one entity to manage their networks which, for ease of operation, has to be seamless across five continents. Furthermore, there has to be one point of contact for billing, maintenance and shopping; the one-stop concept.

Estimates vary but researchers put the market at USD 1.0 bn in 1995, growing to USD 10 bn within 10 years. There is a question mark relating to the size of the available market as many national markets are protected and will only use local operators. However, these markets are also liberalising.

Organigramme of the global alliance Unisource-Uniworld-World Partners



Source: DB Research — Deutsche Bank Research

2) Increasing competition within international telephony markets, arguably the most profitable within telecommunications. This arises not only from other PTO's entering the market through services such as call-back but also from simple international resale (the opening of markets to third parties) international discounters such as Swiftcall and World Comm and the growing pace of liberalisation across the globe.

Competition in international telephony growing ...

3) The liberalisation of the European telecommunications market, under EU directives, is scheduled for 1998. This means that a market gap exists for telecommunications operators in Europe to be the equivalent of AT&T in Europe. It is worth noting that long distance telephony tariffs are reportedly two to three times that of North America. This has led to the formation of four major global alliances described in schematic form at the end of the section on Unisource.

... and the pace of European liberalisation increasing

Unisource Company Structure

There are currently six operational companies within the Unisource Group.

Six operational companies

1) Unisource Business Networks (UBN)

As this is the principal area of activity it should generate the most revenue but, due to the highly competitive nature of this area margins at UBN across the globe. are likely to decrease. UBN's objective is to supply multi-national companies with telecommunications services through one point of contact the so called one-stop shopping concept. The services will be distributed by member partners in their countries similar to the BT-MCI Concert strategy. Services will be distributed in other countries by the national telephone operators.

The major services in the offering includes frame relay, managed bandwidth which is an advanced platform from which to build tailor-made pan-European and global communications solutions, facilities management and networks management among others.

2) Unisource Satellite Services (USS)

This area complements UBN. Its objective is to supply European companies with international satellite services. USS claims to operate the most extensive network for direct satellite communications in Europe. VSAT, point to multipoint and interactive services are offered by USS.

Satellite helps meet businesss demand

3) Unisource Voice Services (UVS)

Its objective is to provide pan-European and global voice services for business customers by initially offering IVPN services. When voice telephony is liberalised in Europe this division should become more important. UVS is available in around 16 European countries; in the four member countries services are provided by the fixed PSTN and in the rest calling features are linked to customers by direct access lines.

IVPN, a significant contributor to future profitability

We understand that the Unisource members are progressively merging and integrating their Satellite and data networks operations. We would point out that Unisource is merging these three operating companies above into the joint venture with AT&T Business Communication Services Europe and the AT&T Easy Line services group called Uniworld.

Other Unisource divisons are as follows:

4) Unisource Card Services (UCaS)

To improve brand name

UCaS's aim is to market calling cards under the Unisource brand name through the provision of the first truly pan-European calling card and it also provides partnership cards, such as tie-ups with frequent flyer or bank cards.

5) Unisource Carrier Services (UCS)

Negotiates traffic flows from other operators

This is an operation with a long term future as it aims to co-ordinate the networks of the respective shareholders. It is also the central authority within the group for negotiation with other carriers for carrying their traffic around the world on UCS's network.

6) Unisource Mobile (UMT)

Unisource mobile to take equity participation in foreign operations

UMT will address the emerging mobile opportunities in Europe and other markets by , for example taking stakes in foreign operators. Initially, UMT's aim is to provide value-added personal communications services required by business travellers and consumers away from home, pursuing this via licence exploration and operation service provisions and distribution and through development of the value-added services.

Market strategies

Diversification into other markets ...

Unisource has been strengthened by other agreements to boost its presence in Japan, the US and the global market place;

a) Japan

... Japan ...

KDD, the largest Japanese International telecommunications operator, has signed a co-operation pact with Unisource. The reported aim of this partnership is to jointly develop seamless interfaces so that traffic can more easily flow between Europe and Japan. Japanese multinationals could more easily maintain datalinks with their subsidiaries in Europe. This has further been strengthened by links with the AT&T WorldPartners grouping.

b) WorldPartners

... through World Partners - other international markets

Unisource's 20% in the WorldPartners alliance allows it to deploy its 'World Service's' to multinational customers in Europe while Unisource will be able to provide its European customers with access to North America and the Pacific Rim countries, (serviced by Telstra of Australia, New Zealand Telecom, Hong Kong Telecom and SingaporeTelecom).

Furthermore, the formation of Uniworld strengthens the links between Unisource and WorldPartners.

c) SITA

Unisource signed an agreement in December 1993 with SITA, which reportedly runs the largest private Value Added Network in the world. Owned by 400 airlines with a turnover of around USD 600 m a year its network is more important in terms of its world wide real-time fault tolerant operating system. SITA is in the middle of a reorganisation to split the company into three operating areas and has plans to roll out a IVPN network to around 20 countries. This may mean a severing of its links with Unisource.

.....Sita - the largest data communications network in the world ...

d) Unisource, Spain and Latin America

(We are devoting a small section here to highlight one particular and vital aspect of the company's strategy)

... as well as Latin America and Spain ...

Telefonica of Spain has also worked with Unisource to begin what it calls an intensive long-term co-operation. The combination of the premium data services of Telefonica with the comparable functions of Unisource will provide the former customers with a European extension and Unisource customers should have customer support facilities in Spain. The long-term aim is to harmonise interfaces between their respective network infrastructure, and network management systems in order to promote seamless communications with one-stop shopping, maintenance and billing. It should be a further source of revenue to both operators as Telefonica through a subsidiary Telefonica International (TISA) is a significant player in South America through its equity stakes in many Latin American telephone operators.

TISA has stakes in 20 Latin American countries including local and long distance operations, data transmission networks and mobile telephone companies. It is the largest dominant single telecoms group in the fast growing Latin American market. The combination of TISA and Unisource would create a single seamless network linking Latin America and Europe.

e) Uniworld

Unisource and AT&T have announced the formation of a new company Uniworld, that is combining their data, business and voice services in Europe. The primary market focus for the company is Europe providing multinational companies with communications services.

... and strengthend by co-operation with AT&T

The joint-venture is expected to be fully operational by the end of 1995 although some services are already available due to the companies earlier co-operation on closed user voice and datacomms services and in the WorldPartners Company.

Unisource will own 60% and AT&T will own 40% of the venture. The new company will have assets of around USD 200 m and over 2,000 employees. Its aim is to have

The top twenty International Carriers 1988 - 1993

Rank	Company	Country	Outgoing Traffic (millions of MiTTs) 1988	1991	1992	1993	% Change 92-93
1	AT&T	USA	4,778	6,557	6,984	7,129	2.1
2	DBP Telekom	Germany	2,479	3,605	4,087	4,680	14.5
3	MCI	United States	62	1,600	2,083	2,839	36.3
4	France Telecom	France	1,570	2,295	2,449	2,576	5.2
5	BT	UK	1,654	2,105	2,188	2,310	5.6
6	Telecom Italia	Italy	n/a	1,220	1,473	1,610	9.3
7	Swiss PTT	Switzerland	1,014	1,429	1,551	1,572	1.4
8	Stentor	Canada	1,054	1,425	1,520	1,430	-5.9
9	Hongkong Telecom	Hong Kong	441	913	1,137	1,377	21.1
10	Netherlands PTT	Netherlands	706	1,018	1,134	1,238	9.2
11	Sprint	USA	131	723	940	1,175	25.0
12	Belgacom	Belgium	561	823	911	979	7.5
13	KDD	Japan	529	850	893	952	6.6
14	China MPT	China	170	440	635	895	40.9
15	Telefonica	Spain	330	719	804	847	5.3
16	Mercury	UK	75	493	661	820	24.1
17	Teleglobe	Canada	358	647	722	808	11.9
18	Austrian PTT	Austria	401	642	713	767	7.6
19	Telia AB	Sweden	485	672	691	685	-0.9
20	Telstra	Australia	415	610	659	640	-2.9
	Unisource		2,535	3,838	4,180	4,342	3.9

Source: TeleGeography

Deutsche Bank Research

more than 300 of the world's leading multinational companies as customers.

Unisource will merge it business networks, satellite and voice services divisions with the AT&T Business Communication Services Europe and AT&T Easylink Services Groups.

Unisource and Uniworld objectives and strategies

Primary objective profitable world of multinationals

The primary objective is to satisfy the telecommunications needs of domestic and other multinational companies and organisations. A strength of this consortium is that the Netherlands, Spain, Switzerland and Sweden have many multinationals with extensive operations in their respective countries. Secondly its aim is to enter the pan-European market, and thirdly, to develop into other types of services including mobile and calling card services.

The underlying rationale of Unisource is to create a new force in European and global communications as well as focussing on the competitive, rapidly growing but declining margin world of outsourcing. These objectives are offensive although the formation of Unisource was primarily brought about by the realisation that the partners lacked critical size to compete effectively against the major global telecommunications operators.

Unisource - a unique and separate corporate identity

Unisource will have a separate corporate culture; we understand that at least 20 nationalities are represented in its work force working in a flat organisational structure. We believe that a large programme of Capex is planned with switching voice and data hubs being implemented in many countries. Uniworld itself plans to spend USD 1.0 bn on a seamless network in the major urban centres of Europe, North America and the Pacific Rim. A tactic of this venture will be to combine its data and business voice networks by building an end-to-end International Virtual Private Network (IVPN) which will include voice messaging and video-conferencing. Its principal market is Europe carrying out the market strategies described above.

To give some idea of the scope of this market we describe the activities of the European Virtual Private Network Users Association (EVUA) which was formed by some of Europe's largest multinational companies to pressure telecom operators to deliver pan-European VPN services at lower prices.

Users such as EVUA putting pressure on global service providers to reduce prices

The EVUA aims to set up closed user groups for intracorporate use and to communicate with their customers and suppliers. Initial proving contracts were awarded to Unisource and the BT-MCI Concert alliance which has been characterised as the first phase. The EVUA claims that nearly 100% of its members traffic fall into the closed user Group category spending a total of ECU 2 bn or USD 2.5 bn per annum on telecommunications.

However, EVUA's initial target is international voice traffic which will be closely followed by the integration of voice, video and data traffic both national and international. Most members are reportedly looking for straight forward connectivity requiring such facilities as corporate numbering plans, fraud protection, conferencing and encryption. Phase 2 which is set to commence in November 1995 will incorporate more advanced features and functionality.

EVUA claims that it is looking for unit cost reductions somewhere around 20% below the best public alternative. We believe that the above illustrates the scope of the market size, its attractiveness and also the likelihood of competition and shrinking margins. The EVUA also says that BT-MCI meets the initial functionality criteria. However, Unisource is also picking up important telecom contracts including a major order from Royal Dutch Shell.

Competition (see Appendix 1&4)

Unisource has formidable competitor

The BT-MCI alliance Concert joint venture company has taken an initial lead in the world of outsourcing, closely followed by Uniworld. Other alliances such as the France Telecom/Deutsche Telecom joint venture company are further behind. We believe that the American Regional Bell Operating Companies will enter the international market forming alliances with local companies e.g. Thyssen and Bell South in Germany. RBOC's could be formidable as they are experienced in dealing with a demanding customer base.

Risks

....As well as risks ...

a) The Number of Partners

.....aims of partners

We believe that four telecom operations coming from different cultural and business environments may face large but not insurmountable problems in forming an independent company e.g. a certain amount of control over large parts of the alliance's networks will have to be ceded to Unisource. Furthermore, Unisource's strategy may at some point in the future be in variance with one or more of its owners.

b) International Traffic

.....Ownership of international traffic flows

It has not been made clear which portion of international traffic (e.g. multinational business, all business, etc.) will be ceded to Unisource. We would emphasise that international telephony is possibly the most profitable part of a telecom operator's business.

c) Business Telephony

.....Ownership of business telephony revenues ...

We have to make the same observation concerning Business Telephony which is not only profitable but fast growing. Furthermore, it is not clear whether the small and medium sized business customer in most of the partners' countries members will also become part of Unisource.

The key rationale behind Unisource is the expectation that the loss of three quarters of a partner's international and business revenue will be more than offset by profits (albeit the associates line) accruing from the other three member countries' (international and business operations). Furthermore, there should be a boost to revenue through rationalisation, economies of scale, learning curve economics and synergies.

d) Technology Risks

... as well as differing standards

As each partner's network(s) has its own signalling protocols and standards, there could be fairly large technical problems in merging their operations. This process of integration could involve a long term period delaying the "time to market" of its platform. This process of integration could also be costly.

Unisource - Financial highlights

Unisource losses narrowing

1994 was a significant year for Unisource. Despite the vigorous expansion programme and start-up cost losses narrowed to NLG 41 m compared with NLG 50 in 1993. Turnover, however, rose 200% to NLG 933 m in 1994 from NLG 294 m in 1993 - 80% excluding revenues from acquisitions. There was a corresponding increase in total assets by NLG 352 m to NLG 746 m, largely due to an increase of NLG 180 m in fixed assets.

Despite high start-up costs

Continuing high start-up costs means that operating investments alone are higher than depreciation: - in 1994 they were NLG 180 m and NLG 109 m respectively.

Core business improving profits

The company reported that all its business areas registered growth. This suggests to us that all its core activities are reporting a satisfactory level of profitability (before start-up costs). We would therefore expect that losses at Unisource should further narrow in 1995 unless there are exceptional circumstances. We also believe that Unisource could move into profitability sometime in 1996 and record profits in 1997. Another milestone was passed in 1995 when Telefonica finally announced the terms and conditions of its merger with Unisource. Under this agreement Telefonica has exchanged its Satellite Telecommunication division together with a cash payment of EPS 15 bn (USD 124 m) for its 25% stake in Unisource. The initial plan had been for Telefonica to subsume its data telecommunications activities but tax problems among others made it difficult for the original plan to go through. A management agreement has been put in place which should ensue that there are no practical difficulties in providing a seamless network to business customers.

Agreement with Telefonica sealed

Conclusion

Global service industry consolidating

It seems clear now the global outsourcing and international telephone market of service provision will be composed mainly of four or maybe only three consortia. These are the BT - MCI company "Concert"; Unisource-Uniworld-WorldParters, the alliance between Sprint and Eunetcom. We believe that an oligopolistic situation has developed as the market seems large enough to support the above-mentioned players. This of course would lead to long term regulatory problems.

It is also worth noting that the 3 players have similar problems; for instance, in the number of consortium partners. BT - MCI involves two and probably three; WorldPartners more than three and Eunetcom Sprint, three. They all have technical problems in merging their data networks such as frame relay.

Unisource will be one of the winners

Unisource also benefits from having started the operation only a few months after BT - MCI, and has already attracted new and important clients on its network. Another advantage that Unisource has is that the four partners have committed equity and are allowing Unisource to define and operate its own business policies. It is also the broad portfolio of telecommunications services that Unisource offers which differentiates it from other alliances. But, the most compelling argument is that Unisource has to be successful and profitable to ensure the long term viability of its four partners. Each of the 4 partners is aware that they would be vulnerable if they had to operate independently. That is why we believe that Unisource will be one of the three or four global players in outsourcing and international telephony.

Chapter 4: Network and modernisation

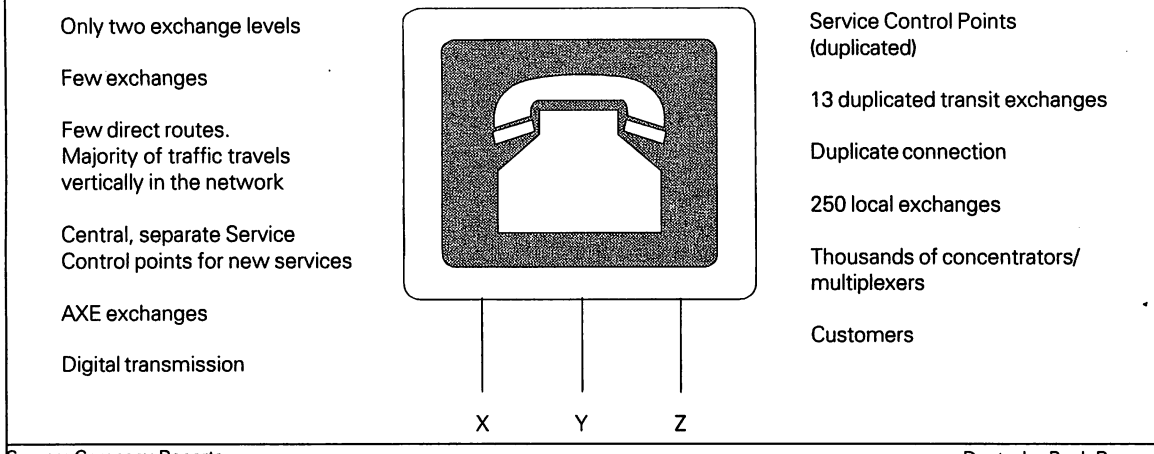
Accelaration of modernisation programme

Telia has advanced its modernisation programme by two years so that by the end of December 1997 everyone in Sweden will be connected to an AXE exchange. As described earlier the number of telephone exchanges will decrease from 6,000 to about 250.

Reduction of mechanical layers

The network will be less hierarchical with three levels instead of five. A high level of redundancy and safety will be built in by connecting the local exchanges to a transit network which will be built up in two parallel halves that function independently of each other. At present (mid 1995) 85% of Telia's customers are connected to advanced services which should be 100% by 1997. A full network of service control points, the basis of an intelligent network, will be the platform from which a comprehensive range of services can be introduced.

The New Network Structure



Source: Company Reports — Deutsche Bank Research

... installation of optical fibre and

Telia has installed around 30,000 kilometres in the long distance network adding 70,000 kilometres a year up to 1997 when a complete optical backbone is created. Synchronous Digital Hierarchy (SDH) is now being introduced and it is expected that Telia would have introduced SDH throughout the entire network by 1997. The transmission network, at that time, would have been restructured to form several logical, well-defined levels. SDH should sharply reduce costs and confer flexibility in the provision of services. The first installations in the Stockholm-Gothenburg-Malmo triangle with a capacity of 2.5G bps (30,000 simultaneous calls) has started operation.

... Synchonous digital hierachy ...

.. as well as ATM

Optical fibre is being installed in a local loop in an access network, in particular to high user business customers. We understand that a few self-healing fibre-optic rings are in operation in the major urban locations. Telia is at present constructing a broadband high speed network that can serve as a test lead and platform for research units. It is called "The Stockholm Gigabit Network" (SGN) and will use Asynchronous Transfer Mode (ATM) technology and test fast transport of applications.

... to provide flexibility

ATM network becoming operational

As a first step towards introducing ATM, Telia is taking part in a European field trial in which one node is positioned in Gothenburg. Telia itself plans to open its first commercial ATM network in the City of Helsingborg which will link the entire city, trade and industry, including schools, universities, libraries, factories and offices. Telia has also installed ATM exchanges in Stockholm, Malmo, and Sundesball. This ATM network is now being tested and should start commercial operation towards the end of 1995. Revenue from Broadband Services should accrue to the company from 1996 onwards.

