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DECEMBER 1991

FINANCIAL NETWORK SERVICES WESTERN EUROPE

1991-1996

INPUT®

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Network Services Programme - Europe

Financial Network Services
Western Europe 1991-1996

NE-FN1 - 1991

Abstract

This report analyses the financial network services sector for Western Europe and its growth potential over the period 1991-1996.

INPUT defines the network services sector to include network applications and electronic information (EI) services:

- Network applications is segmented into:
  - Network management services, including managed network services (MNS),
  - Messaging services,
  - Electronic data interchange (EDI) services,
  - Other application services;
- The EI services sector is segmented into online databases and news services.

Financial network services also include:

- Infrastructure related services, such as security and performance management services in the MNS area,
- Network applications services such as those used in support of automatic teller machines and international payments networks.

The challenges for vendors are to offer a service which handles all classes of network service on an end-to-end basis, and to understand the user needs for integration of information derived from a variety of sources, both internal and external to the organisation.

This study reviews the third party vendors selling financial network services, including software and services companies owned by groups of financial institutions, airline companies or other large organisations. It identifies leading vendors active in the Western European market serving the financial services industry. A number of standard INPUT vendor profiles are included to illustrate different marketing approaches and service strategies.

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Appendices

I Introduction

A
Objectives

This study is produced as part of INPUT's Network Services Programme - Europe. The objectives of the study are to:

- Create a clear picture of the current structure of the Western European financial network services market,
- Understand the major forces that are affecting this sector, in particular the current recessionary climate and its likely repercussions on users and vendors.
- Identify the major actions being taken by financial network services vendors as a result of these forces and the resulting changes to the competitive environment over the next few years,
- Estimate the size of the market for financial network services for Western Europe and its growth potential to 1996,
- Assess possible major new opportunity areas for network services vendors.

B
Scope

The Western European financial network services market has been analysed by reviewing the activities and types of services required by different kinds of financial institutions. There are several different types of financial network services, but the functional requirements of user organisations served are similar.

This report covers the financial segment of the network services market for Western Europe, for the period 1991 to 1996. This segment is defined as that serving the Banking & Finance sector (including Banks and Securities companies), the Insurance sector and other financial business services. The report covers both financial network applications and electronic information services (EI). The report covers both independent vendors and equipment vendors selling financial network services.

In forecasting the size of the Western European financial services market, INPUT includes only end user revenues gained by third party vendors and excludes those revenues gained from parent organisations which can be defined as captive revenues.

Exhibit I-1 details the structure of the information services as defined by INPUT, including the structure of the network services market. The network services market is divided into two major segments:

- The first, Network Applications, includes managed network services, messaging services and electronic data interchange (EDI) services;

- The second, Electronic Information Services, includes online databases and news databases.

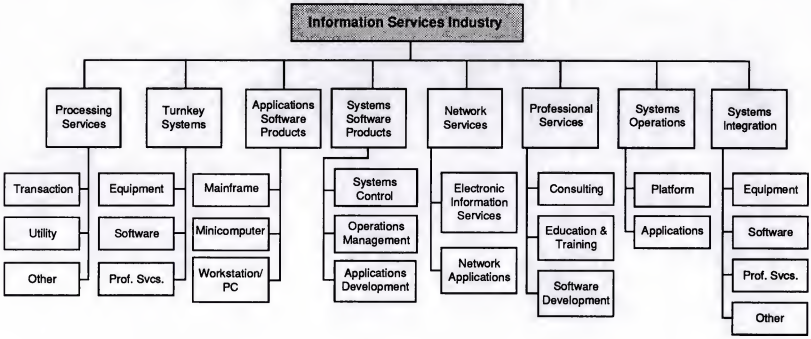
  The fundamental criteria for services in both these categories is that the network itself must play an important enabling function, i.e., without the network the service could not be provided.

Geographically, this report divides Western Europe into the following main countries and regions (groups of countries):

- France,
- Germany,
- U.K.,
- Italy,
- Benelux,
- Scandinavia,
- Rest of Europe.

Exhibit I-1

Information Services Industry Structure—1991



Source: INPUT

C
Methodology

INPUT conducts an on-going programme of research into the Western European software and services market which includes the collection of revenue and product information from over 300 vendors annually.

Two series of user research have also contributed to the report:

- INPUT's customer services programme includes interviews with several hundred users in the sectors under review.

- INPUT's market analysis programme includes interviews with both IS management and end-user management, which investigate their software and computer services needs and issues.

This approach has allowed INPUT to interview a representative cross-section of both vendors and users in the financial network services market.

Market forecasts are based on non-captive end-user expenditures. These are defined by INPUT as those expenditures made externally by any organisation with some third-party vendor, rather than those made within the organisation itself.

Inflation effects are included in the estimates of future market growth rates. Estimates of inflation rates are given in Section A of your Network Services Programme binder.

D
Study Contents

The study is organised into four chapters and one appendix as follows:

Chapter II is an Executive Overview. It is designed for the executive or individual who needs to quickly identify the salient points of the study.

Chapter III assesses the structure of the market and forecasts the size of the Western European financial network services market for the period 1991 to 1996, both in overall terms and by major geographic region.

Chapter IV describes the issues currently affecting the major vendors in the market and includes four standard vendor profiles.

Appendix A contains the reconciliation of this year's with last year's forecast.

II Executive Overview

A
Financial Network Services - A Pause in Demand

Marketing traditional network services to the financial services sector has been depressed by the downturn in the world economy. This has impacted both the banking and the securities trading sectors. This impact has come at a time when these two sectors have already been struggling to overcome other problems specific to their individual situations:

- Banks have been forced to address the massive burden of debt on their balance sheets caused by the excessive lending entered into their books during the past decade, in both corporate and sovereign lending areas.

- Securities houses and the investment community generally have seen their markets around the world contract in the wake of the 1987 stock markets crash. The slow revival which has taken place since then is being accompanied by a significant overcapacity on the supply side and widespread suspicion that many important participants in the market would, judged on pure profit terms, prefer not to be present. Hope of future growth is what maintains their activities in place.

The impacts on the software and services industries have been no less heavy:

- Downsizing to a cheaper level of technology in the basic platform leads to expectations of comparable savings to be gained in software and services costs.

Network services vendors have fared less badly in this climate than other operators in the software and services business, since networks continue to offer opportunities for the design and marketing of innovative niche service products. Moreover the general cost-cutting requirement laid on all businesses during periods of economic recession has increased the attractiveness of outsourcing the provision of complex technology-based operations, including the management and integration of networks.