Telecommunications law in Sweden

In 1993 the Swedish telecommunications system underwent major changes: Televerket became a limited liability company under the name of Telia AB and transferred all its regulatory powers to the National Telecommunications Board (NTB or Telestyrelsen). In the same year, the Telecommunications Act was passed with the purpose to provide access to efficient telecommunications at the lowest possible cost and to create and maintain competition within the telecommunications sector.

The role of the PTA

The National Telecommunications Board now renamed the Post and Telecommunication Agency (PTA) is responsible for granting licenses and supervising the compliance of the Telecom Act as well as the terms and conditions of the license. The supervision of the interconnected traffic may be viewed as "private law" according to a leading Swedish firm of lawyers. That is operators can negotiate with one another and seek agreements or compensation for interconnected traffic or access to connections. The agency has been given the role of mediator for settling disputes.

PTA - the executive agency

Number Planning

The Post and Telecommunications Agency has been given the role of supervising and establishing number planning which is important when several operators compete directly with each other.

Services requiring a licence

Services require licenses but normally granted

A licence is needed to supply telephony services of mobile communications, and telecommunications services to fixed points of connection for all telecom operators with significant activities. A licence will normally be granted on application and refused only if certain requirements cannot be met e.g. spectrum scarcity for mobile communications. A licence may be subject to conditions or may even be revoked by the PTA. An important aim of the licence is to promote and maintain effective competition.

Tariffs

Cost orientated

The Telecommunications Act stipulates that subscriber tariffs for telephony and leased cicuits are cost orientated. These tariffs have to be made open for inspection by the public. These prices have to remain within a price cap in a basket of services which do not include mobile telephony and multi line business. The philosophy underlying the price cap is to protect customers in market segments where there is little or no competition.

Interconnections

Interconnect costs should be fair and reasonable

According to the Telecommunications Act, Swedish operators have to conduct telephony service activities in a way that allows interconnected traffic with one another. The charge for interconnection should reflect costs and be 'fair and reasonable'. The Post and Telecommunications agency has been given the role of mediator.

Terminal equipment

Terminal equipment such as telephones, faxes, and modems meeting certain requirements for technical design, marking and inspection may be connected to a Public Telephone Network (the 1992 Act on Terminal Equipment).

Data protection

Confidentiality is imposed where individuals gain access to information such as telephone subscriptions or the contents of a telephone message.

Agreement between Telia AB and the Swedish State

The agreement was signed in 1993 and, valid until 31 December 1996, contains:

A price cap of RPI-1

- A price cap corresponding to the increase in NPI (Net Price Index) less one percentage unit for ordinary telephone services to residential customers and single lines to business customers. The price-cap includes a basket which is made up of connection charges, yearly rental charges, transfer charges as well as local, long distance and international tariffs. At present 65% of its telephony revenues are regulated.

Special low tariffs for residential subscribers

- A low-user tariff for residential subscribers.

- An agreement to maintain a certain level of public telephone service in sparsely populated areas without competition from the State.

- An agreement not to receive extra compensation in the form of interconnection charges for providing telephony service throughout the country. (Universal service obligation or USO). However, Telia may be able to receive compensation for USO after 1996 when competition has been established.

- An agreement, upon request, to transfer the existing customer-premises networks, which were owned by Televerket, to the owners of PABXs. This transfer shall be made at book value.

- An agreement to accept third-party service on Telia switches in accordance with certain regulations.

Comments on regulation

Competition is likely to drive interconnect agreements

Sweden has only now seen the emergence of true competition. Consequently, interconnection agreements with the fixed network and the mobile network and between the long distance operator (e.g. Tele 2) and the fixed network are only now being finalised.

Size of access deficit under discussion

The problem of Telia's so called access deficit has largely been resolved. The difference between the costs of running its local network and the revenue it generates in line connection and rental payments which at present is subsidised by long distance and international revenue. We understand that there is little difference in opinion as to the size of this deficit between the Post and Telecommunications Agency and Telia and that the amount involved is relatively small or around SEK 1.0 bn to SEK 1.5 bn.

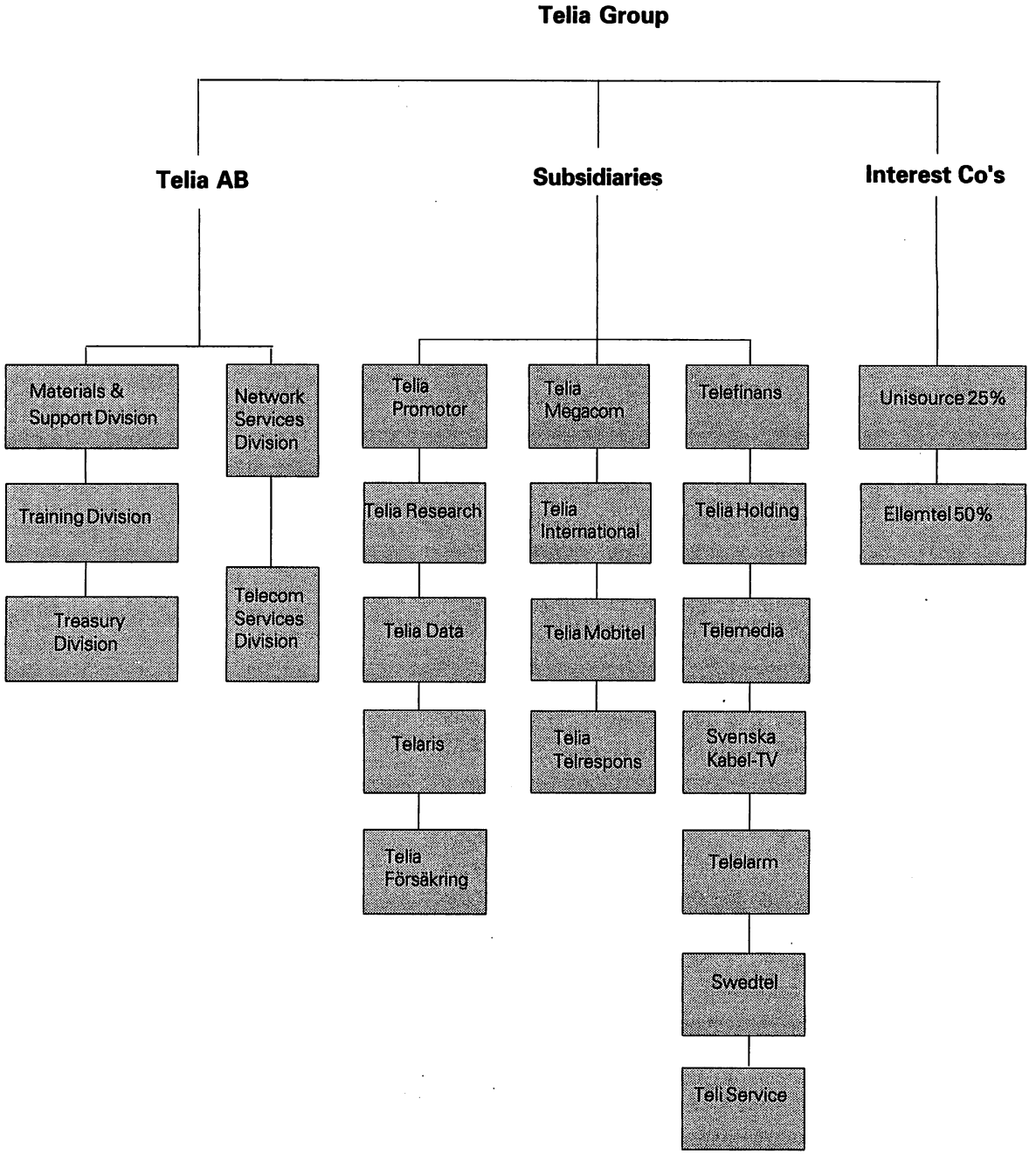
In 1994 interconnection agreements were signed between Telia and the three mobile operators. There were, however, initial problems negotiating an interconnection agreement with Telia and Tele 2. Apparently Tele 2 wanted to have an interconnection based on distance and Telia itself wanted one based on type of service. The Post and Telecommunications Agency had to intervene which finally resulted in an agreement but did not involve an access deficit contribution.

However, the new licensing of operators has led to a significant number of licenses being granted for telephony, leased lines and mobile services. Furthermore, new competitiors have also applied for licenses (see Appendix 6). The Swedish market should get even more competitive.

Tariff control in Sweden is benign and Telia's tariffs are low

The NPI is apparently a benign agreement when compared with other countries. It is worth noting that Sweden has some of the lowest charges among OECD countries and that rebalancing is at a fairly advanced stage. At present the ratio between the peak rate long distance call and a local call is around 5 times compared to the 3 to 4 which exists in the UK. The company hopes to complete its rebalancing by the end of 1997.

Telia's Organisation Chart



Chapter 5: Telia's Organisation

Complex organisational structure ...

The Telia Groups' organisational structure is complex. It consists of the parent company Telia AB and 13 wholly owned operating subsidiaries. There are two domestic operating nationwide divisions the Telecom Services Division and the Network Services Division. Furthermore, Telia AB is divided into 8 geographic areas or regions. Each division and the regions form a matrix organisation for which we give below essential financial and operational data.

Information on Telia Regions

Telecom region	Operating revenues SEK m	Operating income after depr. (SEK m)	Subscriber lines (000's)	Degree digitalization %	Investments SEK m	Fixed assets SEK m	No of employees
North	1,547	192	343	70	377	1,918	1,243
Middle	2,115	218	475	73	318	2,381	1,877
Bergslagen	2,454	214	560	70	435	2,694	2,098
Stockholm	7,248	1,715	1,271	94	867	5,707	4,195
East	3,523	1,107	871	72	719	3,627	2,276
West	4,720	950	1,018	80	856	4,086	3,785
Southeast	2,635	769	619	84	456	2,454	1,998
South	3,329	919	714	87	523	2,558	2,136
Total	27,571	6,084	5,871	-	4,551	25,425	19,608

* Including international sales

Source: Company Report — Deutsche Bank Research

It is worth noting that Stockholm and West Sweden have the highest levels of operating income, number of lines and degree of digitalisation. However, the East with a lower level of digitalisation and penetration is reporting significantly higher operating margins. Factors which may account for this apparent anomaly would include a) a degree of digitalisation is largely irrelevant to the quality of voice telephony which is at present overwhelmingly responsible for the bulk of revenue and b) usage is concentrated on a core of "terminal users".

Organisational structure (see chart on page 28):

Telia AB divisions and subsidiaries are divided into three main groups according to their activities;

i) generalist companies which market, install and support the Groups' general range of services and products,
ii) specialist companies which market services and products that complement the general range and,
iii) Business development companies which support the Groups' activities with the Telia Group as their principal customer.

... but it works

This structure may look cumbersome but the company claims it works and results do not really contradict their view. Its culture is management by objectives and decentralisation. The only comment we would make at this stage is that the structure does not make it easy to analyse the various components of the business, and in particular, the different segments of the telecommunications sector.

Network Services Division (NS)

(Local, long distance and international telephony)

Network Services ...

... the dominant operating company within the Group

NS is a generalist company within which Telia AB develops and operates Telia's telecommunications network. It is also responsible for telephony, telex and leased circuit services. It is worth noting that the NS Division is also in charge of dealings with other operators e.g. interconnect traffic and leased network capacity.

NS overwhelmingly dominates the Telia Group in terms of revenue, profitability and even strategy. In 1994 it accounted for 57% of revenue and almost 70% of group operating income after depreciation. We believe national long distance revenue to be the largest contribution to this division but should be overtaken in a few years by leased line revenues as competitors continue to penetrate the Swedish market. Moreover, the loss of revenue through falling market share will be offset not only by increasing rental charges but also growing revenues and profitability from other business areas.

These include virtual private networks in the telecoms divisions, bundled services to business customers in MegaCom, and directory enquiries in TeleRespons.

Technology

NS is responsible for the modernisation of the network

In order to cater for the rapid changes on the market place Telia is reconfiguring and restructuring its network structure by reducing its hierarchical layers from five to three and by reducing the number of exchanges from 6,000 in the old network to about 250 in the new one. Network intelligence will be concentrated in the AXE exchanges. The introduction of Asynchronous Transfer Mode (ATM) technology for broadband (information transfer and entertainment) is itself reducing network hierarchy which means that a diverse range of services can be deployed easily and cheaply. Network intelligence contained in the Ericsson AXE exchange is continuously being enhanced to provide a proliferation of services and applications. It is also worth noting that 96% of Telia's customers will be connected to a digital switch by the end of 1996.

Network Management Systems are being introduced to ensure flexibility (between the leased and switched networks).

Fibre-optic as near to customer as possible

A significant and arguably the most important development to the end user is the introduction of fibre-optic cable in the access network. Telia had, by the end of 1994 installed 30,000 km of fibre-optic cable mainly in the trunk network and around 7,000 km of fibre optic cable per annum is being added every year. The implementation of Synchronous Digital Hierarchy coupled with the ATM introduction will dramatically increase transmission capacity. The thrust of Telia's fibre-optic strategy is to place the fibre as near to the customer as possible. The fixed link to the customer will be a combination of twin wire and coaxial copper cable. Self healing optic rings have been implemented

Revenue Development - Network Services (all estimates)					
SEK m	**1993**	**1994**	**1995**	**1996e**	**1997e**
No of lines	5,910	5,967	6,000	6,000	6,000
Connection charge	75	75	80	85	90
Business rental	2,100	2,115	2,200	2,288	2,402
Residential rental	4,255	4,450	4,673	4,906	5,151
Total res and conn. costs	**6,430**	**6,640**	**6,952**	**7,279**	**7,643**
Traffic Revenue	**12,470**	**12,426**	**12,411**	**12,311**	**12,076**
Data and Service Revenue	4,950	5,461	6,054	6,670	7,382
Total Network Services Revenue	**23,850**	**24,527**	**25,417**	**26,260**	**27,101**

Source: DB Estimates — Deutsche Bank Research

in most connurbations (to be as close to the business customer as possible). Large customers have the option of being connected via optical fibre.

A ISDN network was developed separately as an overlay network and is now being integrated into the switched PSTN network. Two international gateway exchanges also handle ISDN traffic.

A consequence of this very modern network is that its quality is reportedly among the highest in the world. It is a key success factor, often underestimated by many telecom companies.

Revenue Development

ISDN - an overlay network

Telia - a high quality network

Telia is building on its experience in running the fixed and mobile network to penetrate the Baltic States which it considers its home market. The International division has been folded into the parent company where it is vigorous in pursuing business opportunities in the Baltic States. At present Telia offers fixed and mobile services in Latvia and Estonia. In Latvia, Telia provides paging through a wholly owned subsidiary. We expect these international activities to be a growing contributor to the profitability of the Group.

Baltic - an important component of International Strategy

We have modelled revenue development at the Network Services Division with the help of Telia management we are unable to present this information for confidentiality reasons, but can share our conclusions with the reader. Our analysis shows (details in Appendix 1) declining or flat revenue in the traditional areas of local, regional, long distance and international revenue. We have factored in a correlational factor for GNP growth which leads to growing revenue through rising usage but does not compensate for the continuing erosion of market share. As a result of rebalancing, rental revenue should continue to grow. Residential line rentals should grow faster than business as Telia Management will offer discount packages to the international and business user. Furthermore, we expect a greater continuing contribution from leased line rental revenue as competitors start taking market share away from Telia.

We believe that the largest impetus to growth will stem from the profound changes taking place within the telecommunications industries. Services brought about by the expansion of the intelligent network such as Virtual Private Networks call forwarding, itemised billing ,area number calling, etc. should add significantly to the Group's revenue stream in the future. In the short term, growth rates are likely to be slow but we expect this 'Software functionality revenue' to accelerate by the end of the decade. Data Communications should grow by between 20 - 25% through the implementation of Metropolitan Area Networks and ATM switches. ISDN revenues should also make a significant contribution by the end of the decade. We also expect bundling of services and the provision of special packages to business customers. We would also not be surprised if the organisational structure of the company is reformed to reflect the market driven nature of the industry. We would point out that Telia has one of the most advanced networks in the world with one of the largest traffic flows.

Technological changes should lead to a proliferation of new services

International Calls - minutes and revenues (all estimates)

	1993	1994	1995	1996	1997
Outgoing mitt	683	694	707	718	726
Incoming mitt	617	640	672	699	727
International traffic revenue	**4,832**	**4,778**	**4,675**	**4,580**	**4,451**

Source: DB Estimates — Deutsche Bank Research

Competition

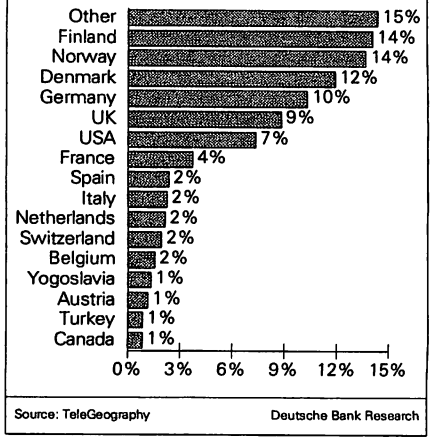
Sweden, along with New Zealand, is the world's most open network

Sweden, along with New Zealand, have the most open telecommunications markets in the world. This means that Telia has been exposed to competitive forces before most European companies. As rebalancing has not yet been completed (around 70%), a greater part of the network is under threat as a result of the "higher" non re-balanced tariffs. It is, therefore, somewhat surprising, that competitors of Telia do not have a higher market share in conventional telephony. However, Telia sees its market share in voice telephony declining to around 60% in international and 80% in domestic by the end of 1998 from around a reported 95% in local and trunk and 90% in international in 1994.

The company claims that three types of companies are trying to penetrate the Swedish market: a) traditional telecom operators such as France Telecom and BT, b) local companies with foreign telecom operators as minority partners e.g. Swedish based Tele 2 owned (40%) by Cable & Wireless and Kinnevik and c) utilities such as Swedish Railways, and electricity boards. It is worth noting that Hermes, a company owned by the major rail operators in Europe and a George Soros company, is planning to build a pan-European crossborder fibre-optic network alongside the railways of Europe.

It is, however, not suprising in the open market of mobile telephony that the two competitors have captured market share and more importantly stimulated market growth.

Sweden's largest telecommunication routes (1993)



Source: TeleGeography — Deutsche Bank Research

Competition is good for telephony! (Mobile telephony will be discussed in greater detail in a subsequent chapter).

Tele 2 which launched a switched international telephone service in Sweden in March 1993 is now rapidly stepping up its campaign to penetrate the Swedish market. It claims to have a 10% market share of the total Swedish market share for international calls with around 10 - 20% in some areas. In Stockholm, Tele 2 has reportedly installed two fibre-optic rings to connect businesses directly to the network. Its marketing based on price seems to be successful as this newly formed company has attracted around many of Sweden's 50 largest corporate clients including Handelsbank, the insurance company Trygg and the Swedish State broadcasting authority.

Tele 2 follows Cable & Wireless's UK subsidiary Mercury Communications in its approach to customers. Large business customers are provided with direct links while residential and small business customers access Tele 2 directly via Telia's network by dialling a 007 prefix on their telephones. Tele 2 is now focusing on the medium business segment and aggressively pursuing the long distance telephony market. Its revenues were SEK 497 m in 1994. MFS of the US is also installing self healing fibre-optic rings in Stockholm similar to those operational in London and Frankfurt. It will not surprise us if it also takes market share in the business customer segment from Telia.