The vendors who have suffered most during this recent period are those whose services are offered in matured markets where innovation comes solely or principally through changes in platform technology or infrastructure:

- Processing services supplied to financial services sector vendors have tended to continue to decline

- Electronic information services, such as Reuters and Telerate have suffered from lack of trading volume in the market place.

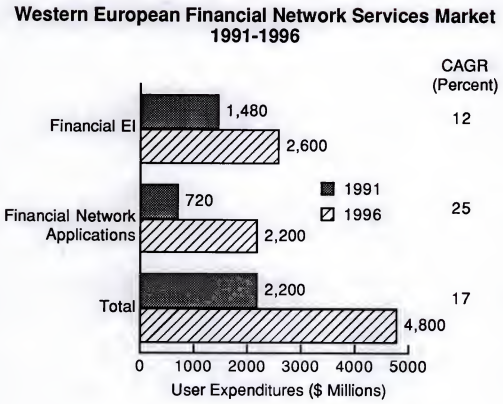
Exhibit II-1 shows the Western European total market size and growth forecasts for the Financial Network Services sector, as broken down between the two submodes used by INPUT:

- Electronic Information (EI) services which are on-line databases and news services supplied into the banking, securities and investment industries.

- Network Applications which include:

  - Value added network services (VANS) which are the enhanced transport services supplied in addition to the basic transmission services, whether on private leased lines or through public switched services
  - Electronic Data Interchange (EDI)
  - Electronic Information Exchange (EIE) which includes messaging, computer-based fax, telex and teletex, and electronic mail (E-mail)
  - Other network services such as network management services and videotex.

Exhibit II-1



INPUT's growth rate forecasts have been revised downwards as a result of our 1991 research which indicated that a considerable pause in the rate would occur in the short-term but that market growth rates would again rise towards the end of the five-year forecast period:

- The growth rate for EI services, the larger of the two subsectors has been marked down by 7% and that of network applications by a heftier 9%, giving an overall growth reduction over both sectors of 7%.

B
Strategic Challenges to Vendors

Vendors operating in the financial network services area are becoming increasingly polarised in terms of their approach and background into:

- Those whose main strengths lie in providing part of the necessary infrastructure within which the services and markets operate. Reuters, Telerate, IBM and Digital, as well as some of the dealing room providers fall into this class.

- Those whose strengths lie in assisting users to obtain applications which give them their edge in the competitive markets of the 1990s. The software product vendors such as ACT Financial Services in the UK and Sligos in France fall clearly into this category, but so also do the traditional independent network vendors such as GEIS and its local distributors throughout Europe.

As financial services markets become more highly competitive it becomes increasingly difficult for vendors in the second class to continue to operate effectively, since many of their products become commodities thus migrating into the infrastructure class. Reuters, Telerate, Citicorp/Quotron have all experienced this pressure over recent years as users request digital feeds through which to add their own unique service selling points, with which they in turn can market services to their clients.

One of the key areas of the future for giving applicational value added is in providing combined informational and transaction services, based on the newer derivatives markets in swaps, futures and options. This essentially requires understanding of user needs at a very detailed level of selling into both users and market makers. There will be many niche opportunities here for large as well as small vendors.

Globalisation of financial markets has been a part of the accepted wisdom over the last decade as networking technology has transformed the financial services industry. With over supply of market makers, brokers and investment specialists being an almost chronic feature of the market of the 1990's, global coverage is becoming more of a necessary than a sufficient condition for continued success. Local knowledge of markets and business culture is the key essential in the evolving European scene:

- Banking applications require networking support and integration services as they evolve from a national to a truly continental marketplace.
- Trading applications require knowledge of local markets and the interfacing between the newer and the older markets, eg. between equities and financial futures markets.
- Investment applications require services which integrate software-based manipulative capability with flexibility of use of external information sources.

All vendors need to recognise the importance of offering integration skills as the market trends push them into more of the role of the infrastructure provider. With margins being squeezed by competitive pressures, the need to outscource the non-essential parts of any operation becomes critical. Outsourcing services should also become a key part of an integrator's strategy in order to retain the flexibility required to operate in fast changing markets and to take advantage of new opportunities such as those in Eastern Europe. Exhibit II-2 summarises the key strategic challenges facing network services vendors.

Exhibit II-2

Network Services Vendors, Strategic Challenges

- Infrastructure vs. Applications
- Information and Transactions
- Niche marketing
- Global coverage vs. Local Market knowledge
- Integration and Outsourcing

Exhibit II-3 illustrates the differences between marketing services in the banking field and marketing to the trading and investment communities:

- Banking sector applications will increasingly require EDI-based funds transfer links.
- EDI as a specific service to bank clients is now being provided by UK and French banks in particular. Using EDI as the electronic payments mechanism, allows banks to satisfy large corporate clients and to serve smaller businesses which do not have the hardware for full application-to-application EDI transmission.
- Network management as an outsourced activity attractive to banks has grown in popularity during 1991. BNP and Societ Gnrale in France and Midland Bank in the UK are prime examples.
- On the securities trading side, the integration of EI services into transaction-based systems and services remains the key priority.
- At a lower level of value-added there is the challenge of providing full desktop services including dealing-room installation and maintenance, training, documentation and simulator facilities.
- Both areas of the market-place are subject to the overall industry trend to outsource the whole of the systems operations on a facilities management type of contract.

Exhibit II-3

Financial Network Services Market Segmentation

Banking	Trading
• Applications • EDI	• Integrated EI Services
• Messaging • Network Management	• Desktop Services
Systems Operations	
Bearer Services	

C
Sectors of the Western European Market

Exhibit II-4 gives INPUT's breakdown of the financial network services market by subsector. The network applications sector is broken down into its submodes some of which are reported on in general in other INPUT studies in the 1991 programme:

- Value-added network services (VANS) include specific enhanced transport services, managed network services (MNS), managed data network services (MDNS), virtual private network (VPN) and virtual private data network (VPDN) services, and network operations management contracts issued either as part of an overall systems operations contract or as a networks only management contract. This sector has started to grow steadily and is expected to reach $380 million in 1996.

- EDI as a financial services sector business has only been initiated as an open market component in 1991 but is forecast to undergo fast growth into the mid-1990's. Danish, UK and French banks have led the way in this area; Dutch banks and banks in other Scandinavian countries are not far behind. This market has been stimulated by the growing importance and continuing work of the EDIFACT standards body for financial services. Although enjoying fast growth EDI will not be able to catch up with the Electronic Messaging area, since many smaller EDI users will use E-Mail as a carrier for their EDI messages for at least part of the transmission path.

- Electronic messaging is growing fast and will maintain its position as the leading subsector due to its incorporation of services which used to be part of other technologies eg. voice network markets. For example, many E-Mail services now offer fax integration and, increasingly, voice messaging services. These services are forecast to grow at the highest rate of any subsector over the next five years.

- Other applications include videotex-based services, proprietary EFT and EFTPOS services, as well as industry specific networked-based services sold to financial institutions in Europe, such as are provided by DWZ in Germany and BACS in the UK. This subsector will grow more slowly than any except EI due to its relative maturity.

- The slowdown in the growth of EI services to the financial sector is the largest single contributor to INPUT's less sanguine forecast for the network services market compared to our position 12 months ago.

Overall market growth for Financial Network Services at 17% is only 2 percentage points higher than that of the total software and services industry in Western Europe.

Exhibit II-4

Financial Network Services Market Forecast by Submode
Western Europe 1991-1996

	User Expenditure $ Millions			
Sector	1990	1991	1991-1996 CAGR (Percent)	1996
VANS (including MNS and VPN)	100	135	25	380
EDI	-	5	95	140
Electronic Messaging	220	290	28	1,000
Other applications (eg. Videotex, EFT etc.)	210	290	19	680
Total Network Applications	530	720	25	2,200
Electronic Information (EI) Services	1,370	1,480	12	2,600
Total Network Services	1,900	2,200	17	4,800

D
Country Markets

The countries with the three largest markets in financial network services - the UK, Germany and France, in that order - account for almost 69% of the total Western European market. This percentage will increase marginally (to 70%) over the next five years. This dominance of the industry is caused by the importance of the trading and investment markets in these countries more than by the pure banking sectors. The UK has the largest market due to the size of the City of London trading markets. Germany currently in second place is expected to narrow but not to close the gap between it and the UK as new market trading facilities and services start to stimulate German market growth. German inter-bank banking applications are heavily supported by the closed user group processing centres who will increasingly sell their services to non-member companies. The Frankfurt stock exchange hopes to match the London stock exchange in equities trading volume at some point in the 1990s but the projects are plagued by inter-exchange rivalry between Frankfurt and the other provincial exchanges which fear domination and even eventual closure.

France will grow fastest of the three major countries but will remain in third place. The French banking sector is the birthplace of many of that country's leading services vendors, but is currently reported to be suffering from the pause in spending initiated by many banks worldwide. The French stock exchange RELIT project on the other hand is ahead of its UK and German counterparts and for the next two years is forecast to be able to capture business from its competitors.

Scandinavia and the Rest of Europe (including Spain and Switzerland) have the two fastest growth rates. Scandinavian growth figures reflect the maturity of their financial markets coupled to the innovative mobile data network sectors in which the Nordic countries are Europe's leaders.

Exhibit II-5 summarises the size and growth of the important countries and groups of countries.

Exhibit II-5

Western European Financial Network Services Market by Country, 1991-1996

	Market Forecast ($ Millions)			
	1990	1991	1991-1996 CAGR (Percent)	1996
France	375	430	18	1,000
Germany	385	480	16	1,030
United Kingdom	545	600	13	1,110
Italy	145	165	19	400
Benelux	130	145	16	300
Scandinavia	130	155	20	380
Rest of Europe	190	225	21	580
Total	**1,900**	**2,200**	**17**	**4,800**

E
Conclusions

Banking industry trends have thrown up a different set of critical issues from the set impacting the trading and investment industry sector. The major issues affecting banking information systems all have networking as central to their implementation:

- Branch banking systems require open networking implementation and fault-tolerant computer support in order to be able to link into regional and global centres for round-the-clock operations.

- EDI gives banks the opportunity to offer business clients, both large and small, new electronics payments services which many would not have the in-house expertise to build for themselves.

- Security and fraud are due to be impacted by new technologies coming on-stream in conjunction with EDI and smart card applications during the 1990s:

  - Signature verification by both traditional and advanced biometric methods
  - Transaction authentication and verification in open systems environments.

- Outsourcing of network management and network integration projects.

- Evolution of the facilities management market to embrace desktop management services, in which users outsource the procurement, supply, maintenance and enhancement of their PC workstation and LAN populations, at the same time including education, training, software provision and other professional services at the required levels of service package.

Network management and network integration contracts are the favoured vehicles for addressing these new, opportunity areas, which are summarised in Exhibit II-6.

Exhibit II-6

Key Banking Industry Issues

- Branch systems
- EDI
- Fraud and Security
- Network Management
- Desktop Services

Trading and investment management trends have thrown up a number of technical and commercial issues as listed in Exhibit II-7:

- The majority of trading rooms now include some powerful workstations with full 32-bit performance and technical graphics capability. This trend will accelerate as the newer markets for derivatives come on-stream. Traditional equities and bond markets, for example, can use but do not of necessity require the speed and graphics of the true workstation. Options and futures markets on the other hand need much more powerful support engines. Hence both levels of system will coexist during the forward period.

- Artificial intelligence (AI) has given a degree of automation to the dealing-room floor. Programmed trading has become commonplace but is acknowledged to have limitations in that it can cause markets to over-compensate against triggering events. Second generation software systems now being implemented are operating at the level of assisting the trader rather than replacing him.

- Some of the larger trading room systems have procurement cycles measured in years not months. This adds a fly-wheel effect to the financial networks services market-place in terms of the impact of recession. Vendors active in the dealing-room sector may therefore suffer later rather than sooner the effects of the current recession i.e. the dip in orders will impact the market as late as 1993.

- The key current issue for all vendors operating in networked financial systems area is that of integrating products and services across standard platform environments. This includes:

  - Integration of information feeds with data manipulation software

  - Integration of information in video and digital formats

  - Integration of dissimilar platforms within a global network context

  - Integration for the interworking of commercially competitive services.

- Operational outsourcing remains an option for the medium-term especially for the smaller user. In this instance, vendors will need to have mastered all the component products and service skills to be able to offer a credible service:

  - Market data provision
  - Decision support software and services
  - Trade capture facilities
  - Risk management
  - Settlement and accounting modules.

  In summary this means being able to provide front-, middle- or back-office support at all levels from platform to application support and maintenance.

Exhibit II-7

Key Trading Industry Issues

- Workstation Performance
- A I as the Intelligent Assistant
- Recession
- Integration on standard platforms
- Outsourcing

F
Recommendations

Network services vendors have traditionally marketed to the financial services industry in defined or even niche sectors.

Examples abound:

- Cash management services
- Specific market data in video or digital format
- Dealing rooms
- Software for market analysis.

As markets mature and information services become more competitive a more global approach involving systems integration and network operations management is becoming necessary. Users are looking to the very largest vendors to provide them with the total solution.