Breakdown of minutes of Telephone Traffic (MiTT by origin 1992 and 2,000)

Regions	1992	2000e
Europe	48.5%	45.2%
Asia	15.6%	18.9%
S. America & Caribbean	4.6%	4.5%
N. America	26.8%	26.7%
Africa	2.4%	3.0%
Oceania	2.1%	1.7%
Total	41bn mts	79bn mts

Source: Company Reports — Deutsche Bank Research

Competition is Sweden will increase

Other competition

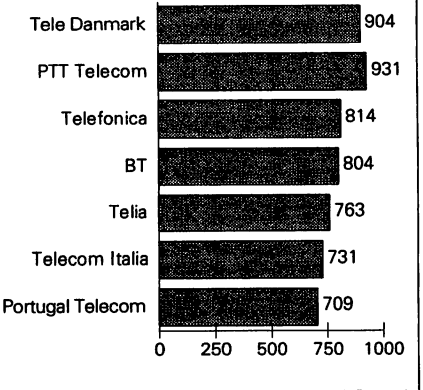
A US reseller Fonotel has won a licence to offer a full range of services over leased lines. France Telecom and BT have also achieved some success winning contracts from the Swedish authorities. France Telecom is planning to invest SEK 500 m in the next five years in Sweden in addition to the FRF 140 m previously invested through its subsidiary Transpac in Sweden.

From conventional and new companies

In response to this competition Telia's international resale agreements with the UK, Canada and Australia forms an important part of its strategic response to threats to Telia's profitable revenue growth. For example, Telia, having received an International Simple Resale licence (ISR) from the UK government, is planning to offer international calls at rates cheaper than those it offers to its customers in Sweden. US private resale market is growing much faster than switched international calls. If that example can be extrapolated to Europe and Sweden it should bode well for Telia's future. These tactics should somewhat compensate for loss of market share through competition.

The improving economic climate in Sweden has been responsible for a continuing improvement in performance. Traffic revenue grew by 4.8% in 1993 and 1.4% in the first half of 1994. Traffic volume, however, grew by 7.0% in the second half due largely to a strong increase in traffic to mobile telephone customers. Despite a neutral readjustment of tariffs at the beginning of 1994 (aimed at rebalancing

Revenue per line (USD) 1994



Source: Company Reports — Deutsche Bank Research

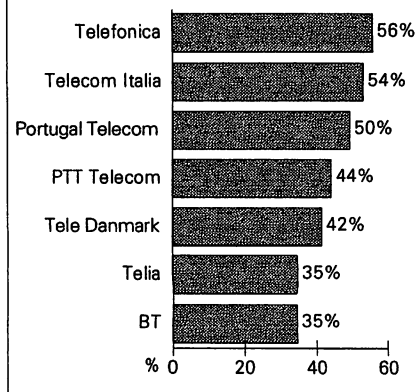
which led to a cut in international and trunk exchange and an increase in domestic and rental charges) - prices have fallen faster than expected. It could be concluded from the above statistics that price falls were in fact averaging around 3 to 5% per annum. Undoubtedly, there are also price elasticities working but these are often masked by other factors. It is noteworthy that both charge units and minutes have been increasing steadily over the last few years.

Another contributor to profitability is international revenue. The evolution of international and cross border traffic will have an important bearing on a Telecom Operator's future profitability. We believe that demand stimulation (through for example aggressive marketing and price competition) and the development of new services should be responsible for a new surge of growth in the late nineties. Telia, either in its own right or through Unisource, should continue to report high levels of profitability in international telephony despite competition and loss of market share. AT&T's performance in the US after the break-up of the Bell network could be cited as an example. We could also point to new centres of destination and organisation for international telephony which should stimulate growth. We believe that international resale will apply to most developed markets which should stimulate growth and benefit companies such as Telia which had the advantage of operating in markets which were in the forefront of liberalisation.

It is worth noting that revenues per line and employee in comparison with other telecom operators are low. This is in part due to the general lower level of tariffs prevailing in Sweden but also maybe atributable to less focused marketing management. This has also led to lower EBDIT margins in comparison with other operators. We expect to see both revenues per line and employee to improve due to lower staff numbers and increased operating efficiencies. Marketing as always remains the crucial factor.

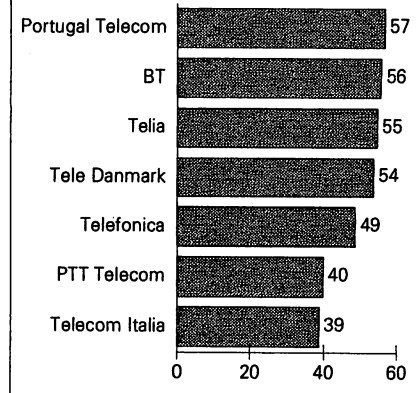
In Telia's case as with other operators there are two principal factors which are improving the profitability of its network services division . These are a) cost reduction and b) demand stimulation. We expect Telia to continue to improve operating efficiencies as discussed earlier and in the section on financial analysis, but, *in our view, Telia's future may very well depend on how quickly it becomes a market focused organisation.* We expect operating margins to remain at around 23% in the near future on a sales increase to SEK 25,417 m in 1995 and SEK 26,260 m in 1996. Margins in Network Services are sensitive to overall Group profitability as growth by a single percentage point can add 5% to operating profit. Global economic growth and multi-media traffic in the late nineties should drive telephone operators to new and higher levels of profitability.

EBDIT Sales (%) 1994



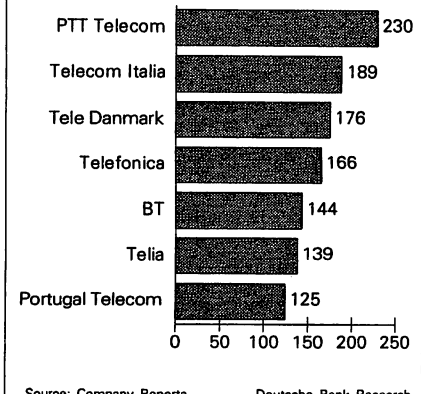
Source: Company Reports Deutsche Bank Research

Employees per 10,000 lines 1994



Source: Company Reports Deutsche Bank Research

Revenue per employee (USD 000's) 1994



Source: Company Reports Deutsche Bank Research

The Telecom Services Division

The Telecom Services division markets:

a) telecommunications equipment to business and residential customers

b) telephone services on behalf of the Network services division and

c) data network services on behalf of Unisource Networks

d) telecoms services to large corporate accounts through Telia Megacom.

Marketing of equipment is probably low margin and cyclical. Competition is fierce as manufacturers have their own distribution channels. Furthermore, revenue increases are a function of GDP growth and therefore cyclical. In order to grow the market new sales channels have been developed e.g. call centres were provided for companies in a cost effective manner; trial shop franchises have been introduced. These are all attempts to increase the number of distribution channels. The most successful of these is Telia Megacom which continues to expand strongly (see below). Marketing of telecom services is a growing activity, in particular in the business customer segment and in data communications. Margins may be flat or even declining but this is a core activity as it is the marketing arm of Telia and as telecommunications are becoming market-led its brand or image is established by this division. We expect slow growth in profitabilty from this segment. As Unisource is in its start-up phase, marketing of its data communications products and services is probably loss making but should recover when Unisource becomes established.

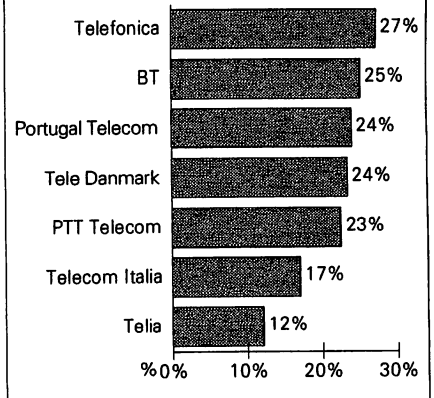
We expect a small increase in profits albeit from a relatively modest base after a decline in operating profits and margins in 1994; start-up costs at MegaCom and other areas are inhibiting profits growth. New services and markets are beginning to counteract a sales decline in some of the traditional areas of equipment sales/services. These would include Virtual Private Network Services (VPN's) as well as cordless private exchanges based on the evolving Global DECT standard. Mobile terminals not unexpectedly continue to report sound growth. Furthermore, software services such as caller ID are beginning to contribute to revenue growth. However, it is Telia's segmented marketing strategy - namely the formation of Telia MegaCom which is now making the biggest impact on profitability. We expect that after the initial start-up phase Unisource should be making a similar contribution to profitability.

Telecom Services Division

(SEK m)	1992	1993	1994
Operating revenues	8,034	8,084	8,524
Income after deprec.	515	305	198
Net margin, %	22	23	3
Investments	186	92	154
No. of employees		6,776	6,783

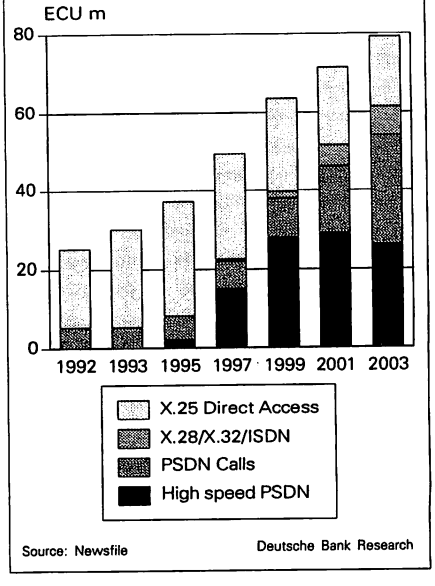
Source: Company Report — Deutsche Bank Research

Operating profit/sales (%)



Source: CIT Research — Deutsche Bank Research

Projected growth of PSDN service revenues in Sweden, 1992 to 2003



Source: Newsfile — Deutsche Bank Research

Telia MegaCom

Telia MegaCom markets telecommunications and data communications, telecom equipment and support to around 80 major companies and organisations. Telia MegaCom provides one point of contact for its major accounts for billing, maintenance and servicing. Its profits will show rather large steep increases as it begins invoicing for all network services.

MegaCom faces competition (described earlier) from BT, France Telecom and Tele 2. We expect, as the markets open up even further and the industry becomes more software driven that new entrants from the world of Information Technology e.g. EDS, IBM etc. will enter the market more aggresively. 1994 was a water-shed year for Telia MegaCom and the Telecom Services Division. We believe it is the first sign that its market segment strategy is working. Orders received jumped 25% and operating revenues by 55% setting a new platform for growth. MegaCom's strategy to focus on customer specific solutions is having a strong impact. Not surprisingly data communications is achieving the highest growth reflecting the business focus of this division. Important contracts were signed with large customers including STORA. This will be the precursor to further contracts from large account customers. We expect operating revenues to increase slightly but operating income should grow at a faster pace.

Telia MegaCom

(SEK m)	1992	1993	1994
Operating revenues	297	2,569	3,995
Oper. inc. after depr.		82	273
Gross margin, %		5	7
Investments	11	4	3
No. of employees	366	504	681

Source: Company Report — Deutsche Bank Research

Megacom, an important contributor to Telecom Services profitabilty

Telia Promotor

Telia Promotor markets customer specific tele-communications and data communications products using the technological base of the Telia Group. An internal division, it supports Telia MegaCom and the 8 regions of the Group. For example, voice response and text to voice products are marketed by the Group. As described earlier Telia Promotor faces competitive pressures and therefore margin declines. Higher profit growth should be recouped by growing sales.

Telia Promotor

(SEK m)	1993	1994
Operating revenues	88	113
Income after financial items	8	6
Net margin, %	9	5
Investments	16	5
No. of employees	21	157

Source: Company Report — Deutsche Bank Research

Telia International

Telia International's activities have been restructured but until the end of 1993 it was responsible for four main areas:

a) Managing Telia's participation in Unisource.

b) Establishing alliances and taking stakes in foreign telecommunications, mainly in the Baltic region.

c) Marketing and developing international services for businesses and residential customers in domestic and international markets. These services have been typically developed by the regional Groups and MegaCom.

d) Marketing and planning international networks on behalf of the Network Services Division.

Telia International

(SEK m)	1992	1993
Operating revenues	391	212
Income after financial items	61	16
Net margin, %	16	8
Investments	55	113
No. of employees	174	138

Source: Company Report — Deutsche Bank Research

The last two activities have been transferred (in the second half of 1994) to the Network Services Division. We believe that Telia's participation in foreign telecom operators will be a strong contribution to profitability albeit on the "associates line". Unisource and prospects for its future have been discussed. However, there are also strong synergy benefits from its East European and Baltic relationships. North Europe extending from the Atlantic to the Pacific taking in the Baltic regions as well as the former Soviet Republics could form a strong identifiable region.

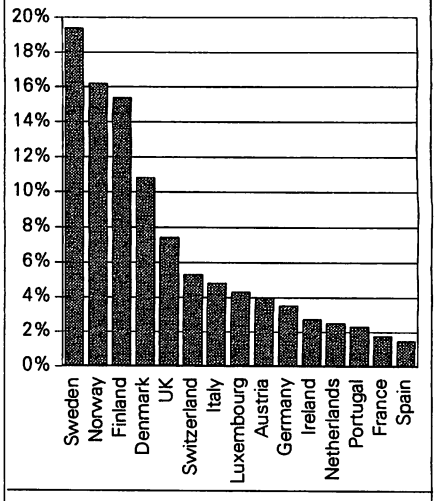
The decline in profitability in 1993 may be attributed to start-up costs. We understand that Estonia and Latvia mobile telecom operations are now profitable.

Mobile Communications - Telia Mobitel

Mobile Communications is the fastest growing segment in telecommunications. It is worth repeating that Sweden has the highest penetration in the world. Telia Mobitel is the clear Swedish market leader in mobile telephony services having more than 900,000 subscribers on its two analogue networks and 300,000 subscribers on its digital GSM network by the end of May 1995.

According to most international researchers mobile subscribers will account for more than 30% of the estimated 2 bn mainlines expected by the end of the year 2000. But mobile communications is not merely about cellular it is also about other forms of mobile services including paging, and mobile data.

Western European Cellular Penetration, June 1 1995



Source: Company Reports Deutsche Bank Research

The Company

Telia Mobitel's activities are concentrated on a) mobile telephony, b) contracted services, c) mobile data, d) personal paging and e) mobile services. Mobitel says its objective is to satisfy its customers needs for accessibility and communications in Sweden while at the same time achieving high returns on investment and sales.

Products

Comprehensive range of services offered

Mobile Telephony: three systems are offered, NMT 450 the oldest service at a lower frequency of 450 MHZ, NMT 900 and GSM also at around 900MHZ. NMT is also used for ship-to-shore communications in coastal waters. Coastal communications are also provided by radio stations using VHF long wave, medium and short wave frequencies. They largely handle manually operated traffic to shipping in international waters. It is also involved in sea rescue. Telia Mobitel using the Immarsat Satellite systems A & C provide telephony for civil aviation throughout the world.

Telia Mobitel is adopting a convergent fixed/mobile network strategy

Telia is now planning a uniform network for both mobile and fixed networks as they are beginning to converge. As Swedish mobile telephone operators are now adding 700,000 subscribers per year, nine out of ten Swedes will probably own their wireless handset by the year 2000. Furthermore, the lucrative business market is becoming mobile i.e. more and more executives carry their own terminal.

Telia's long term aim is to provide common billing and one number to access Telia's networks.

The networks will become more integrated as they make common use of the Intelligent network functionality inherent in both fixed and wireless networks.

At present Telia markets "Telia Persona" which allows users to roam between the fixed and mobile network. Telia Mobitel is expected to launch a GSM service that is aimed at encouraging corporate executives to replace their fixed telephone connection with wireless. Regulation, however, remains the biggest obstacle to Telia's plans.

Marketing

Marketing, NMT...

Although both NMT 450 and NMT 900 have been in operation since 1981 and 1986 respectively they have been continuously updated. As the systems have evolved quality has steadily improved. NMT 900, we believe, has the quality of service and a lot of thefunctionality provided by the all-digital GSM.

... and gradually migrating the user to GSM

The advantages of GSM are a pan-European roaming capability which is useful to the business customer (and maybe global coverage); security and finally a more comprehensive range of services can more easily be accommodated on digital telephony. Customers remain loyal to NMT because it is still the best solution to a customers' needs especially relating to coverage in rural areas. Because the full range of GSM services have not as yet been offered to the Swedish customer there is less incentive to migrate to what is perceived at the moment as a lower featured service. That situation is gradually changing.

Mobile Communications in Sweden (key statistics)

Operator	System	No. of subscribers	Launch date
Telia Mobitel	NMT-450	260,464	10/81
Telia Mobitel	NMT-900	730,729	12/86
Telia Mobitel	GSM	332,000	11/92
Comviq	Comvik	9,396	8/81
Comviq	GSM	279,188	9/92
Europolitan	GSM	88,260	9/92

Source: Mobile Markets — Deutsche Bank Research

In GSM, call transfer/call diversion, call waiting, GSM message service (works like a built-in pager) are free of charge in Sweden. Call charges to Telia's fixed network are the same for GSM and NMT i.e. SEK 3.45 per minute normal rate and SEK 2.30 off peak. (Prices for NMT ROD are different). If a phone is used for more than three minutes Telia recommends 'Pro' is used.

The customer will then have a full range of services which should be accordingly priced. Indeed pricing tactics feature strongly in Telia Mobitel's present policies. It is worth noting that the GSM tariffs are cheaper than Classic and Pro which suggests to us that, at least, Telia Mobitel's migration strategy has begun.

Targetting the low user customer...

NMT Privat was launched in the autumn of 1992 and aimed at the low user private customer. It exceeded all expectations initially forecast by the company.

... through subsidies

The company's strategy to have 50% of the GSM market proved expensive in 1994. We estimate that around SEK 500 - 600 m was spent to attract residential customers to its network. The high penetration achieved by Telia means that in the longer term the network can support a large diversity of software services which should typically carry high margins (offsetting a loss of market share).

Mobile Data

Data - an important part of Mobitel's strategy in wireless

Telia Mobitel has several systems for mobile data communications within three areas of application. Fleet management, Telemetry and Mobile Office.

Mobitel operates Mobitex, developed by Telia and Ericsson for its mobile data communications business. It seems to be establishing itself as the de facto European standard for transferring data cheaply and efficiently.

There are around 8 mobile networks in operation within Europe compared to the two DataTac networks developed by Motorola.

... aimed at special market niches

Mobitex networks like cellular telephony have base radio stations, area switches, Network Control Centres and links between these network modes. Mobile communications are transmitted between the base radio station and mobile units in the form of packetised data on the 80 and 400 MHZ bands respectively.

Mobitex 80 is used for Fleet Management, featuring vehicle-mounted units. Mobitex 400 operating at 400 MHZ is designed for hand-held terminals using standard applications. This is the system which is being introduced in Europe where roaming agreements should be introduced in 1995.

Mobitex is a dedicated mobile data network offering a cost effective solution for special user groups. It is worth noting, however, that both NMT (via a modem) and GSM allow data transmission albeit at a higher price.

Mobitex had around 12,000 subscribers at the end of 1994 and it is planned that it will be 30,000 by the end of 1997. We believe the margins are not significantly high. Its importance lies in its complementarity to mobile telephony.