Exhibit II-8 summarises INPUT's top level recommendations for addressing this new opportunity market:

- Although open systems in the Banking and Finance sector does not involve UNIX as a necessary component, vendors must propose an open networking architecture covering integration of services. This architecture must be in place as users requirements mature to the point of incorporating it in their specifications.

- Network services now operate in an increasingly complex environment. Vendors must be prepared to offer network and systems integration as well as highly focussed niche products.

- Systems operations (SO) is a natural follow on to Systems Integration (SI) especially for the medium to small user. Vendors must leverage their SO capabilities in industry sectors, where a more generic approach is valid, and incorporate them effectively into their more highly industry-specific offerings to the financial services industry.

- To sell on quality of application will involve many network services vendors forming alliances with software product and professional services vendors. The soundness of these alliances will affect the credibility of the overall offerings. The network services vendor will in most cases need to be the prime contractor in the major project business.

Exhibit II-8

Vendor Recommendations

- Market Open Systems architecture
- Complement with Systems Integration
- Offer Systems Operations
- Sell on Application Quality

III Market Analysis and Forecast

A
Financial Network Services Overview

Exhibit III-1 illustrates the analysis of the total Western European network services market. INPUT estimates that the financial network services sector represents just under 47% of this total European market, and is therefore easily the largest sector. INPUT forecasts the growth of the financial network services sector at 17% per annum on average over the period 1991 to 1996 ie. it will grow from $2.2 billion to $4.8 billion, as is illustrated in Exhibit III-2. This represents a sizeable decrease in our estimate when compared to the growth forecast in our previous (1990 programme) report. The forecasts are reconciled in Appendix A.

The principal reasons for the downgrading of our estimates are:-

- The severity and duration of the current economic downturn which is progressively affecting all countries in Western Europe to a greater or lesser extent.
- The competitiveness of the financial network services market in certain key areas, leading to price erosion on services as well as products.
- Downsizing from mainframe to networked PC environments leading to expectations of equivalent lowering in software and services costs.

Nevertheless with a CAGR of 17% per annum the financial network services market remains full of opportunities for vendors with the correct strategy and service line portfolio.

The financial EI sub-sector is growing more slowly than the financial network applications sector. In fact the downgrading of the overall growth is mostly due to the slow-down in this sector itself caused by the worldwide crisis in the banking sector.

Exhibit III-2 also shows the breakdown of the Network Applications sector into its three constituent submodes:

- Messaging including electronic mail, and computer-based voice messaging, telex and fax services when these originate from a computer-driven user system.
- EDI, currently a start-up sector in the financial services industry but expected to grow quickly as proprietary message types give way to standard EDI protocols.
- VANS and Other, including network management services, videotex and EFT.

Exhibit III-1

Network Services Market Forecast, Western Europe, 1991-1996

	User Expenditure ($ Millions Rounded)			
Subsector	1990	1991	1991-1996 CAGR (Percent)	1996
Network Applications	1,090	1,390	31	5,340
Electronic Information Services (EI)	2,940	3,320	13	6,250
Total	4,030	4,720	20	11,590

Exhibit III-2

Financial Network Services Market Forecast by Submode Western Europe, 1991-1996

	User Expenditure ($ Millions Rounded)			
Sector	1990	1991	1991-1996 CAGR (Percent)	1996
Electronic Messaging	220	290	28	1,000
EDI	-	5	95	140
VANS and Other	310	425	20	1,060
Total Network Applications	530	720	25	2,200
Electronic Information (EI) Services	1,370	1,480	12	2,600
Total Network Services	1,900	2,200	17	4,800

Banks and other financial institutions are having to look more to external vendors to ensure that development projects are completed within budget and on time. The demand for outsourced or third-party network services will consequently increase as the internationalisation of the trading markets continues. Although banks and insurance companies will in the short-term seek to maximise the utilisation of in-house resources, network-based applications solutions will be in continuing demand so long as software, information, network management and support are all integrated by vendors give to the most appropriate service solution.

1. Financial Electronic Information (EI) Services

INPUT's long-term forecasts for the EI sector should be considered in the light of continuing application of technology to new trading markets. The trading markets of the world are being forced to restructure as technology drives them forward. Currently, the most important types of financial EI services are those supporting securities data and foreign exchange dealings. This type of information currently accounts for over 60% of the financial EI market, with Reuters and Telerate the clear market leaders.

The future opportunities for new entrants to the market will involve the newer derivatives markets which are starting to spring up in financial centres around the world. These new markets have complex network applications requirements involving application software and information feeds.

For critical applications like trading, the provision of a very high level of service to the end user is key; Reuters, for example, provide a high level of maintenance and service support.

There are developing opportunities for industry-specific and "specialist" services in both the textual database and historical data analysis fields. Much of the overall growth in this area will come from links with transaction-based services, such as front-office trading and EDI applied to back and middle-office applications.

A strong presence in the Network Management Services market will provide a good entry point for these services.

2. Financial Network Applications

There are a relatively small number of vendors servicing the total Western European financial network services market. This situation is due to the fact that banking and finance purchasing decisions are highly centralised in often large organisations, thus, creating an environment that has allowed large vendors to gain significant market shares. As a result, a few key areas of the market are controlled by a small number of large vendors who have developed the applications expertise and network coverage to provide a high level of service. Increasingly, financial institutions require a communications infrastructure to deliver specific application services both to their internal operations and to their customers. Hence global coverage in networking and support becomes more critical.

Whilst in the past, banks and financial institutions have used the public networks provided by the PTOs or operated their own private networks over leased lines, it is becoming increasingly clear that European companies are looking to use managed data networks constructed over leased or public lines and offered by third party service providers such as GEIS and Infonet or the PTOs themselves. Developments of networking technologies such as frame relay and mobile data are further increasing the options available to the users. As these financial institutions attempt to link their internal computer systems together as well as to connect to those of other organisations, they inevitably meet the problem of inter-working between systems and equipment from different suppliers. As a result, the Open Systems approach is becoming more acceptable to many European financial institutions, who have traditionally relied on a proprietary "one-stop shop".

Furthermore, the chronic skills shortage has become more acutely focused within the networking sector and this is resulting in opportunities for both service providers and financial institutions. Successful vendors will be those that are prepared to exploit these changes. INPUT anticipates that banks are likely over the five-year forecast period to encourage their subsidiaries to become specialised suppliers of financial services based upon networks eg. of card services and electronic payment services for business. However the infrastructure and the operational running of these services is available as outsourced contracts to third-party vendors.

Exhibit III-3 summarises the forces for change at work in the financial network services market. Network Management Services are becoming one focus since they provide a platform from which to offer network applications both to financial institutions and to their users. This trend is reinforced by the current economic climate which causes users to seek:

- Least cost networking solutions
- Retrenchment on core business activities.

Exhibit III-3

Driving Forces Impacting Financial Networks

- Recession
- Global banking crisis
- Downsizing
- Outsourcing

Rather than purchase directly from an equipment vendor, financial institutions are looking to systems integrators, network operators and network services providers to help them overcome the skills shortage and to simplify the process of implementing complex systems. A major benefit for the vendor is that it provides significant account control over the customer. In addition, it enables the vendor to define the architecture within which the customer's system is built, and to add value to what is being directly sold.

Whilst organisations have traditionally outsourced some of the initial elements of the typical life cycle of a communications system such as design and analysis, the trend is now for the network operation and management to be outsourced as well. One key advantage to the user is that this gives financial organisations the ability to know the future cost, year by year, of processing their transactions. There are several other advantages:

- A fixed price and consequent reduction in risk,
- Insurance against the skills shortage and protection from technological obsolescence,
- Shortening the development lead time inherent in an in-house systems organisation,
- The ability to step back and get the business into focus.

Exhibit III-4 summarises the key areas in which unique selling points (USPs) can be added to vendor offerings.

Exhibit III-4

Services and Solutions

- Focussed information
- Integrated applications
- Management of data integration
- Turnkey project management
- Outsourcing of key resources

INPUT has identified five types of services vendor who are able to respond to these challenges in meeting the user requirements for global data communications, and information-based applications in the financial services area:

- The PTOs:

  Their competitive advantages are: Existing customer base and infrastructure, as well as access to substantial resources. However, they do not have naturally compatible international infrastructures, nor are they close enough to the detailed application requirements to function close to the end-users in the key trading areas.

- Computing equipment suppliers:

  IBM has had an information network for some years but has operated with a restricted sales effort into the inter-company networking area in support of applications such as EDI. It has not sufficiently encouraged shared networking for intra-company communications because this could have self-impact on private SNA network sales. IBM is now willing to propose its Information Network (IN) service as an alternative to private networking.

  Digital on the other hand has a much more rounded offering for financial users including:

  - Suitable in-house hardware;
  - The best networking strategy in the business;
  - Willingness to integrate third-party software and even facilities management into its offerings.

- Network and Computing Services suppliers:

  GEIS, Infonet, Cable & Wireless and Sprint International have a huge potential for sales of their services, through being able to create coherent network offerings and/or to install links with users' existing networks. Except for GEIS, however, they do not have sufficient in-depth experience of financial applications at the end-user level.

- Systems integrators, such as Quotron, ACT Financial Services, CGS have all the applications skills but vary in their ability to deliver via networks. EDS is particularly powerful among this group.

- Management consultancies, such as MacKinsey, PA Consulting and Andersen vary in their knowledge of the financial services area, and except for Andersen Consulting cannot match the first three groups for global network reach.

Exhibit III-5 lists the leading financial network services vendors in Western Europe. Out of these top ten vendors, five are principally EI vendors, reflecting the size of that sector in comparison with the younger network applications sector. All ten of these vendors sell services other than EI, in particular GEIS and Telekurs which provide bank processing services for international and retail banking applications. Notice the inclusion of two PTOs in this year listing. These vendors are moving as rapidly as their large size permits to take advantage of the more open regulatory environment engendered by the 1993 initiative for the European single market.

Exhibit III-5

Leading Vendors Financial Network Services
Western Europe, 1990

Company	Country of Origin	Estimated Sector Revenues ($ Millions)
Reuters	UK	560
Dow Jones/Telerate	USA	126
SWIFT	Belgium	95
Telekurs	Switzerland	85
France Telecom	France	55
GEIS	USA	40
Citicorp/Quotron	USA	37
IBM	USA	35
DBP Telekom	Germany	32
Dunn & Bradstreet	USA	30
Others		805
	Total	1,900

B
Leading Western European Country Markets

Exhibit III-6 shows the analysis of the European financial network services sector by country. France, U.K. and West Germany together account for some 69% of the total financial network services sector and are each substantially larger than any other country. However, the detailed make up of the sectors for these three leading countries varies significantly.

Exhibit III-6

Financial Network Services Comparative Country Market Forecasts Western Europe, 1991-1996

	User Expenditure ($ Millions)			
Country	1990	1991	1996	1991-1996 CAGR (Percent)
Germany	385	480	1,030	16
France	375	430	1,000	18
United Kingdom	545	600	1,110	13
Italy	145	165	400	19
Sweden	52	62	140	22
Denmark	35	42	95	18
Norway	23	27	75	23
Finland	20	24	70	24
Netherlands	80	90	180	15
Belgium	50	55	120	17
Switzerland	80	90	185	15
Austria	30	35	60	13
Spain	60	75	260	28
Portugal	3	4	20	38
Greece	7	9	30	27
Ireland	10	12	25	16
Total	1,900	2,200	4,800	17

1. Germany

Exhibit III-7 illustrates the growth of the financial network services market in Germany for the two sub-sectors of network applications and EI for the period 1991 to 1996.

In Germany the market for EI accounts for 69% of the total financial network services revenues. Nearly all new developments are being handled either by the German stock exchanges or by the leading banks which control the securities trading. INPUT does not see that this is likely to change significantly over the next few years. The network applications market sector will grow at 25% (more than twice the rate of EI sector) over the forecast period as several major projects come to fruition. Applications supporting automated credit card authorisation services which financial institutions offer to retailers, are Germany reluctantly sheds its anti-credit culture.

Liberalisation of the telecomms. sector has encouraged the growth of services over the last two years, but in 1991 signs have arisen that discussions between the Frankfurt and other regional stock exchanges will drag on and impede developments of inter-exchange systems. The adoption of EDIFACT standard EDI payment systems among German banks will, however, speed up, thus accelerating the open market component of EDI in Germany.

2. France

Exhibit III-8 illustrates the breakdown of the French financial network services market and its growth over the period 1991 to 1996. The network applications sub-sector accounted for some 40% of the total market in 1991 and the EI sub-sector 60%. The French financial services market is characterised by the number of larger computer services vendors partially, or completely, owned by banks. The slow growth in banking services generally in France has been reflected during 1991 in the fortunes of these vendors, several of whom have reported flat revenue growth.

France Telecom has been instrumented in activating the network management subsector of the network applications sector by winning major networks only operations management contracts in both banks and other sectors.