Paging

Paging - a significant complement to Mobitel's cellular activities ...

Mobitel offers three paging systems, MBS, Minicall and Minicall Europe which is based on the ERMES pan-European standard. MBS is a numeric service with nationwide coverage. Minicall can be categorised into three segments; Minicall tone, a tone-only service, Minicall Numeric, and Minicall Text can be linked by a PC or PABX. Ermes will operate under the Minicall Europe brand name and its purpose is to serve the business customer in international markets. ERMES also offers pre-programmed and standard messages, as well as transferred group paging.

... also aimed at the low user

In a mirror image of its cellular telephony strategy Minicall Private launched a private service which attracted a great deal of attention. Minicall is a paging service without connection charge, subscription or usage charges. The calling party pays around 6 times Telia's standard charge while the user pays only the purchase price of the unit. Telia's distribution stategy is via retail outlets. This approach has reportedly been so successful that it has stimulated interest in existing radio paging services. Indeed, the flow of customers was restricted by a lack of capacity.

Western European public radio-paging subscribers (May 1995)

Country	Subs 1/05/94	Subs 1/05/95	Yoy (%)	Pntn** 1/05/95	Country	Subs 1/05/94	Subs 1/05/95	Yoy (%)	Pntn 1/05/94
Austria	90,300	101,113	12.0	1.3	Luxembourg	7,009	6,680	4.9	1.8
Belgium	212,575	237,970	12.0	2.4	Netherlands	406,845	391,626	3.9	2.7
Denmark	61,382	65,315	6.4	1.3	Norway	130,625	123,000	6.2	3.0
Finland	45,596	47,265	3.7	0.9	Portugal	50,900	40,100	26.9	0.5
France	363,249*	314,010	-13.6	0.5	Spain	170,000	125,000	35.8	0.4
Germany	467,728	647,118	38.4	0.8	Sweden	285,187	191,102	49.2	3.3
Greece	26,779	28,284	5.6	0.3	Switzerland	105,400	83,606	26.1	1.5
Iceland	6,116	7,714	26.1	3.0	UK	796,000	744,000	2.8	1.4
Italy	222,362	215,398	-3.1	0.4					
Total						**3,640,394**	**3,245,582**	**12.16**	**0.96**

** Number of subscribers per 100 of population

Source: Mobile communications estimates

Deutsche Bank Research

The number of Minicall subscribers was nearly 200,000 at the end of 1994 compared with 139,000 a year earlier. 80,000 were Minicall Private which suggests that Telia's segmental strategy is working. The introduction of Minicall Private leads to a lowering of the revenue per subscriber to an estimate of around SEK 1,600 - SEK 1,800. We believe that Telia Paging generates revenues of around SEK 300 m. However, we believe that this activity is very profitable with operating cash flow margins of around 60%.

Paging also profitable

Telia Mobitel - Tariffs

Tariffs (SEK)	GSM	Privat	NMT Classic	NMT Pro	NMT Privat	NMT ROD (450)	Int'l Calls
Initial charge	300	0	300	300	0	875	-
Monthly charge	100	150	117	150	150	0	-
Charge per minute	2.90	6.00	3.45	2.90	6.00	12.94	2.90
Off peak							
2200-0600		-	1.15	1.15	-	1.44	1.60
at other times	2.30*	2.00	2.30	2.30	2.00	2.88	2.30

* For an additional SEK 20 a month
- International calls on GSM are charged at the above rate as per international tariff which ever is the higher.

Source: Company Reports

Deutsche Bank Research

Financial Analysis and Valuations

The key variables in any analysis of a mobile communications company are revenue per subscriber and operating cash flows. Churn rates (the number of subscribers leaving the network) also play an important role when estimating growth rates. In the absence of public information we give below a valuation and some key statistics of Telia's mobile operations which are based on experience of other mobile operations and industry contacts. Extrapolating from the German and UK experience and given that the OECD basket of mobile telecommunication tariffs states that the total charges in Germany, the UK and Sweden

Mobitel Financial Review (1990 - 1994)

SEK m	1990	1991	1992	1993	1994
Statement of Income					
Operating revenues	3,320	3,831	4,355	4,609	5,247
Operating expenses	1,765	1,958	2.349	2,783	3,830
Operating income before deprec.	**1,555**	**1,873**	**2,006**	**1,826**	**1,417**
Depreciation according to plan	473	458	726	940	954
Operating income after depreciation	1,082	1,415	1,280	886	463
Operating income after depreciation & financial revenues	1,092	1,423	1,351	927	493
Pre-tax income	**874**	**1,252**	**1,173**	**753**	**406**
Balance Sheet					
Current assets	899	1.070	905	826	1,214
Fixed assets	2,736	3,273	2,834	2,666	2,452
Total	**3,635**	**4,343**	**3,739**	**3,492**	**3,666**
Liabilities and equity	**3,635**	**4,343**	**3,739**	**3,492**	**3,666**
Key ratios					
Return on total capital, %	31.2	35.7	33.4	25.6	13.8
Profit margin, %	32.9	37.1	31.0	20.1	9.4
Capital turnover, times/year	1.0	1.0	1.1	1.3	1.5
Contribution margin ration,%	46.8	48.9	46.1	39.6	27.0
Miscellaneous					
Investments	721	981	712	765	734
No. of employees	1,584	1,547	1,838	1,972	2,112

Source: Company Report — Deutsche Bank Research

expressed in purchasing power parities were USD 1,418, USD 1,267, and USD 814 respectively, the revenue per subscriber for Telia Mobitel should be in the range of SEK 5,000 to SEK 5,300 from around SEK 5,800 in 1989. Although the pace of growth may not be slowing down, revenues per subscriber will trend downwards as more low-user subscribers (e.g. NMT Privat) join the service. We believe that churn rates are in the order of 17 to 20% as the direct sales or single tier approach means that customers are probably more closely vetted.

Revenues per subscriber are trending down

If the statement of income is considered for the years 1989 - 1994 there has been a steady improvement in EBDIT until 1992. The dip in both operating cash flows and pre-tax income to SEK 1,826 m and SEK 753 m in 1993 respectively may be attributed to a change in depreciation policies which meant there was a write-down as well as an additional depreciation charge. This led to a large increase in depreciation as a percentage of sales in 1993. In 1994 depreciation reverted to a more normal level.

Decrease in profitability in 1994 due to cash incentives paid to new subscribers

Europolitan - focusing on business user

However, 1994 was a critical year for the company. Telia Mobitel made a determined effort to capture 50% of the total GSM market. Telia Mobitel and Comviq concentrated on expanding into the consumer market while Europolitan focused on attracting business and high users; acccording to Mobile Communications 3% of Europolitan subscribers are on its low user GSM tariffs while the corresponding figure for Mobitel and Comviq is over 50%. From May until December general commissions were paid up to SEK 3,000 per connection. This resulted in a 37.6% increase in operating expenses to SEK 3,830 m. As a result operating cash flow fell to SEK 1,417 and pretax to SEK 803 m. We expect that with a decrease in commissions to around SEK 1,000 per subscriber, the rate of growth in operating expenses will slow down. The revenue per subscriber and consequently the rate of growth in revenues should also slow down. In 1994 Telia Mobitel also benefitted from two new factors a) lower accesss charges and b) lower cost of leased lines. We understand that the cost savings on an annual basis amount to SEK 200 m.

However, profits should revert to 92/93 trends from 1995

We expect the underlying sales growth to be around 8 to 10% p.a. We believe that, initally, operating margins will be under pressure. In the medium term, Telia Mobitel should benefit from high level of penetration in Sweden through the provision of software services. When the networks converge we expect the same degree of business segmentation as in the fixed line business (regulations permitting) - which should lead to additional revenue streams.

Telia Mobitel Valuation

Value of Telia Mobitel around SEK 20 bn

The valuation of Telia Mobitel may be calculated by focusing on operating cash flows (EBDIT). We estimate that EBDIT in 1995 will be around SEK 2.0 bn followed by SEK 2.2 bn in 1996. We would value a mature cellular company somewhere between 10 and 14 times operational cash flow less net debt. This places Telia Mobitel at between SEK 19 bn and SEK 27 bn assuming a net debt of around SEK 1 bn. We would incline towards the lower end of the valuation as revenues per subscriber and margins are below the international average. Our preferred value is somewhere around SEK 20 bn which of course would only be released if it is partially floated on the market.

Other Issues

Frequency Capacity

Swedish Mobile Communications running into frequency capacity problems

The Swedish Government has asked Telia Mobitel to give up 1.8 MHZ of its NMT 900 frequency allocation in Sweden. We understand that this was at the request of its two competitors, Comviq and Nordic Tel who will receive two thirds of this scarce resource (i.e. 0.6 MHZ each). All operators which have GSM allocations of 4.8 MHZ are running short of capacity in the capital, Stockhom. The extra 0.6 MHZ will not meet the long term capacity requirements of any of the operators. They hope to receive part of the DCS 1800 MHZ frequency allocation that the

Government has put out to tender. Telia Mobitel has anticipated a capacity crunch in the middle of 1996 despite its installation of micro-cells in Stockholm. If Telia Mobitel does not receive DCS 1800 frequencies it may be forced to adopt half rate coding which may lead to deterioration in quality.

According to Mobile Communications Europolitan expanded its GSM subscriber base by about 15,000 subscribers in the first four months of the year compared with 92,000 for Telia Mobitel and about 114,000 for Comviq. However, Europolitan claims that its share of tariff revenues was about 25% as it has focused on the high user (briefly described earlier).

OECD Basket of Mobile Communications Tariffs, January 1995

	Usage/Fixed	Fixed Charges	Usage charges	Total
Australia	1.78	319.85	568.41	888.26
Austria	1.94	385.71	750.07	1135.78
Belgium	1.79	412.87	740.71	1153.58
Canada	1.30	383.52	499.22	882.74
Denmark	4.45	108.86	484.87	593.72
Finland	4.21	105.35	443.29	548.64
France	1.00	929.56	928.91	1858.47
Germany	2.68	385.62	1032.94	1418.56
Greece	N/A	N/A	N/A	N/A
Iceland	3.30	97.97	323.23	421.20
Ireland	1.66	390.07	646.74	1036.81
Italy	1.54	435.23	670.29	1105.52
Japan	1.44	630.02	904.51	1534.53
Luxembourg	1.38	626.57	862.91	1489.48
Netherlands	2.63	295.88	778.27	1074.15
New Zealand	1.55	534.22	826.57	1360.80
Norway	3.13	175.54	549.30	724.84
Portugal	1.80	606.11	1089.46	1695.57
Spain	1.64	523.81	857.71	1381.52
Sweden	4.33	152.63	660.82	813.46
Switzerland	1.34	349.72	468.34	818.07
Turkey	5.98	228.23	1365.47	1593.70
UK	1.55	496.34	770.83	1267.17
US	2.34	496.07	1160.87	1656.94
OECD average	1.92	394.34	755.81	1150.15
(Telmex included)		680.60	Number of calls per year	
Mexico (Telmex)	3.54	386.84	1367.82	1754.66

Source: OECD — Deutsche Bank Research

Svenska Kabel-TV (SK)

SK markets and distributes TV entertainment and other services on its own Cable TV network. SK is Europe's second largest Cable TV operator after Deutsche Telecom. It is the biggest in Europe in the Pay TV sector. SK has around 1,300,000 subscribers which is almost 65% of the market. The remaining 35% is divided between three private operators and is in the table alongside. However, the topography of Sweden does not lend itself to Cable TV distribution. Hence, satellite enjoys greater success. SK's principal is to concentrate on connurbations using satellite distribution as one distribution medium. SK's principal stategy is to stimulate usage by broadening this product offering and providing new services.

Svenska Kabel-TV Market Shares

(SEK m)	Homes Passed 1994	Homes Connected 1994
Svenska Kabel TV	2,000,000	1,300,000
Kabel Vision	485,000	250,000
Star-TV	199,000	120,000
SOL (inc Scandinet)	137,000	130,000
DTH	400,000	333,000
Remaining, inc SMATV	250,000	250,000
Total	3,471,000	2,380,000
No of res. homes	3,900,000	3,900,000
Share with satellite TV	89%	60%

Source: Company Report — Deutsche Bank Research

We believe that Kabel-Vision poses the greater threat to Telia and Svenska Kabel. Kinnevik which is the principal share holder of Kabel-Vision has a 60% stake in Tele 2, Telia's major long distance and international competitor. Kinnevik is also involved in TV channel "TV Sverige" as well as home shopping. Kabel Vision has also started providing data communication services attacking Telia itself. As Kabel-Vision's market share is relatively small and other applications have not been built up it has run into cash flow problems. We understand that a refocussing of its strategy has taken place and should report better results in 1995.

Kabel-vision and Stjarn TV provide the strongest competition to Svenska Kabel-TV

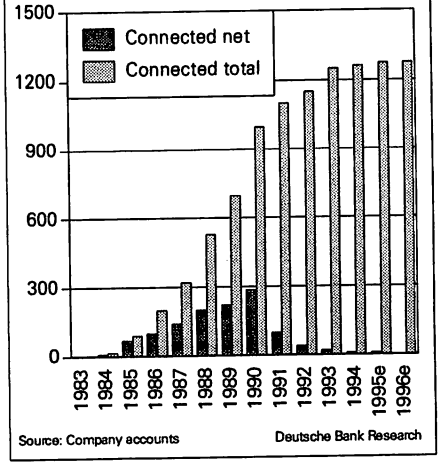
Stjarn TV (now owned by Singapore Telecom) Natet's principal strength is Stockholm where it has a switched star system. We believe that these three private companies report low profitability which could be enhanced by the provision of voice telephony. It would be relatively easy to do so as the UK, Sweden and Finland are currently the only markets in Western Europe to allow competitive provision of voice services.The bigger threat to Svenska Kabel will come from satellites. The impending battle from Nordic direct to the home market has moved a step closer with the start of test transmissions on the Sirius satellite. This system is in competition to the up and coming Norweigan led DTH service. The competition threat to Cable TV may not be as great as Cable TV uses satellite for head-end distribution.

Satellite poses a strong threat

According to CIT research Cable TV operators had revenues of under ECU 4 bn in 1992 (30m subscribers) which is forecast to rise to ECU 11bn by the year 2002. The history of broadcasting partially explains the very different levels of cable TV penetration in Western Europe. The relatively large penetration in Belgium, the Netherlands and Germany could be explained by public funding. In the UK it is a combination of voice telephony and cable TV in an open market which has resulted in huge growth and penetration in the relative short time span of two years. The UK has now almost 16 m homes connected with around 450,000 residential telephone subscribers and 50,000 business lines. Experience brought by the consortium leader, normally American telephone companies are one reason why the UK market is experiencing satisfactory growth.

Cable-TV growth in Europe driven by differnt factors

Household's connected 1983 - 1996



Source: Company accounts — Deutsche Bank Research

Strategy of Telia and Svenska Kabel in Multi Media

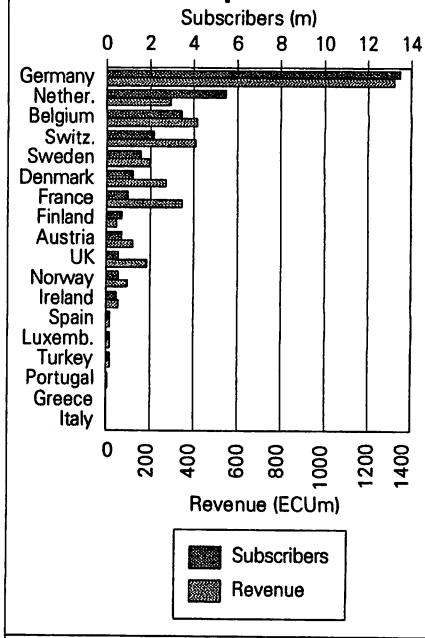
Given the present uncertainties surrounding Cable TV, Telia has launched a twin strategy to attack the Swedish multi-media market. It is building on its essential strengths which are a) the highest level of telephone penetration in Europe with nearly 70 main lines per 100 inhabitants or 163 lines per 100 households and; b) the largest market share in Cable TV with around 54% of the homes connected.

Telia has launched the first commercial European video-on-demand trial. It is using ADSL, Asynchronus Digital Subscriber Line which allows the transmission of digital data over existing twisted pair infrastructure achieving bit rates between 1.536 Mbps to 6.144 Mbps in the downstream direction. As a domestic quality VCR picture can be delivered by 2.048 Mbps using the MPEG (Moving Pictures Expert Group). Three VCR quality sessions can therefore be passed down a copper wire. Interactivity is also possible with HDSL (High Bit Rate Digital Subscriber Line) which therefore allows two-way video transmission. *By expanding the transmission capacity of copper wire enough to transmit TV signals effectively the need for fibre-optic or even coaxial cabling was bypassed. Telephone calls can even be made while watching a movie. This also bypasses the problem of cabling the difficult Swedish terrain.* A set top box at the consumer household allows the user to store films (thereby giving the consumer full feature capability of the video recorder) and access interactive services via a smart-card.

Svenska Kabel-TV has also launched 24 hour Video-on-Demand service to 500 homes in Stockholm (see diagram). The film library has around 50 to 100 films and users can select a movie either by telephone or using a remote control. Apparently there is a seven minute delay before the video is screened.

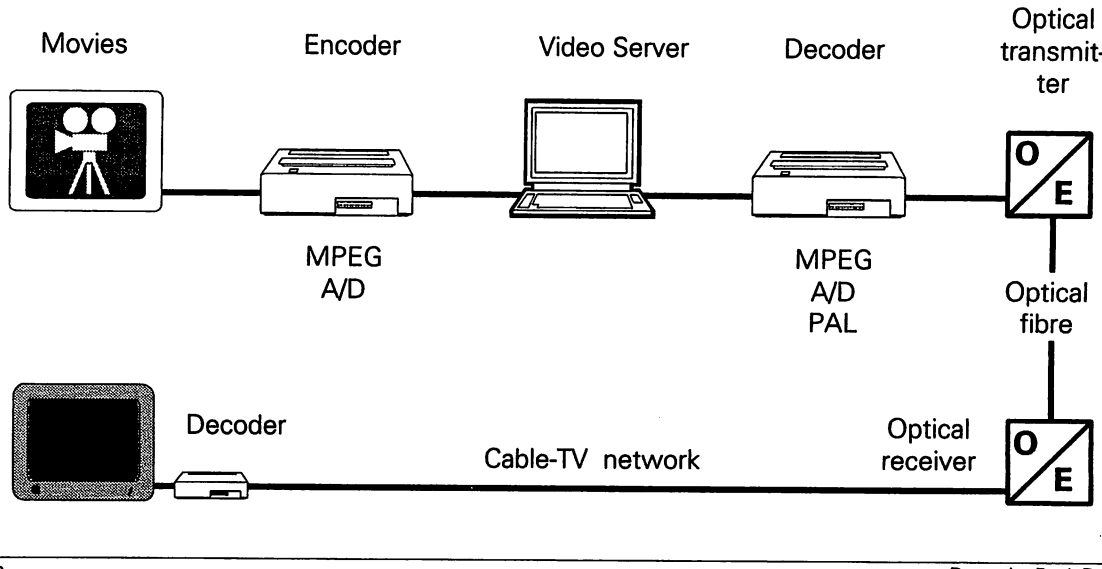
Two-pronged approach to Multi Media

Cable Subscribers and Revenue in Western Europe - End 1993



Source: CIT — Deutsche Bank Research

Video on Demand



Source: — Deutsche Bank Research

A inhibiting factor to successful deployment is the price of such a service. We believe it has to be under USD 200 per annum in order to attract the price-conscious subscriber.