3. U.K.

Exhibit III-9 illustrates the breakdown of the U.K. financial network services market between the network applications and the EI sub-sectors. With the London International Stock Exchange (the ISE) being the largest in Europe and the leading installer of electronic systems, it is not surprising to see that the EI sector in the U.K. accounts for over 67% of the total market. Both the securities and wholesale banking markets have undergone major restructuring since the U.K. deregulated its equities market in 1986 and many important players have pulled out of one or other of the capital market-making activities in order to concentrate on the markets each knows best.

The U.K. does not have the very large number of small to medium-sized retail banks seen in many other European countries. The U.K. financial network services market has, therefore, already undergone much of the restructuring that other European markets are only now starting to experience. The trading markets of the City of London have exhibited a tendency to continue with the current level of technology until the UK economy has picked up. On the other hand major capital projects, such as dealing room installations which are on a long implementation timescale, typically one to two years, have not yet experienced any economic downturn. The downturn in the market for these products is likely therefore to follow the end of the economic recession.

4. Other Countries

Exhibit III-10 to III-14 illustrate the breakdown of the financial network services market for the next five most important country markets. Exhibit III-15 gives the breakdown for the remaining eight smaller country markets. The EI sub-sector accounts for 62% and network applications the remaining 38% of the total expenditure. Looking to the future it is only in Spain that the network applications sector will overtake the EI sector by 1996, although in all countries the gap will narrow significantly.

Exhibit III-7

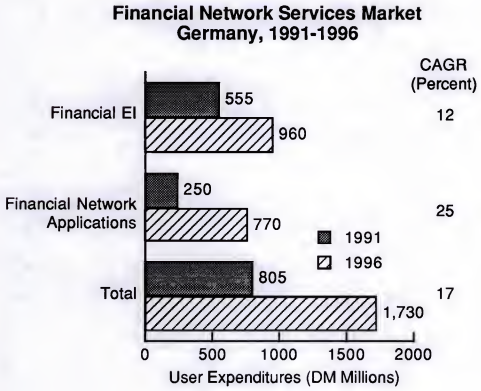


Exhibit III-8

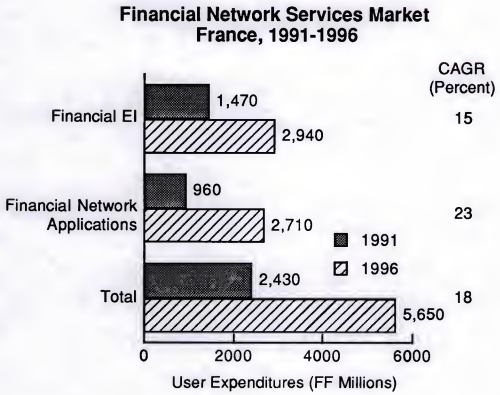


Exhibit III-9

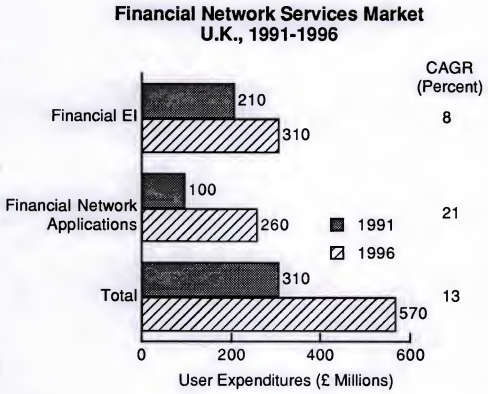


Exhibit III-10

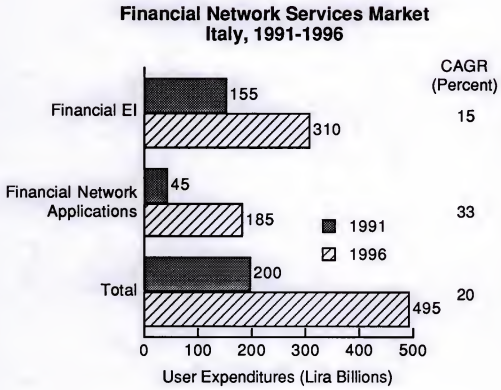


Exhibit III-11

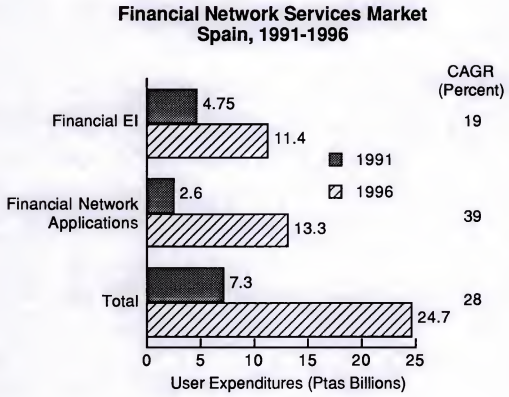


Exhibit III-12

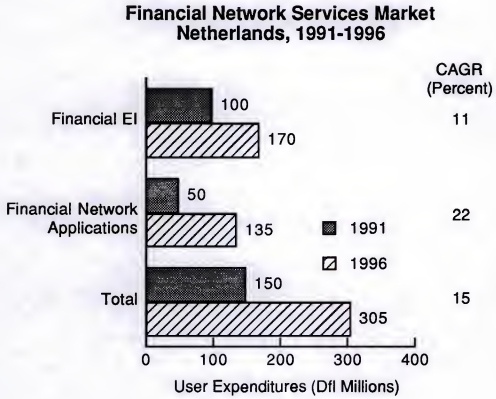


Exhibit III-13

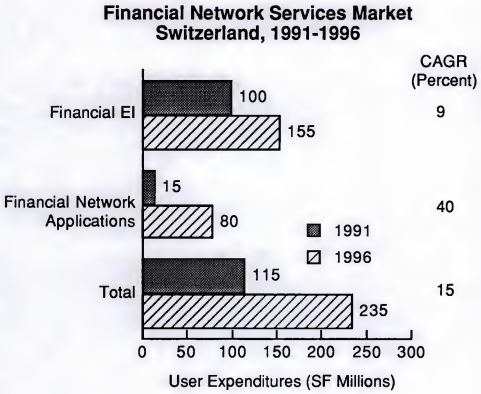


Exhibit III-14

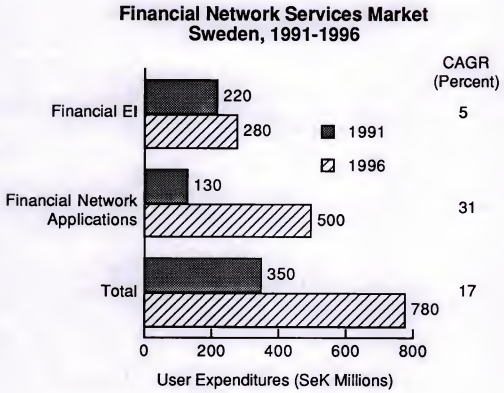
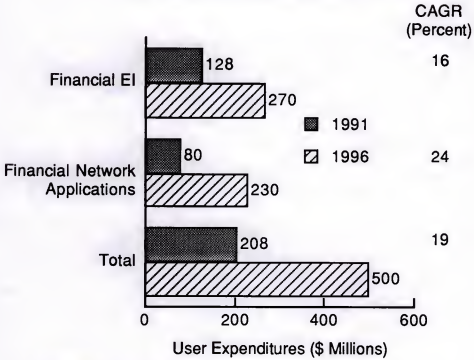