In the meantime Svenska Kabel launched pay-per-view (PPV) trials which began in June 1994 in conjunction with SF Films. Subscribers are charged SEK 49 per movie and PPV service is expected to commence within the next few months to around one million homes. Svenska Kabel is now seeking contracts with more studios to provide for sufficient film rotation.

Svenska Kabel-TV Financial Statistics

Year End December	1991	1992	1993	1994
Operating Revenue	483	555	587	585
Operating income after depreciation	-157	-99	28	60
Earnings after financial items	-210	-126	15	68
Investments	276	87	44	68
Number of employees	380	277	234	219
Number of households connected	1,120	1,195	1,250	1,259

Source: Company reports — Deutsche Bank Research

Svenska Kabel-TV divided into three business areas

Svenska Kabel-TV is divided into three business areas.

a) Basic Business - aimed at property owners, tenant blocks (flats) and housing groups i.e. installing and maintaining a network. Subscribers normally take out a 10 channel basic subscription.

b) Enhanced Services - This is provided by a decoder-pay TV. There are 4 business areas 1) Movies 2) TV Channels such as BBC,CNN,Sky, Eurosport 3) Euro-mix such as Rai Uno (Italy) SAT 1, and 4) "a la carte" which mainly are Danish, Norwegian and Finnish items.

c) New Business Areas

Almost completed its programme of modernisation

SK has almost completed its basic network modernisation programme having spent over SEK 1.0 bn and is only now beginning to generate satisfactory profits. A significant advantage of this rather large programme is that little remains to be done. SK can benefit from the modern network and has a competive advantage in that it can market on quality; our understanding is that its three competitors have inferior networks. When Svenska Kabel invests in an interactive (two way) broadband network we estimate an expenditure of around SEK 300 m to 400 m which is likely to spread over three years. Furthermore, the average cost per household to deliver video-on-demand is around USD 1,000 to USD 2000 (SEK 15,000 to SEK 20,000).

Low consumer spending depressing profitability

However, reduced consumer spending and unemployment tends to keep the revenues per subscribers at a low level. New services are somewhat offsetting this lower spend but it should be a few years before revenue growth accelerates. Profits however should continue to grow befitting from lower restructuring costs and improvements on operational efficiencies.

The churn rate is approximately 30% and penetration level of Pay TV is around 11%. However, the revenue per subscriber at around SEK 70 to 90 per month is below international norms compared with countries such as the UK and France. A strong increase in marketing should lead to more than a proportionate increase in revenue and a benefit to the income statement.

Long term threat to Telia if Cable TV activities separated by EC regulation

A threat to Telia would occur if the EC enforces a separation between Cable TV and the dominant telephone operator so that the former can provide voice telephony competition. The scenario is unlikely. It seems probable, however, that SK will diversify into other European markets building on its one franchise in the UK. We think it would be a significant contributor to the Group's profitability when the multi-media industry records accelerating growth rates. It should also be noted that there are synergies with TeleMedia. Although Telia Networks is conducting trials on video-on-demand our view is that Cable TV is complementary to the supply of business services via a telephone line. Telia has the option of using its PSTN network for business or its own Cable TV network for entertainment. The strength of Telia is that it has successfully demonstrated its capability in both areas.

TeleMedia

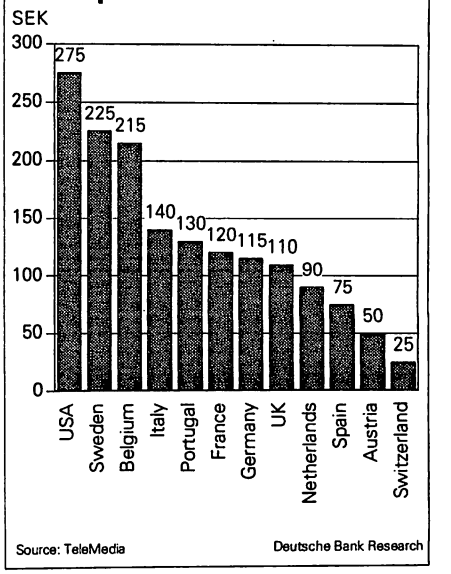
TeleMedia was formed in 1991 by the amalgamation of the Televerket operations involving number information in printed or electronic form. The core business of TeleMedia is the publication of directories. TeleMedia has expanded out of Sweden into Finland, Norway, and Denmark.

TeleMedia has enormous potential as most directories are being transcribed onto optical disks. This increasing trend lends itself to electronic communication and, in the longer term, to lucrative, interactive services.

TeleMedia is one of the most successful companies within the Telia Group. Indeed its net margin of 10% which should continue to grow is the highest among the Group companies. When it transcends the divide between paper publishing into electronic media we expect a concerted programme of international diversification. We would also not be surprised if TeleMedia becomes a quoted (but majority owned Telia subsidiary) company in the early 21st Century. TeleMedia's organisational structure is described in the Organigramme below.

TeleMedia's business is simply the publishing of directories and benefits financially from the sale of advertising space therein. It is helped by the high degree of expenditure on advertising in Sweden, among the highest in the world. Its products also include the Nummerguiden electronic telephone directory as well as consumer orientated databases and directories for specialised groups such as yachtsmen, motorists and golfers. TeleMedia's new range of products will largely be an extension of its products in electronic form.

Directory Advertising - Per Capita 1993



Source: TeleMedia — Deutsche Bank Research

Tele Media - a solid cash generating activity...

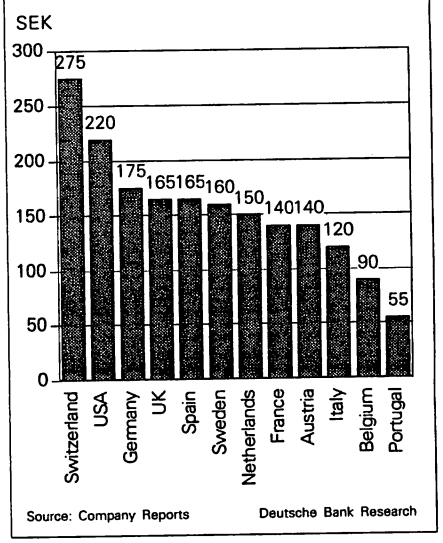
... helped by the high level of advertising spend in Sweden

Markets and Products

The global market for directories has been estimated to be around SEK 150 bn a year of which SEK 1.8 bn is in Sweden. From another perspective this market is around 7% to 8% of the Swedish advertising market of approximately SEK 25 bn. With around SEK 1.55 bn of sales in Sweden it could be concluded that TeleMedia has around 80 to 85% of the market. Three business areas contribute to around 90% of the TeleMedia's Group revenues a) Din Del, Sweden's local directory 4.7 m copies of which are printed every year divided among approximately 200 editions and the direct mail package Din Del Direct, b) Public Media which markets products for the regional market. The main product is the telephone directory published in 15 m copies and 28 editions corresponding to national trade regions, c) Info Media which main product is the Business Directory containing full details of 175,000 companies.

It is worth noting that these directories are distributed free to users and are financed entirely by advertising revenues. However, in order to become more market focused and save costs the above mentioned three areas have been consolidated into one company Telia Reklam.

Advertising - Per Capita 1992



Source: Company Reports — Deutsche Bank Research

Strategies

TeleMedia's goals are as follows:

- to consolidate its dominant domestic market and;
- to move into international markets through acquisitions and alliances.

Strategies would include a) moving out of paper which now constitute 93 to 95% of telephone directories into electronic media such as CD-ROMs, b) diversifying into product areas such as the "Golfers Guide" and "Visiting Yachtsman" c) entering new markets with national geographic and/or trade related ties to Sweden e.g. the Baltic countries, d) developing projects in international markets where TeleMedia can utilise its competence as a primary competitive tool, either on its own or in co-operation with local parties e.g. US West and Mauritius Telecom.

Business Policies

TeleMedia Reklam AB is also concentrating on transcribing directories on CD-ROM. Furthermore, TeleMedia Interactive is diversifying into electronic communications. It is producing products for Internet, catalogues for home shopping and the earlier mentioned Golf Guide and Visiting Yachtsman handbook. TeleMedia East which focuses on Eastern Europe with traditional directory products has been increasingly successful. Both Estonian and Latvian divisions are reporting high levels of prosperity despite being in operation for only a short period of time i.e. from 1992. Finland which accounts for around

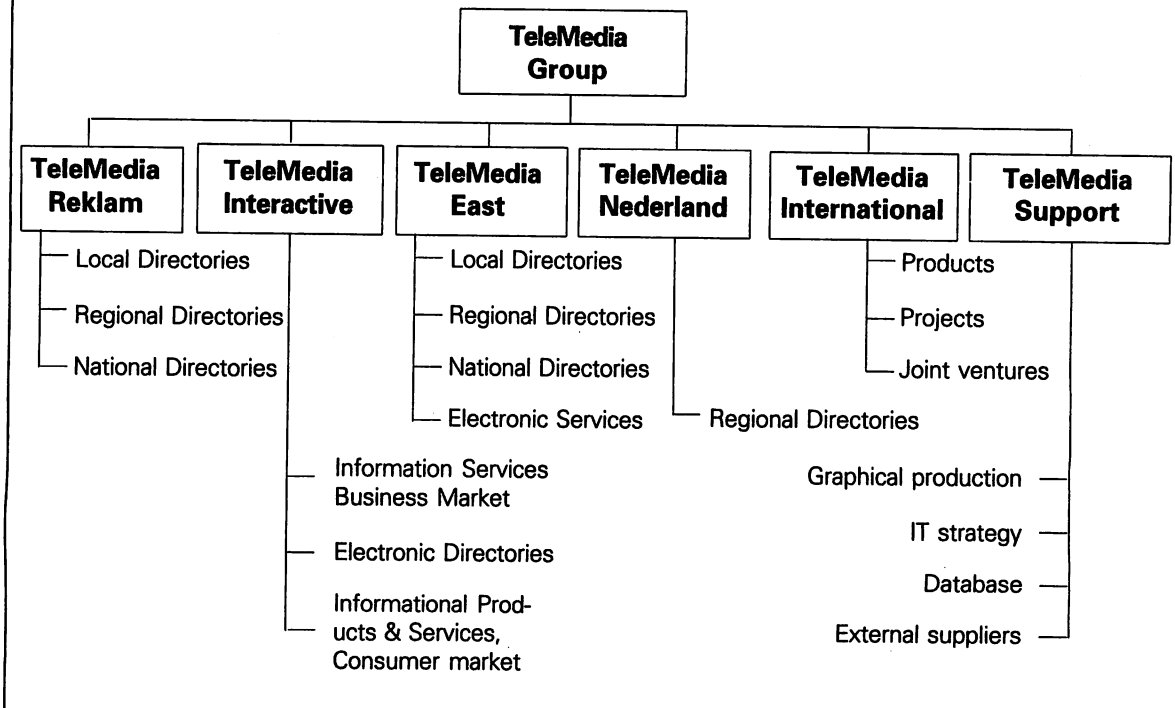
Consolidated Income Statement

SEK m	1993	1994
Invoiced sales	1,788.3	1,822.1
Cost of production, sales and administration	-1,358.7	-1,356.1
Royalties to parent company	-186.8	-188.8
Share of income in associated companies	1.5	-0.4
Operating income before depreciation	244.3	276.8
Planned depreciation	-66.7	-62.4
Operating income after depreciation	177.6	214.4
Interest income	37.9	50.3
Interest expense	-36.3	-10.6
Exchange differences	0.5	-0.6
Income after financial income and expense	179.7	253.5

Source: TeleMedia — Deutsche Bank Research

... diversifying into electronic technologies

TeleMedia Organisational Structure



Source: TeleMedia — Deutsche Bank Research

85 to 90% of Tele Media East's revenues continue to report profits and market share stabilisation. Subsidiaries have been formed in Vilnius and St Petersburg as well as Belorussia. We do not expect them to contribute to profitability until 1998. In 1994 TeleMedia formed a new subsidiary TeleMedia Nederland which will reportedly act as a sales agent and assume responsibility for the overall development of PTT Telecom's directory operations in the Netherlands. As this market is potentially twice that of Sweden, relatively large contributions to profitability should be expected from 1995. We believe that the Netherlands will be the precursor of further developments in the rest of Europe when the markets are fully liberalised.

... and into new geographic markets ...

... such as the Netherlands...

TeleMedia International, a newly created subsidiary, has formed a joint venture along with US West in which it has a 15% stake to publish a new type of local directory. Furthermore, another joint company in which TeleMedia owns 40% and US West 60% has been formed to develop product concepts. As the US is the birthplace of Directory Media and Yellow Pages with a market in excess of USD 100 m per annum, it is important to the long-term development of Tele Media. This strategy has two aims: to keep an eye on future developments at the leading edge of technology and to be a platform for further penetration of the US market.

... and the US

Comment on TeleMedia Strategy and Financial Analysis

A satisfactory financial performance

This sector is characterised by its close relationship to economic growth - advertising spend is significantly co-related to GNP growth. Nevertheless, penetration and contribution from new markets should somewhat mask this cyclability. In 1994 sales grew by 2% but operating income by 21% to SEK 214 m. Improving balance sheet was also responsible for the growth in net financial income. It is also worth noting that 1993 figures were affected by start-up costs. However, as these businesses are not established yet, we expect to see growth rates of around 10 to 15% p.a. in the next three years. The 41% reported 1994 net income growth was an exceptional and noteworthy performance.

Profits should grow at 10-15% per annum

TeleLarm

TeleLarm develops, markets, installs and supports security systems. Operations are carried out in the parent company and in nine subsidiaries in seven countries. This division is expanding aggressively into foreign markets including Finland, the US, and in particular, Germany.

TeleLarm's platform and source of cash-flow is its domestic market before expansion both organically and by alliances into foreign markets e.g. Aco operation agreement has been signed with Matsushita. In Germany Knorr-Bremse's operations were integrated into TeleLarm which resulted in giving this Telia company around 50% of the market for safety systems.

In 1994, benefitting from increased volumes and lower Capex, operating margins and return on capital improved. We expect TeleLarm to continue to expand robustly, in part due to accelerating market growth, and to report improved profit growth rates.

TeleLarm 1994 results

(SEK m)	1992	1993	1994
Operating revenues	605	741	788
Oper. inc. after depr.		39	54
Return on cap. emp %	10	15	21
Investments	70	54	40
No. of employees	700	673	673

Source: Company Report — Deutsche Bank Research

TeleLarm - in an expansionary phase

Swedtel

Swedtel sells Telia's know-how to foreign customers. Its many subsidiaries offer a whole range of services from consulting to planning and training. Swedtel finds its customers mainly in emerging markets, particularly in Africa, Kuwait,Oman and Eastern Europe.

Swedtel's main activity is to propose new work methods and systems to its customers to enhance productivity and quality together with the construction and management of telecommunications.

Swedtel also offers telephone operator services e.g. in the year 1994 Swedtel provided consultancy services to two mobile telephone companies.

We expect the prospects for 1995 onwards to remain bright. New contracts have been won in Indonesia and Philipines building on the knowledge and experience of its parent company. We expect steady improvement in profits, partially held back by new investments.

Swedtel 1994 results

(SEK m)	1992	1993	1994
Operating revenues	139	152	196
Oper. inc. after depr.		11	17
Profit margin, %		10	10
Investments	7	3	7
No. of employees	144	159	208

Source: Company Report — Deutsche Bank Research

Swedtel - accelarating growth into foreign markets

Telefinans

Telefinans is an authorised finance company operating under the supervision of the Swedish Finance Inspectorate. Telefinans offers financial services such as the purchase of telecommunications equipment and services through leasing to Telia's customers through its subsidiaries.

Telefinans has three subsidiaries a) Teletrading - second hand communications equipment, b) SergelInskasso - collection agency and c) Telia Card - telephone cards. Telefinans is the market leader among finance companies in the world of data and telecommunications. Its competitors include finance companies and other telecommunications companies. Its long-term strategy is to penetrate the international market by largely financing Swedish companies requirements for international communications. This will be carried out through both Unisource and its parent, Telia.

Telefinans

(SEK m)	1992	1993	1994
Operating revenues	2,321	2,316	2,127
Oper. inc. after depr.		753	735
Ret. equity bef. tax, %		41	44
Investments	1661	1,293	1,527
No. of employees	212	222	198

Source: Company Report — Deutsche Bank Research

Telefinans - an important part and supplement to Telia's main activities

Despite an increasingly competitive finance market characterised by continued concentration, Telefinans has been very successful in offering package deals; incoming orders have increased sharply by 38% in 1994. These good results also reflects a decline in credit losses.

Steady growth in profits

Profitability should steadily improve as the financing content within a 'telecoms offering' is expected to grow at a significant rate.

Telia TeleRespons

Telia TeleRespons is responsible for operator-based telephone services such as directory enquiries, call set-up, conference calls, multifax, call assistance, tele marketing, telegrams, etc. In total Telia TeleRespons offers some twenty services to nearly sixty million customer contracts.

TeleRespons

(SEK m)	1992	1993	1994
Operating revenues	1,114	1,027	998
Oper. inc. after depr.		-49	122
Profit margin, %	10	neg	18
Investments	28	24	173
No. of employees	3,114	2,662	2,314

Source: Company Reports — Deutsche Bank Research

Directory enquiries account for the majority of company contacts. Telia multi fax services should grow strongly. Telemarketing will be, however, the strongest impetus to growth till at least the end of the decade. As certain services will be phased out sales growth in 1995 and 1996 should be relatively modest. We expect that from around 1997 Telemarketing should be responsible for a strong increase in TeleRespons sales.

Modest profit growth estimated

TeleRespons recorded a loss in 1993 due to a restructuring charge of SEK 66 m which led to around 450 people leaving the company. Staff numbers continue to decline, which help profitability and led to an operating income of SEK 122 m in 1994. Profit growth should be modest as the division has embarked on a major programme of Capex on e.g. speech technology, computer technology and diversification into Europe.

Teli Service

Teli Service provides support for telecommunication and computer products offering all facets from testing to support and recovery. It is supplier independent and its strategy is to build up large services. Its strength lies in its parent which is a major telecoms company. We would say that it is a further diversification to make use of the skill resource present within the company. During 1994 contracts were signed withEricsson Public Comm and Compaq. In 1995 a contract was signed with Ericsson Radio to support and service GSM mobile terminals which is worth around SEK 25 m annually.

Teli Service

(SEK m)	1993	1994
Operating revenues	133	186
Oper. inc. after depreciation	14	22
Gross margin, %	21	14
Investments	4	14
No. of employees	222	287

Source: Company Report — Deutsche Bank Research

Good long term growth profit prospects

We expect both revenues and profits to expand substantially in the years 1995-2000 which should be brought about by acquisition and organic developments.

Business development companies

Supports Telia's main activities

Those companies contribute specifically to the development of Group activities without any major contacts with the market.

Telia Research AB is responsible for Telia's research and development resources and conducts 40% of the total R&D activities of the Group.

Telia Data AB is Telia's internal data-service company which develops, manages and produces the ADP services required by Telia for its own operations.

The Material and Support Division is responsible for purchasing and logistics, quality and security and a variety of service functions, including technical documentation.

Fastighets AB Telaris manages the Group's premises and real estate.

The Training Division provides comprehensive internal telecommunications training programmes. It also offers leadership, finance and language courses.

The Treasury Division is the Group's internal bank and central unit for raising capital.

Telia Försäkrings AB is the Group's internal insurance company.

Ellemtel AB, 50% owned by Ericsson carries out research into telecom networks, data networks and private telephone exchanges.

Information on the Business Development Companies

	Oper. Revenues		Income after depr.		No. of employees
	1993	1994	1993	1994	Dec 31 1994
Materials and support Division	2,141	2,481	-56	-35	773
Training Division	207	182	-41	-30	190
Telia Research AB	591	548	12	22	600
Telia Promotor AB	88	113	7	8	157
Telia Data AB	1,434	1,537	23	56	1,253
Fastighets AB Telaris	2,223	1,818	532	650	231
Telia Forsakrings AB	-	37	-	30	5
Ellemtel	1,325	1,421	2	2	978

Source: Company Report — Deutsche Bank Research

Chapter 6: Telia Financial Analysis

Sales and profit development

Telia sales growth rate declining...

Telia, like many telecommunications companies, is reporting slow growth in sales, due to competitive pressures and faster growth in net income, as the benefits of restructuring filter through. A strength of the Telia Group is its strong cash generation property which, in the main, is a result of gradually decreasing capital expenditure and declining interest as well as operating expenses. The Network Services Division responsible for the Public Switched Telephone Network (PSTN) reflects the development of the company. Volume growth which is slowing down outpaces revenue growth suggesting that price falls are having a negative impact.

... but cash position improving

The company announced a rebalancing of tariffs in January 1994 which was meant to have a neutral effect but, at the end of the half year the actual price decline was 3-5% - (a clear example of market forces superseding regulation).

Sweden - an attractive market ...

It is worth noting that competition will intensify in Sweden as the Nordic region should continue to attract some of the world's largest telecommunications comanies. Sweden is the 4th largest European market worth an estimated USD 13.3 bn. Furthermore, 40% of the Nordic countries international telecommunications traffic is inter-regional - 666 minutes out of 1,700 minutes of international traffic. Companies such as BT through TeleNordia offering Business Services, France Telecom Network Services, Cable & Wireless through its interest in Tele 2, Singapore Telecom through Stjavn-net in Cable TV, Metropolitan Fibre Systems in business communications and Air Touch and Vodafone in mobile are all hotly contesting the Swedish telecommunications market place.

... not only for the Nordic inter-regional traffic

Competition should make Telia more effective

Competition in a deregulated market has been perceived by many industry observers to be negative. We would argue the contrary; New Zealand Telecom operating in the most deregulated market in the world as well as AT&T have become effective competition and improved their profitability. This has been reflected by an outperformance in their share price; moreover, they have become more competition hardened, a critical successful factor to compete in a globalising telecom market.

Telia uniquely positioned to become a major player

We believe that Telia is uniquely positioned to operate as it does in the most liberalised and telecommunication conscious environment of Europe (along with the UK) to become a successful global player.

1994 profits hit by exceptional costs

1994 was a watershed year for Telia. After 3 years of rising profitability (1991-1993) Telia reported a dip in operating income to SEK 4.6 bn from SEK 5.5 bn. This may be attributable to three factors; firstly, marketing commission of SEK 500 m to SEK 1,000 m were expensed to attract GSM customers to the mobile network; secondly, SEK 1,296 m was charged against the income statement for early retirement as well as severence payments; thirdly, additional depreciation amounting to SEK 1,195 m for write-downs and shortening depreciation periods also depressed

profitability. Furthermore, pension expenses charged to the income statement were higher in 1994.

We think it unlikely that this high level of additional costs should impact the income statement in 1995 to 1996 and 1997. The most encouraging feature of the 1994 result was the decrease in net debt from SEK 7.23 bn in 1993 to SEK 3.4 bn. Capex is peaking, cash flows are positive and therefore net interest payments are declining. Return on long term capital employed at 12.3% (14.1% in 1993) and return on equity11.7% (17.3) are below the long term goals of 15% and 17% respectively.

Relative costs improving - as are debt and interest costs

Network Services

We have forecast a slow growth in Network Services - around 2 - 3% p.a. for the next two to three years. Growth in leased line business as well as rental charges (a result of accelarated rebalancing) more than offset flat or declining long distance and international revenue. In our analysis period 1994 - 1997 we are forecasting growth rates of around 35% per annum before exceptional charges. As a measure to set a basis for future forecasts we would like to point to the 15% improvement in operating income for the nine months to September 1994. As the 4th quarter 1994 bore the brunt of a restructuring change amounting to between SEK 0.8 bn and SEK 1.5 bn our assumption is that additional depreciation would be significantly lower at around SEK 600 m p.a. less and decreasing.

Network Services should only report moderate growth in profits

(SEK m)					
Year end December	'93	'94	'95e	'96e	97e
Operating Income	5,506	4,456	5,200	5,400	5,625

Source: Co. reports and own estimates

Telecom Services

Telecom Services is the most competitive segment in Telia. In its traditional areas we see declining sales and profits. However, the focused marketing approach of Telia MegaCom and Telia Promotor is driving sales growth and in the medium term stronger profit growth.

Traditional areas should report declining profits but new services should more than offset the decrease

(SEK m)					
Year end December	'93	'94	'95e	'96e	97e
Operating Income	305	198	330	350	390

Source: Co. reports and own estimates

Telia Mobitel

Telia Mobitel is the Group's and Sweden's success story. An increasing number of subscribers continue to be attracted by lower pricing and a different perception of mobility. When Telia's policy of integrating the fixed and mobile network is implemented, a spur to earnings growth should be expected. In the medium term the reduction of the marketing subsidy from around SEK 3,000 to SEK 1,000 per new connection should improve profitability. Other

factors should continue to help the company improve its results which would include lower access charges., decreasing leased line expenses and also the addition of new software service revenues.

Paging - an important contributor to profitability

We believe that Mobitel's paging operation is strengthened in the presence of its cellular activities. We, therefore, expect that paging will continue to be a strong contributor to Group profitability as it develops into new markets and products (Pan European and Alpha-numeric and pre-programmed messaging).

(SEK m)					
Year end December	'93	'94	'95e	'96e	97e
Operating Income	886	463	750	825	920
Pre-tax income	753	406	700	775	870

Source: Co. reports and own estimates

Unisource

Unisource's losses narrowing

Unisource reported a loss of NLG 49.6 m in 1993 and a turnover of NLG 293.9 m which narrowed to NLG 41 m on a turnover of NLG 93 m in 1994. We expect losses at Unisource to narrow further in 1995. However, 1996 should see Unisource continue to improve its financial results; more customers are continuously being attracted onto its network and start-up costs to merge the networks of the four partners are expected to fall from the middle of 1996. However, as Unisource is widening its alliances and projects e.g. a joint venture company "IRIS" with Compagnie Générale des Eaux, a steep decline in such costs should not be expected. We expect Unisource to move into profitability in 1998. However, the "associates" line at Telia will be negatively impacted in 1995 and 1996, before decreasing strongly in 1997.

Tele Media

Continuing growth in profits till the end of the decade

Tele Media should benefit from the document position in the Swedish market and a growing Swedish economy as well as greater spend on advertising. Profits should at least match sales growth despite growing competition. Its potential is greater than its financial results may indicate as multimedia (the distribution of media via a network and on CD-ROM) has a strong future.

(SEK m)					
Year end December	'93	'94	'95e	'96e	97e
Operating Income	177	215	245	270	295

Source: Co. reports and own estimates

Svenska Kabel-TV

Low consumer spend affecting profitability but should slowly recover in 1996

Svenska Kabel-TV is benefitting from its large programme of Capex spending as well as restructuring. Svenska Kabel-TV is at present passing through a difficult phase, a result of depressed consumer spending in Sweden. Strong marketing initiatives are in place to receive consumer interest. As the second largest Cable TV operator in Europe it has considerable long term potential, in particular, when new products such as interactive services, home banking and pay-per-view are added and start contributing to its revenue. We expect a slight decline in 1995 before growing at around 10%, in the subsequent two years. Programming costs as a % of sales are estimated to be static but start-up costs as well as marketing expenses are rising.

(SEK m)					
Year end December	'93	'94	'95e	'96e	97e
Operating Income	28	60	50	55	60

Source: Co. reports and own estimates

Tele Respons

Strong growth in this complementary activitiy

Tele Respons should be viewed as a complementary service to Telia's traditional call revenue activities. This area offsets some of the loss of market share (through the provision of higher margin revenue to the Group) by making use of the properties of the telecom network. Despite continuing high expenditure on new technologies we expect strong growth in operating profits in the next three years.

(SEK m)					
Year end December	'93	'94	'95e	'96e	97e
Operating Income	-49	122	140	154	170

Source: Co. reports and own estimates

Swedtel

Long term contributor to profitability through agressive diversification into foreign markets

Orderbooking and backlog point to quite an optimistic future for this division for the short term and, in particular, for the longer term. We do not believe it will start contributing significantly before the end of the decade when opportunities in the developing and less developed should open up.

Telefinans

Long tem profitability related to Unisource's success

Despite fierce competition Telefinans fullfills an important role within Telia, helping customers finance its "telecommunications" activities at Telia. As it is also co-operating with Unisource steep growth rates should only be expected by the end of the decade.

(SEK m)					
Year end December	'93	'94	'95e	'96e	97e
Operating Income	753	735	750	800	850

Source: Co. reports and own estimates

TeleLarm

TeleLarm diversifying into new products and markets should record sharp increases in profit albeit from a low base. Start-up costs could dampen growth but future for this small division remains promising.

A small but steady contributor to profitability

(SEK m)					
Year end December	'93	'94	'95e	'96e	97e
Operating Income	39	54	60	66	75

Source: Co. reports and own estimates

Summary analysis of income statement

Our above analysis indicates that revenue growth will be around 2-4% p.a. for the next three years. A significant part of a telecom operators costs are wages, a reduction of which contributes to an improvement in profitability. Telia, in its presentation of accounts, does not give its wage costs as a separate item on the income statement. Costs are reported "by type of work" e.g. admin, production and sales.

Declining costs as a percentage of sales expected due to relative falling personnel expenses

Wages and Productivity

	1990	1991	1992	1993	1994
Op. income/full time employees	116	81	108	160	139
Personnel costs/Total costs %	55	51	54	47	41
Wages and salaries (SEK m)	8,453	8,703	8,936	8,202	7,690

Source: Company reports — Deutsche Bank Research

Telia itself is reporting significant improvements in productivity. According to its own statistics and calculation, labour productivity improved by 14% and 12.4% in 1993 and 1994 respectively. The signifiant reductions in work force which took place in 1992 and 1993 are now only beginning to have a favourable impact in the income statement. It is also worth noting that a furtherSEK 1,296 m described earlier was taken in 1994 as restructuring provisions the benefits of which should improve significantly the income statement from 1996 onwards.

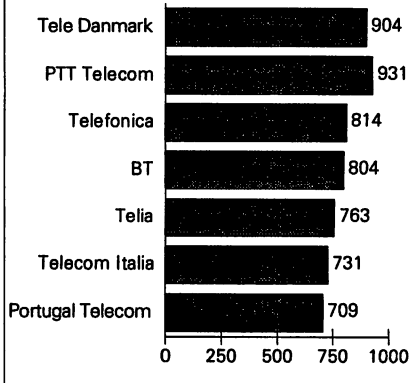
We believe that the rate of decline of wage costs will be somewhat slower as the skill mix is changing. Telia's revenues per employee and revenues per line are still below international norms.

In our EBDIT numbers we include costs of restructuring as there are part of the normal rationalisation process which characterises the evolving telecommunications industry. We have shown EBDIT margins improving to around 42% which is above BT, TeleDanmark and the RBOCs historic average but below Telefonica, KPN and other telephone operators in the public sector e.g. France Telecom. Many leading European operators function in highly regulated and protected markets. We expect EBDIT margins to stabilise around the 36% level in the next five years.

We believe that losses in "the associates line" should remain at the same level or slightly higher. At the time of writing this report both Estonia and Latvia mobile operations are profitable and should be joined by Unisource in 1998.

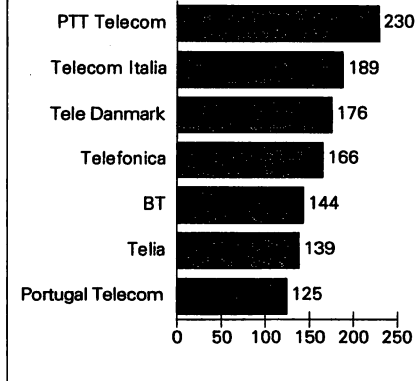
Unisource is passing through a critical phase. We anticipate, as stated earlier, higher losses in 1995 which will be compensated by the ever increasing profits from investments in foreign telecommunication operators.

Revenue per line (USD)



Source: Company Reports — Deutsche Bank Research

Revenue per employee (USD 000's)



Source: Company Reports — Deutsche Bank Research

Depreciation, Investments and Capital Expenditure

Level of Capex plateauing

In 1994 capital expenditure and investments amounted to SEK 8,348 m, a 16% rise from the preceding year, (SEK 7,571 m was the spent on plant and machinery). This level of Capex should continue for the next three years. The level of investments in minority companies should run at around SEK 1.0 to SEK 2.0 bn for the next two to three years.

Investments running above SEK 1bn p.a.depending on opportunities

Slight increase in depreciation

Consequently, depreciation charges should increase in the same period (1994 - 1997). At first sight it appears that Telia is more conservative than other Telecommunications companies in calculating depreciation charges. In 1994 it apparently accounted for 17% of net fixed assets compared with BT's 14%, KPN's 10.6% and Telefonica's 12%. However, TeleDanmark recorded a higher number at 20%. The actual number for Telia is 9.9%. The gross fixed asset value on the balance sheet is the value at the time of transfer of assets from Televerket to Telia in 1993.

Cash-flow and investments

Cash flow improving

Like almost all mature telecommunications companies Telia continues to generate cash. Capex and investments have all but peaked, working capital is under better control and interest expenses are falling rapidly. Net debt fell from SEK 13 bn in 1992 to SEK 7.2 bn in 93 and SEK 3.38 bn in 1994. Gearing is at a comfortable 17.1%. As we expect net debt to decline, albeit at a slower rate, a progressive lowering of net financial expenses should be expected.

Pension Provisions

Pension charges maintained at equivalent level

Pensions are located on the Balance Sheet. Telia has assumed responsibility for pensions for certain categories of personnel in the former Televerket Group. In 1994 of the SEK 14,615 m provisions for pensions SEK 8,281 m is the amount provisioned for retirees and SEK 5,825 m to persons still employed in the Group. At the end of every year there is a notional interest liability which was SEK 1,111 m in 1994. This is calculated on the average incoming and outgoing provision using a notional interest rate of 7.7%. This was higher than the previous year when notional interest was 6.1%. The SEK 933 m charged to operating expenses against the 1994 income statement included the SEK 835 m provision for early retirees. We understand that interest provisions will be maintained at an equivalent level for the next three years which should result in a modest growth in both pension costs as well as interest charged to the income statement.

Tax rate

The company tax rate in Sweden is 28% and this also applies to Telia as well as all other companies.

Telia

Year end Dec (SEK m)	1992	1993	1994	1995e	1996e	1997e
Network services	22,536	23,850	24,527	25,417	26,260	27,101
Telecom services	8,034	8,084	8,524	8,737	8,956	9,202
Telia International	391	212	279	300	330	350
Telia Mobitel	4,355	4,609	5,247	5,875	6,350	6,850
Telia Telerespons	1,114	1,027	998	1,020	1,050	1,075
Total (core activities)		37,782	39,575	41,349	42,945	44,577
less int sales		-7,861	-7,534	-7,900	-8,200	-8,550
Net sales (core activities)		**29,921**	**32,041**	**33,449**	**34,745**	**36,027**
Telefinans	2,321	2,316	2,127	2,300	2,500	2,700
Svenska Kabel-TV	555	586	585	614	651	697
Telemedia	1,932	1,788	1,823	1,950	2,055	2,165
Telelarm	605	741	788	850	891	935
Teli service			186	200	225	250
Swedtel	139	152	196	220	250	330
Total specialists		5,583	5,705	6,134	6,572	7,076
less int sales		-752	-884	-950	-1,000	-1,100
Net sales (specialists)		**4,831**	**4,821**	**5,184**	**5,572**	**5,976**
Telia Research		591	548	603	663	729
Telia Promoter		88	113	125	138	151
Telia Data		1,434	1,537	1,638	1,743	1,854
Materials & Support		2,141	2,481	2,644	2,813	2,993
Telaris		2,223	1,818	2,000	2,200	2,400
Training		207	182	220	245	315
Total Bus developers		**6,684**	**6,679**	**7,231**	**7,802**	**8,442**
less internal sales		-6,363	-6,167	-6,450	-6,750	-6,950
Net bus developers		**321**	**512**	**781**	**1,052**	**1,492**
Other	-6,685	274	565	600	630	670
Total net operating revenue	**35,297**	**35,347**	**37,939**	**40,013**	**41,999**	**44,166**
Telia Megacom	297	2,569	3,995	4,800	5,100	5,400

Source: Co. reports and own estimates — Deutsche Bank Research

Telia Income Statement 1993 - 1994 & 1995 -1997 Estimates					
Year end Dec	**1993**	**1994**	**1995e**	**1996e**	**1997e**
(SEK m)					
Total net operating revenue	**35,347**	**37,939**	**40,013**	**41,999**	**44,166**
Production expenses	-13,290	-14,253	-15,042	-15,750	-16,474
Sales expenses	-3,901	-4,780	-4,940	-5,434	-6,032
Administration	-3,236	-3,737	-3,750	-3,938	-4,134
Other expenses	-5	-5	-6	-10	-15
Disposals, restructuring ,R&D,etc	-497	-542	-610	-640	-700
Personnel restructuring costs	-937	-1,296	-700	-730	-760
Associated profits/losses	-41	-95	-400	-250	-75
EBDIT	**13,440**	**13,231**	**14,565**	**15,247**	**15,976**
Depreciation	-7,773	-8,619	-9,000	-9,400	-9,750
Operating income	**5,667**	**4,612**	**5,565**	**5,847**	**6,226**
Other restruct expenses	-173	-36			
Interest received	210	261	200	200	200
Interest paid	-1,086	-718	-400	-350	-300
Exchange rate gains/losses	106	-53			
Int comp of pens prov	-771	-1,111	-1,175	-1,200	-1,250
Pre-tax profit before X ord	3,953	2,955	4,190	4,497	4,876
Extra ordinary items					
Pre-tax income	**3,953**	**2,955**	**4,190**	**4,497**	**4,876**
Taxes	-806	-719	-1,173	-1,259	-1,365
Net income	3,147	2,236	3,017	3,238	3,511
Minorities	1	1	-10	-20	-35
Net income	**3,148**	**2,237**	**3,007**	**3,218**	**3,476**

Source: Own Estimate — Deutsche Bank Research

Telia Group Pro Forma Balance Sheet

	1992	1993	1994	1995e	1996e
Assets					
Current assets					
Liquid assets	412	**2,392**	**1,259**	**1,500**	**2,050**
Accounts receivable	5,698	5,668	6,660	7,250	7,650
Other current receivables	5,597	3,546	3,845	4,000	4,300
Inventory, stock in trade and work in progress	1,078	854	1,028	1,200	1,390
Total current assets	**12,785**	**12,460**	**12,792**	**13,950**	**15,390**
Fixed assets					
Long-term receivables	580	524	940	1,100	1,200
Shares and participations	80	1,040	999	1,200	1,350
Machinery, equipment and intangible assets	37,100	36,268	34,690	33,500	32,950
Buildings, land and group installations	7,557	5,170	5,426	5,800	6,000
Total fixed assets	**45,317**	**43,002**	**41,875**	**41,600**	**41,500**
Total assets	**58,102**	**55,462**	**54,667**	**55,550**	**56,890**
Liabilities and Equity					
Current liabilities					
Non-interest bearing					
Accounts payable to suppliers	1,986	2,087	2,732	2,900	3,100
Other current liabilities	9,855	10,375	10,395	10,300	10,300
Interest bearing					
Short term loans	8,344	5,390	2,439	1,300	600
Total current liabilities	**20,185**	**17,852**	**15,566**	**14,500**	14,000
Long term liabilities					
Non-interest bearing					
Other long-term liabilities	2,798	1,655	2,438	2,000	2,140
Interest bearing					
Provision for pens. and employment contracts	13,898	13,792	14,615	15,000	15,100
Other long-term liabilities	5,062	4,237	2,200	1,500	500
Total ong-term liabilities	**21,758**	**19,684**	**19,253**	**18,500**	17,740
Total liabilities	**41,943**	**37,536**	**34,819**	**33,000**	**31,740**
Minority interest in equity	**2**	**0**	**6**	**10**	**20**
Equity					
Share capital/government capital	1,760	8,800	8,800	8,800	8,800
Restricted reserves	9,530	5,475	6,900		
Non-restricted reserves	5,350	503	1,905		
Net income	-483	3,148	2,237		
Total equity	**16,157**	**17,926**	**19,842**	**22,540**	**25,130**
Total liabilities and equity	**58,100**	**55,462**	**54,667**	**55,550**	**56,890**

Source: Company accounts and Own estimates

Deutsche Bank Research

Valuation of Telia

This preliminary analysis is based on Telia's existing financial statements and our forecasts calculated on the basis of those statements as well as information given by the company.