Exhibit III-15

Financial Network Services Market
The Rest of Europe*, 1991-1996



* This chart includes the following countries:

Austria	Greece
Belgium	Ireland
Denmark	Norway
Finland	Portugal

IV Competitive Environment and Vendor Profiles

A
Introduction

The following four profiles are chosen to illustrate some of the different vendor companies active in the financial network services sector and their different strategies. The profiles are the standard INPUT profiles taken from the Vendor Analysis Programme, an INPUT subscription programme offering profiles on over 300 important software and services vendors active in Western Europe. As major network services companies, all four have been updated during 1991.

The companies profiled and their significance in the market place are as follows:

- AT&T Istel is the Europe-based computer services subsidiary of the world's largest telecommunications company. It has been an important player in the UK network services sector and is seeking to expand throughout Western Europe in the first half of the 1990s. It's aim is to be among the top three computer services groups by the end of the decade.

- SG2 is one of France's important computer services companies with its origins in the banking sector. Originally the internal computing department of the Societe Generale (SG) it was set up as a separate subsidiary at the start of the 1970's and grew fast during the heyday of processing services to be for a short time France's second largest service company. Its revenues topped FF1.3 billion in 1984 and its parent decided to partially divest itself of its interest in SG2. The company's fortune fell in the late 1980's and it has now been restructured, refinanced and in 1990 its revenues once again reached the FF1 billion threshold.

- Reuters and Telerate, the subject of the other two profiles, are the numbers one and two companies in the Electronic Information (EI) services sector in Western Europe. Both have been experiencing during 1991 much slower growth than that which they had become accustomed to in the 1980's.

B
AT&T Istel Limited Company Profile

AT&T ISTEL LIMITED
Prospect Hill
P.O. Box 5
Redditch
Worcestershire B97 4DQ
United Kingdom
Tel: 44 527 64274
Fax: 44 527 63360

CEO: Chris S. Chiles
Status: Subsidiary of AT&T U.S.
Number of Employees: 2,300
Revenue (FYE 31-12-90): £ 130 million

The Company

AT&T Istel was founded in 1979 as BL Systems Ltd. It was formed from the Computer Services and Communications operations within British Leyland, the British automobile manufacturer. The company was wholly owned by British Leyland (subsequently becoming the Rover Group), and still derives a major element of its revenues from services supplied to this group.

AT&T Istel was privatised in June 1987 in a management-led employee buyout from the Rover Group. The share ownership of the company following the privatisation was as follows:

Senior management	38%
Employees	28%
Institutional investors	34%

In 1989, AT&T acquired Istel for 180 million and in March 1990, the company was renamed AT&T Istel Ltd. It employs 2,300 people at its offices in the U.K., the U.S. and Germany.

The company focuses on delivering computer systems and data communications services to the following sectors, engineering, manufacturing, travel, retail, distribution, healthcare and finance.

AT&T Istel has set itself the mission of being in the top three IT services companies in Europe within five years through both organic growth and acquisitions.

Exhibit A

KEY EXECUTIVES

NAME	POSITION
John Leighfield	Chairman
Dave A. Overtom	Market Director
Ken Humphries	PR Manager

In March 1991, AT&T Istel acquired the German software house Infoplan with a turnover of 9 million and 150 employees. Its main areas of activitiy are in computer-integrated manufacturing (CIM), production planning and control (based on the integrated software solution Indus), facilities management, networking for personal computers, computer consultancy and software development projects for large IBM computers.

During 1990, in line with this strategy, the company acquired three companies:

- Computer Systems Development (CSD) Ltd was acquired from the British & Commonwealth/Atlantic Group. The acquisition included the rights to all CSD's products and its customer base. The products include Impcon. Impcon filled a gap in AT&T Istel's product portfolio for discrete parts manufacturing, following the loss of its distribution agreement with NCA for the Maxcim product, complementing the existing Processmark range of applications for process industries. In the early 80's AT&T Istel was a distributor of IMPCON.

- AT&T Istel acquired Daton Systems Limited, a Unix systems house and systems integrator and ICL and Bull value added reseller. Daton has 42 employees and a turnover of 3.5 million. Daton has since purchased WP Associates Ltd, a Phillips and Bull value added reseller. WP Associates has 15 employees and a turnover of 1 million and develops applications using Oracle and Dataflex.

- AT&T Istel's third acquisition was Chorus Software Ltd, one of the leading suppliers of financial accounting software for IBM computers in the U.K. Chorus Software employs 21 staff and is an IBM appointed agent for many of its computer systems. The company develops a range of software including the Chorus financial accounting package which is distributed throughout the U.K. by a network of 30 agents. Chorus has over 250 customers in the following industries: automotive, music, chemical, transport and retail.

In 1990, AT&T Istel established two new companies:

- AT&T Istel Global Messaging Services Limited, since re-named AT&T Easylink Services Limited, which offers three main messaging services; AT&T Mail - an electronic mail service, EDICT - one of the world's leading electronic data interchange services, and enhanced fax. Other products and services will be added progressively during 1991. The company employs over 100 people drawn from both AT&T and Istel.

- In May 1990, AT&T Istel Computer Systems Limited was established to market a line of AT&T computer systems products in the U.K. and Ireland. The products include client/server systems, high performance computers, StarLAN/StarGroup system network hardware and software, and related terminals and peripherals.

Exhibit B

SUBSIDIARIES

NAME	COUNTRY	%OWNED
AT&T Istel Impcon Solutions Ltd	U.K.	100
Daton Systems Ltd	U.K.	100
Chorus Software Ltd	U.K.	100
AT&T Easylink Services Ltd	U.K.	100
AT&T Istel Computer Systems Ltd	U.K.	100
Personal Networking Ltd	U.K.	100

As of December 1990, AT&T Istel employed 2,300 staff.