Methodology

We used four ways to measure the value of Telia in the absence of detailed information required to carry out a full cash-flow analysis. We believe that Telia should be rated below BT and above Telefonica, Portugal Telecom and Telecom Italia, and in the group containing Tele Danmark as well as KPN. BT is arguably the most advanced telecommunications company in Europe; Telefonica, Telecom Italia and Portugal Telecom have just entered their final phase of modernisation. In the group of three Telia has one of the most advanced networks in the world although KPN has a fully digitalised network. Tele Danmark seems to have the fastest short term growth prospects, in part due to its strong net cash position. Telia also operates in probably the most competitive environment in the world which in the short term does lead to a lower valuation. However, its regulatory regime is relatively benign and rebalancing should be complete by 1997. As Telia's tariffs are also low, barriers to entry are high, which offsets partially the lower valuation brought about by competition described earlier.

Our favoured method is cash flow as it focuses on the operational efficiency of a company and disregards the effects of taxation as well as depreciation policies which vary from country to country.

The four methods we have used are 1) Aggregate Value/ Earnings before Depreciation, Interest and Tax (EBDIT) 2) Price Cash Flow, 3) Dividend and 4) PER. 1995 has been chosen as our valuation year because financial forecasts tend to be the most reliable after the last reported year. We also believe that the telecom companies under consideration should follow a normal growth pattern. Comparative statistics for 1996-1998 of European telecom operators are included in this section.

1) Aggregate Value/EBDIT

We would value Telia (in the context of this method) below BT and around Tele Danmark's and KPN's levels. Telia is considered to be a better and more efficent operator when compared with the other quoted European telecommunication companies. We therefore believe that the value of Telia should be between 3.8 to 4.2 times 1995 EBDIT.

Valuation - EBDIT method

SEK bn

Year end Dec	EBDIT	Value
1995e	14,565	55.34 - 61.17

less net debt of SEK 1.3 bn

Value should lie between SEK 54.04 - 59.87 bn

Source: Own estimates — Deutsche Bank Research

2) Price Cash Flow

As in our previous example we would value Telia below BT. Furthermore, as Tele Danmark's higher cash multiple is a reflection of its strong net cash balances we believe Telia should be ranked below Tele Danmark as well. KPN's lower valuation is a reflectionof its Postal activiites which is not typically a cash intensive business. We therefore believe that the value of Telia should be between 5.0 and 5.5 times cash flow. The apparently higher valuation that is derived from this method may be attributed tot he execptional depreciation costs taken in 1994 and 1995.

Valuation - Cash Flow method

SEK bn

Year end Dec	Cash Flow	Value
1995e	12,007	60.0 - 66.0

Value lies between SEK 60.0 - 66.0 bn

Source: Own estimates — Deutsche Bank Research

3) Dividend (based on forecast 1995 earnings)

Valuations derived from dividend methodologies are usually sector focused and based on two key assumptions, pay-out ratios and yields. We are inclined to assume a dividend pay-out ratio of around 70% and a yield of 4.0 to 4.5% which is due to one further consideration. A balance has to be struck between the 1 to 2% typical yield of the Swedish market and around 5% yield which the international investor typically obtains from a telecommunications company. The pay-out ratio of 70% is higher than most European telecommunication companies. We justify this number on the basis that Telia has become a strong cash generator.

Valuation - Dividend method

SEK bn

Year end Dec	Exp. div payout	Value
1995e	2,104	46.8 - 52.6

Value lies between SEK 46.8 - 52.6 bn

Source: Own estimates — Deutsche Bank Research

Comparitive Statistics - European Telecom Companies 1995

Operators	Share Price*	No. of Sh (m)	Mkt Cap. (bn)*	Mkt Cap. (USD bn)	Net Debt (USD bn)	Aggr. Val. (USD bn)	EPS*	P/E
BT	402.5	6,232	25.08	39.95	2.71	42.66	30.3	13.3
Telefonica	1,615	939	1,517	12.45	12.50	24.96	135.0	12.0
Telecom Italia	4,645	8,133	36,452	22.33	9.80	32.13	241.0	19.3
STET	4,995	5,281	24,993	15.38	10.29	25.67	266.0	18.8
Tele Danmark	286	131	37.47	6.80	-1.29	5.57	2.4	11.9
KPN	57.1	460	26.29	16.67	1.77	18.44	4.9	11.6
Portugal Telecom	2,910	190	552.90	3.72	1.68	5.40	192.1	15.2

	Mkt P/E	P/E rel	CFS*	PCF	EBDIT (USD m)	Aggr./ EBDIT	DPS*	Yield	Pay-out Ratio
BT	13.2	1.0	65.9	6.1	8,353	5.1	18.7	4.6%	62%
Telefonica	11.0	1.1	745.0	2.2	6,983	3.6	66.0	4.1%	49%
Telecom Italia	18.0	1.1	1457.0	3.2	9,204	3.5	125.0	2.7%	52%
STET	18.0	1.0	2340.0	2.1	11,518	2.2	125.0	2.5%	47%
Tele Danmark	15.0	0.8	49.7	5.8	1,440	3.8	14.4	5.0%	60%
KPN	11.8	1.0	12.2	4.7	4,564	4.0	2.6	4.6%	53%
Portugal Telecom	12.6	1.2	789.4	3.7	1,294	4.2	91.2	3.1%	47%

* in local currency; in pence for the U.K.

Source: DB Estimates — Deutsche Bank Research

4) PER

Our valuation using this method is based on comparisons with other operators in relation to their stock market. Dominant telecom operators have normally stood at a discount to their stock market. However, those operators which have a significant weighting in the market index do stand at a premium. We also expect Telia when it comes to the market will make a significant contribution to the Index. The Swedish stock market index is unusual in that it includes many financial constitiutions which tend to skew its value. In order to arrive at a valuation we have chosen a small premium range (Telia/Stock market) which, as it is partially subjective, does introduce a degree of randomness. The other problem we have for valuations based on a price earnings ratio is that earnings are struck after taxation and depreciation which vary considerably from country to country.

Estimates for the Swedish market range from 10.5 to 12.5. Our premium factor is 110%.

Valuation - Price/Earnings method

SEK bn

Year end Dec	Earnings	Value
1995e	3.01	34.9 - 41.2

Value lies between SEK 34.9 - 41.2 bn

Source: Own estimates — Deutsche Bank Research

Conclusion

From the above analysis the valuation lies between SEK 35 bn (based on PER) and SEK 66 bn (based on operating cash flow as well as price cash flow multiples). We would like to point out that our PER valuation differs considerably from our other methods. This was based on comparison with the Swedish stock market while the other three valuations are based on comparison with other telecommunication companies. We have to conclude that the average value should be somewhere between the two extremes or around SEK 55 bn.

Appendix 1

OECD basket of leased line charges (January 1994)

	9.6 Kbit/s	Index	64 Kbits/s	Index	1.5/2.0 Mbit/s	Index
Australia*	44 015	96	36 308	41	34 4113	68
Austria	86 621	189	86 621	98	68 5517	136
Belgium	16 504	36	140	159	51 1411	101
Canada (Bell)	55 476	121	87 344	99	45 4944	90
Denmark (KTAS)	19 380	42	33 758	38	25 4826	50
Finland (Telecom Fin.)	30 855	67	40 714	46	n.a	
France	47 622	104	71 705	81	43 5291	86
Germany	68 582	150	78 075	88	41 4346	82
Greece	35 513	77	90 260	102	35 8802	71
Iceland	20 334	44	41 278	47	39 9156	79
Ireland	32 122	70	46 237	52	28 0527	55
Italy	50 566	110	113 251	128	98 8267	196
Japan (NTT)	38 910	85	70 771	80	55 8271	110
Luxembourg	67 428	147	117 970	134	117 9696	233
Netherlands	34 065	74	64 865	73	34 0051	67
New Zealand (TCNZ)	29 205	64	103 994	118	40 0487	79
Norway	35 473	77	69603	79	41 3946	82
Portugal (TP/TLP)	49 815	109	53 033	60	33 0742	65
Spain	120 175	262	305 142	346	n.a.	
Sweden	36 026	79	48 686	55	n.a.	
Switzerland	29 864	65	37 273	42	36 1593	72
Turkey	112 856	246	338 568	383	169 1827	335
United Kingdom (BT)	39 514	86	43 229	49	21 1233	42
United States (NY)	66 033	144	119 214	135	65 0438	129
OECD	45 872	100	88 306	100	50 5478	100

*** Data for Australia is from September 1993**

Source: OECD

Deutsche Bank Research

Appendix 2

	Main telephone lines per 100 inhabitants		Investment required (1993 - 2000)		Main lines to be added (1993 - 2000)	
	1992	Forecast 2000	Total (M US$)	Per year (M US$)	Total (k)	CAGR (%)
Australia	47.10	59.01	5,095	636.9	3,396	4.4
Belgium	42.64	60.71	2,845	355.6	1,897	4.7
Canada	59.21	76.79	10,350	1,293.8	6,901	4.5
Denmark	57.97	69.66	980	122.5	654	2.5
Finland	54.24	68.31	1,250	156.3	833	3.4
France	52.13	67.60	15,880	1,985.0	10,587	3.9
Germany	43.96	48.42	23,935	2,991.9	15,955	4.8
Hong Kong	48.62	67.26	2,020	252.5	1,346	5.0
Italy	41.03	58.10	15,475	1,934.4	10,316	4.6
Japan	46.74	59.63	26,940	3,367.5	17,960	3.4
Luxembourg	52.87	69.61	125	15.6	83	4.3
Netherlands	48.88	61.06	3,445	430.6	2,296	3.4
New Zealand	44.99	52.87	500	62.5	334	2.5
Norway	52.88	69.84	1,255	156.9	836	4.0
Singapore	41.60	55.66	835	104.4	558	5.0
Spain	35.29	53.77	11,440	1,430.0	7,625	5.7
Sweden	68.10	75.40	1,370	171.3	914	1.8
Switzerland	61.27	75.95	1,970	246.3	1,315	3.5
Taiwan, China	35.75	61.55	9,785	1,223.1	6,524	8.2
United Kingdom	45.25	57.24	11,415	1,426.9	7,610	3.3
United States	56.49	65.92	55,840	6,980.0	37,228	2.9

Source: ITU

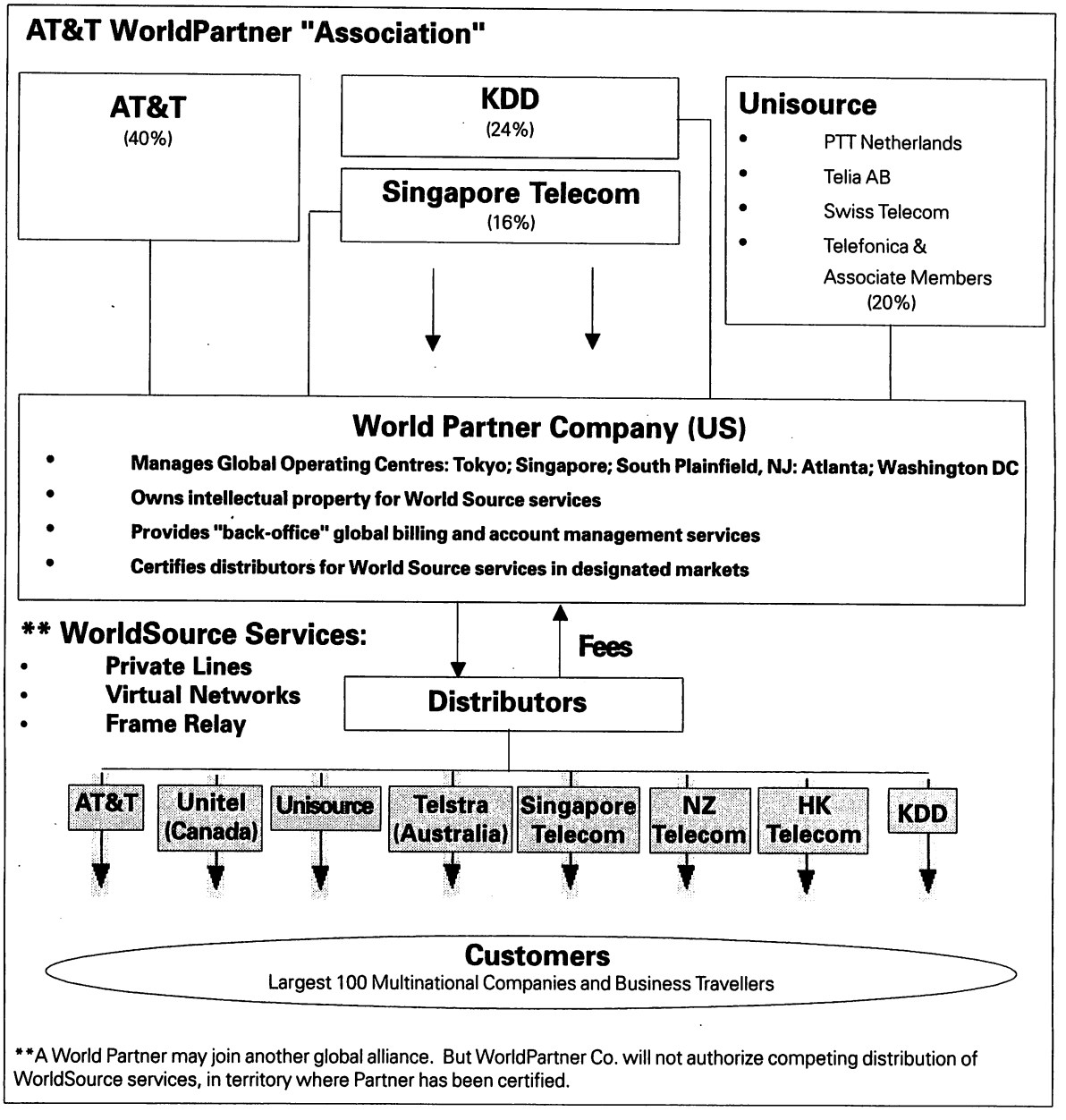
Deutsche Bank Research

	Residential main lines			Main lines	Payphones	
	Total (k)	Households (k)	Per 100 households	Per 100 inhabitants	Total (k)	Per 1,000 inhabitants
	1992	1992	1992	1992	1992	1992
Australia	5,632.2	5,690	102.4	47.10	34.00	1.94
Belgium	3,326.2	3,734	89.1	42.64	14.34	1.43
Canada	11,372.6	10,122	112.4	59.21	173.68	6.33
Denmark	2,402.3	2,325	103.3	57.97	8.47	1.64
Finland	2,056.5	2,027	101.5	54.24	19.45	3.85
France	26,914.7	22,466	119.8	52.13	177.00	3.09
Germany	31,170.3	33,400	93.3	43.96	161.80	2.01
Hong Kong	1,776.5	1,818	97.7	48.62	5.32	0.92
Italy	18,618.3	21,150	88.7	41.03	406.50	7.04
Japan	39,203.6	44,552	88.0	46.74	827.22	6.71
Luxembourg	144.3	140	103.1	52.87	0.70	1.78
Netherlands	5,916.0	6,329	93.5	48.88	11.80	0.78
New Zealand	1,143.6	1,624	96.9	44.99	4.10	1.21
Norway	1,724.0	1,845	93.4	52.88	13.37	3.12
Singapore	771.6	671	114.9	41.60	28.47	10.13
Spain	10,206.2	11,380	89.7	35.29	42.90	1.10
Sweden	4,616.8	3,840	120.2	68.10	32.00	3.68
Switzerland	3,054.9	3,355	91.1	61.27	54.60	7.99
Taiwan, China	5,382.0	5,344	100.7	35.75	112.21	5.41
United Kingdom	20,110.8	19,328	104.0	45.25	343.00	5.95
United States	96,364.2	95,277	102.2	56.49	1,827.80	7.23

Source: ITU

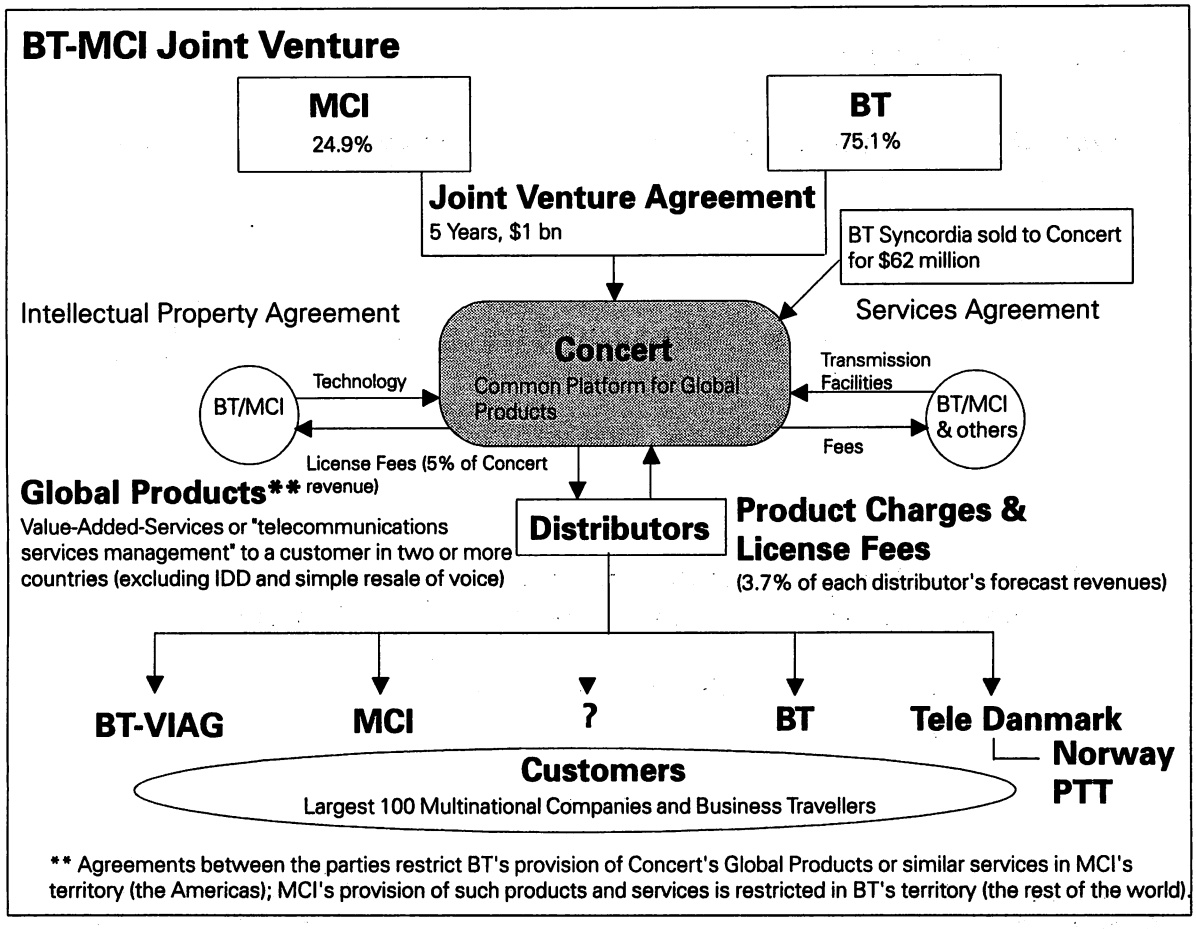
Deutsche Bank Research

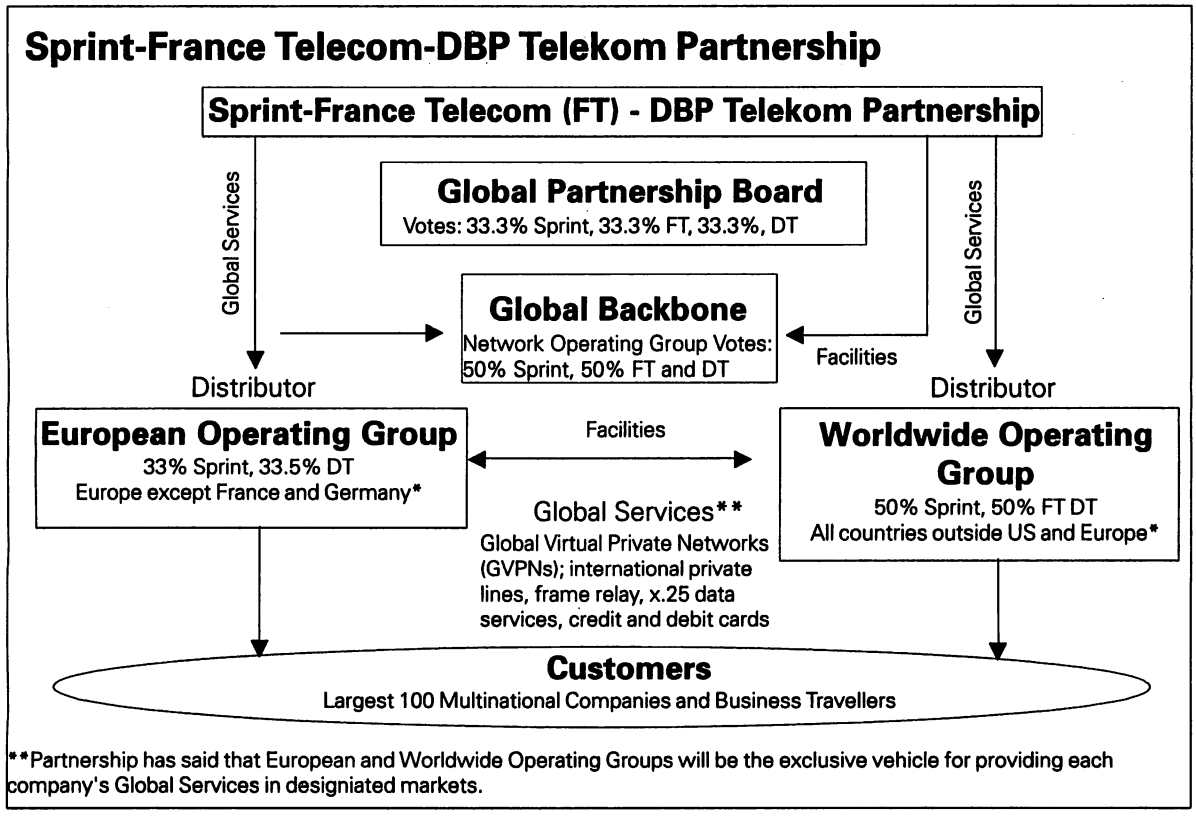
Appendix 3



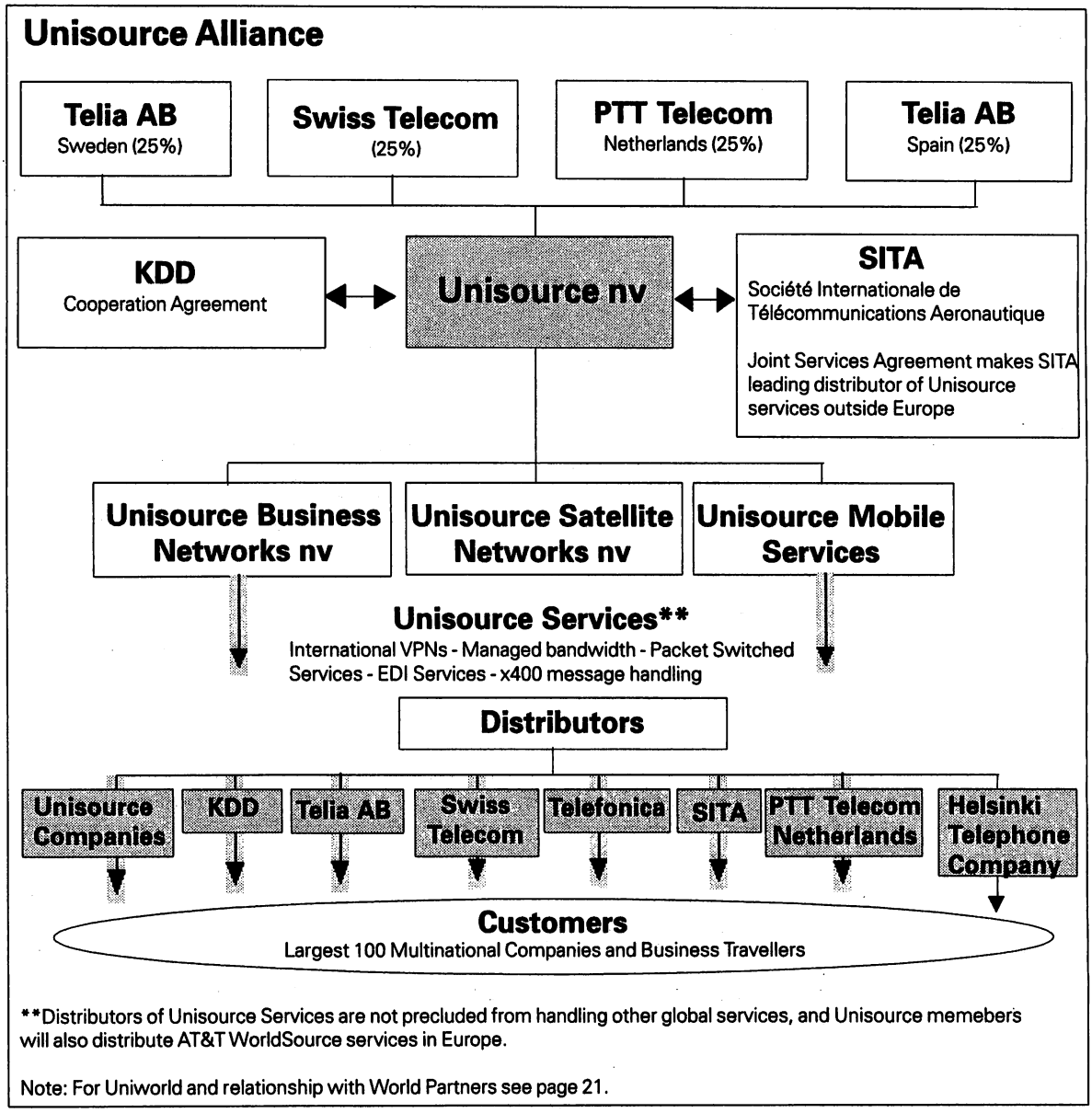
**A World Partner may join another global alliance. But WorldPartner Co. will not authorize competing distribution of WorldSource services, in territory where Partner has been certified.

Appendix 4


BT-MCI Joint Venture
MCI
24.9%
BT
75.1%
Joint Venture Agreement
5 Years, $1 bn
BT Syncordia sold to Concert for $62 million
Intellectual Property Agreement
Services Agreement
Concert
Common Platform for Global Products
Technology
Transmission Facilities
BT/MCI
BT/MCI & others
Fees
License Fees (5% of Concert revenue)
Global Products**
Value-Added-Services or "telecommunications services management" to a customer in two or more countries (excluding IDD and simple resale of voice)
Distributors
Product Charges & License Fees
(3.7% of each distributor's forecast revenues)
BT-VIAG
MCI
?
BT
Tele Danmark
Norway PTT
Customers
Largest 100 Multinational Companies and Business Travellers
** Agreements between the parties restrict BT's provision of Concert's Global Products or similar services in MCI's territory (the Americas); MCI's provision of such products and services is restricted in BT's territory (the rest of the world).


Sprint-France Telecom-DBP Telekom Partnership
Sprint-France Telecom (FT) - DBP Telekom Partnership
Global Services
Global Partnership Board
Votes: 33.3% Sprint, 33.3% FT, 33.3%, DT
Global Services
Global Backbone
Network Operating Group Votes: 50% Sprint, 50% FT and DT
Facilities
Distributor
Distributor
European Operating Group
33% Sprint, 33.5% DT
Europe except France and Germany*
Facilities
Worldwide Operating Group
50% Sprint, 50% FT DT
All countries outside US and Europe*
Global Services**
Global Virtual Private Networks (GVPNs); international private lines, frame relay, x.25 data services, credit and debit cards
Customers
Largest 100 Multinational Companies and Business Travellers
**Partnership has said that European and Worldwide Operating Groups will be the exclusive vehicle for providing each company's Global Services in designiated markets.

Appendix 5



**Distributors of Unisource Services are not precluded from handling other global services, and Unisource memebers will also distribute AT&T WorldSource services in Europe.

Note: For Uniworld and relationship with World Partners see page 21.

Appendix 6

Swedish Telecommunications

Applications - May 1995	Licence Holders - May 1995
Telephony	**Telephony**
Diator Netcom Lokalslingan	Telia
BT Worldwide	Tele2
Singapre Telecom International Sverige	Dotcom Data and Tele Communication
Fonetel Global Communications	France Telecom Network Services Nordic
Telegate	MFS Communications
Mobile Services	**Mobile Services**
Comvik Systems AB	Telia/Telia Mobitel
Mercury Communications Ltd	Comviq GSM
	Europolitan
	Telia /Telia Mobitel (TFTS)
Leased Lines	**Leased Lines**
AB Stokab	Banverket (The National Railway Administration)
Cyberlink Sweden	Telia
BT Worldwide	Tele2
Sinapore Telecom International Sverige	Dotcom Data and Telecommunication
Telegate	France Telecom Network Services Nordic
	MFS Communications

Source: Post & Telestyrelsen — Deutsche Bank Research

Appendix 7

Top 35 carriers by revenue (1994)	
	Total Sales (bn)
NTT	75.972
AT&T	75.094
Deutsche Telekom	39.484
France Telecom	26.404
British Telecom	22.217
GTE	19.943
Stet	18.510
Bellsouth	16.844
BCE	15.948
Telecom Italia	14.546
Bell Atlantic	13.791
MCI Comm.	13.338
Nynex	13.306
Telefonica NAC	13.239
Ameritech	12.569
SBC Communications	11.618
US West	10.953
Pacific Telesis	9.274
Cable & Wireless	7.514
Swiss PTT	6.983
Telia AB	5.250
Telmex	4.828
DDI	4.311
Belgacom	3.643
HK Telecom	3.478
Tele Danmark	3.289
Kokusai Denshin	2.969
Alltel	2.961
Singapore Telecom	2.282
Telekom Malaysia	1.832
Telefonica	1.791
Southern New England Telecom	1.717
BC Telecom	1.695
Telecom Corp. New Zealand	1.686
Telecom B	1.491

Source: DB Estimates — Deutsche Bank Research

Appendix 8

Western European cellular-telephone subscribers (June 1, 1995)

Country	Operator	System	Launch	Subscribers 01/06/95	Yrly growth %	Pntn (%) 01/06/95
Belgium	Belgacom Mobile	NMT 450	Apr-87	54,900	-13.54	1.59
Belgium	Belacom Mobile	GSM	Jan-94	105,000	220.18	
Denmark	Tele Danmark Mobil	NMT 900	Dec-86	253,142	14.32	10.78
Denmark	Tele Danmark Mobil	GSM	Jul-92	160,295	66.97	
Denmark	Sonofon	GSM	Jul-92	113,000	58.41	
Finland	Telecom Finland	NMT 450	Mar-82	193,103	8.06	15.36
Finland	Telecom Finland	NMT 900	Dec-86	395,631	29.36	
Finland	Telecom Finland	GSM	Jul-92	118,500	414.81	
Finland	Radiolinja	GSM	Jul-92	73,000	274.99	
France	France Telecom	RC 2000	Nov-85	260,000	-18.75	1.78
France	France Telecom	GSM	Jul-92	483,000	168.33	
France	SFR	NMT 450	Aug-89	145,098	5.91	
France	SFR	GSM	Dec-92	138,263	295.04	
Germany	DeTeMobil	C450	Sep-85	687,750	-9.51	3.47
Germany	DeTeMobil	GSM	Jul-92	1,045,212	60.22	
Germany	Mannesman	GSM	Jun-92	1,019,000	57.25	
Germany	E-Plus	DCS 1800	May-94	65,000	n/a	
Greece	Panafon	GSM	Jul-93	106,350	129.53	2.01
Greece	Stet Hellas	GSM	Jul-93	101,393	199.69	
Italy	Telecom Italia	TACS 900	Dec-94	2,583,024	70.33	4.77
Italy	Telecom Italia	GSM	Jun-85	123,619	461.90	
Netherlands	PTT Telecom	NMT 450	Jul-94	18,170	-22.96	2.51
Netherlands	PTT Telecom	NMT 900	Nov-81	244,506	13.95	
Netherlands	PTT Telecom	GSM	Dec-86	120,710	n/a	
Norway	Tele-Mobil	NMT 450	May-93	183,633	7.06	16.21
Norway	Tele-Mobil	NMT 900	Sep-93	299,907	28.07	
Norway	Tele-Mobil	GSM	Jan-89	109,000	990.00	
Norway	Netcom	GSM	Oct-92	108,600	497.79	
Portugal	TMN	GSM	Jun-92	94,000	104.35	2.34
Portugal	Telecel	GSM	Apr-90	115,000	167.44	
Spain	Telefonica	NMT 450	Oct-81	29,061	-28.74	1.45
Spain	Telefonica	TACS 900	Dec-86	583,099	107.48	
Sweden	Telia Mobitel	NMT 450	Nov-92	260,464	-1.24	19.43
Sweden	Telia Mobitel	NMT 900	Aug-81	730,729	29.15	
Sweden	Telia Mobitel	GSM	Sep-92	332,000	582.19	
Sweden	Comviq	COM 450	Sep-92	9,396	-21.70	
Sweden	Comviq	GSM	Sep-87	279,188	564.73	
Sweden	Europolitan	GSM	Mar-93	88,260	194.20	
UK	Cellnet	TACS 900	Jan-85	1,796,900	64.55	7.40
UK	Cellnet	GSM	Jul-92	45,800	n/a	
UK	Vodafone	TACS 900	Sep-93	1,745,411	39.97	
UK	Vodafone	GSM	Apr-94	210,689	602.30	
UK	Mercury One-2-One	DCS 1800		290,000	222.22	
UK	Orange	DCS 1800		180,000	n/a	
Total				**16987769**	**60.21**	**4.44**

Source: Mobile Communications — Deutsche Bank Research

Deutsche Bank Group Equity Sales Worldwide

Europe:

Amsterdam:	(31) 20/626-4455	Deutsche Bank de Bary N.V.
Dusseldorf:	(49) 211/883-2567	Deutsche Bank AG
Frankfurt:	(49) 69/9103-5288	Deutsche Bank AG
London:	(44) 171/971-7263	Deutsche Bank AG London
Madrid:	(34) 1/3355747	Deutsche Bank S.A.E.
Mannheim:	(49) 621/169-3090	Deutsche Bank AG
Milan:	(39) 2/7795-2259	Deutsche Bank Securities
Paris:	(33) 1/53750-629	DB Bourse/Deutsche Bank AG
Stuttgart:	(49) 711/125-2240	Deutsche Bank AG
Vienna:	(43) 1/53181-203 or 229	Deutsche Bank (Austria) AG
Zurich:	(41) 1/224-5366	Deutsche Bank (Suisse) S.A.

Americas:

New York:	(1) 212/474-7475 (Int.)	Deutsche Bank Securities Corp.
	(1) 212/468-5500 (Dom)	C. J. Lawrence/DBSC
	(1) 212/468-5821	Morgan Grenfell
	(1) 212/468-5900	Bain & Co.
Toronto:	(1) 416/682-8123	Deutsche Bank Securities Canada Ltd.
Montreal:	(1) 514/286-5151	Deutsche Bank Securities Canada Ltd.

Asia/Australia:

Hong Kong:	(852) 5244023	Deutsche Bank Capital Markets (Asia)
Melbourne:	(61) 3/2704180	Bain & Co.
Singapore:	(65) 2228388	Deutsche Bank AG
Sydney:	(61) 2/2581584	Bain & Co.
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