Key Products and Services

AT&T Istel's activity areas are computer- integrated manufacturing (CIM), software products and turnkey systems, network services, professional services and processing services.

Software Products and Turnkey Systems

AT&T Istel's skills and experience in the CIM area come mainly from its association with the Rover Group companies from where the bulk of its revenues in the manufacturing sector are derived. It is also active in the health, travel, financial, retail and distribution sectors, although to a lesser degree. Below are a few of its packages:

PRODUCT	DESCRIPTION
WITNESS	Visual interactive modelling system
VISIT	Vehicle routing and delivery scheduling system
COMET	Electronic messaging
EDICT	Electronic data interchange
PYRAMID	Manpower planning model
TRAVELBANK	Travel industry applications

Most of its products can be bundled as turnkey systems.

Network Services

AT&T Istel operates a nationwide leased network service called INFOTRAC. The services offered via Infotrac include E-mail, EDT and EIS for the travel industry, retail communications, financial services and videotext services.

Professional Services

AT&T Istel provides its customers with a wide range of products and services, including industry-specific bespoke systems, consultancy and project management.

Processing Services

AT&T Istel provides remote, batch-orientated services and on-line transaction processing services. The company specialises in IBM mainframe bureau processing, commercial and engineering timesharing, and hot restart disaster recovery services. It also offers a systems operations service using its central processing centre.

Market Analysis

Exhibit C

1990 MARKET ANALYSIS BY INDUSTRY SECTOR (AT&T DEFINITIONS) (£ MILLIONS)

INDUSTRY SECTOR	REVENUE	PERCENT
Manufacturing & Engineering	61.1	47
Financial Services	26.0	20
Health	13.0	10
Leisure	7.8	6
Distribution	2.6	2
International	5.2	4
Other	14.3	11
TOTAL	**130.0**	**100**

Exhibit D

1990 MARKET ANALYSIS BY PRODUCT (AT&T DEFINITIONS) (£ MILLIONS)

PRODUCT	REVENUE	PERCENT
Computer Applications Processing	40.3	31
Systems and Consultancy	36.4	28
General Systems	23.4	18
Value-Added & Data Services	29.9	23
TOTAL	**130**	**100**

Exhibit E

1990 MARKET ANALYSIS BY INDUSTRY SECTOR (£ MILLIONS)

INDUSTRY SECTOR	REVENUE	PERCENT
Manufacturing	61	47
Banking/Finance/Insurance	26	20
Distribution (Retail)	3	2
National Government (Civil)	13	10
All Other	27	21
TOTAL	**130**	**100**

Exhibit F

1990 MARKET ANALYSIS BY INPUT SERVICE MODE (£ MILLIONS)

INPUT SERVICE MODE	REVENUE	PERCENT
Processing Services	40	31
Network Services	30	23
Application Software Products	5	4
Professional Services	32	25
Systems Operation	5	4
Systems Integration	5	4
Turnkey Systems	13	10
TOTAL	**130**	**100**

Financial Information

Exhibit G

FIVE-YEAR FINANCIAL SUMMARY FOR AT&T ISTEL LTD (FYE 31-12) (£ MILLIONS)

YEAR	1986	1987	1988	1989	1990
Revenues	60.8	69.2	85.0	108	130
Annual Growth Rate (%)	22	14	23	27	20
Profit Before Taxes	2.2	5.0	8.0	-	-
Annual Growth Rate	29	127	60	-	-

C
SG2 Company Profile

SG2
12-14 avenue Vion-Whitcomb
BP 215-17 - 75765 Paris Cedex 16
France
Tel: 33 1 40 50 22 22
Fax: 33 1 40 50 09 95

Chairman: Jean Krautter
MDs: Alain Bridenne/Alain Creusillet
Status: Subsidiary
Number of Employees: 2,000
Revenue (FYE 31-12-1990): FF 1,004 million

The Company

SG2 was founded in 1970 and is once again a wholly owned subsidiary of Societe Generale, one of France's top ten banks. SG2 is one of the top ten French software and services vendors.
The company is organised in the following divisions:

- Services (electronic payment facilities, facilities management, processing services)
- Engineering (standard and customised software and software packages)
- Organisation Consultancy

In May 1990, SG2 acquired MC2, France.

During 1990, SG2 acquired I2A, Spain.

Exhibit A

KEY EXECUTIVES

NAME	POSITION
Alain Creusillet	Strategy and Development Director
Alain Bridenne	Ingenierie Director
Dominique Bellocq	Finance Director
Jean-Pierre Pandin	Marketing Director
Christian Gras	International Director

SG2 has offices in 33 French cities and the following subsidiaries.

Exhibit B

SUBSIDIARIES

NAME	COUNTRY	% OWNED
SG2 SA	France	100.00
SG2 Gestion	"	100.00
SG2 Genie informatique	"	100.00
SG2 Etudes regionales	"	100.00
SG2 Services	"	100.00
Orgaconsell	"	50.94
Ordina	"	100.00
Paytronics	"	49.96
Cofi	"	100.00
Technique et Assistance	"	100.00
SG2 Benelux	Belgium	100.00
SG2 Afrique	Ivory Coast	95.94
I2A	Spain	51.00
SG2 Hongrie	Hungary	49.00
SG2 Tunisie	Tunisia	20.00

As of December 1990, SG2 employed 2,000 staff.

Exhibit C

1990 EMPLOYEE ANALYSIS (SG2 CLASSIFICATION)

EMPLOYEE CATEGORY	NUMBER OF EMPLOYEES
Administration and Management	281
Commercial	83
Production	1,636
TOTAL	**2,000**

Key Products and Services

SG2 is organised in the following divisions:

- Value Added Services (electronic payment facilities, facilities management, processing services)
- Engineering (customised and standard software and software packages)
- Organisation Consultancy

SG2 is active in most market sectors as defined by INPUT. They are as follows:

- Processing Services
- Software Products
- Network Services
- Turnkey Systems
- Professional Services
- Systems Integration

Processing Services

These services are mostly provided through SG2 Services to the banking and distribution sectors. SG2 processes financial transactions and manages payment authorizations.

Software Products

SG2 markets and develops a large number of software products to support the processing activity in the banking and finance sector. The software packages support financial management operations, file transfer and financial transactions for branch networks and SWIFT interfaces. SG2 also develops expert system shells.

Professional Services

SG2 professional services are tailored to support its technology and applications. This includes IS auditing, project management, training and custom made applications.

System Integration

SG2 not only offers system integration to support its customers with their present systems configuration but also designs systems for specific applications.

Turnkey Systems

SG2 uses its SG2 ETUDES REGIONALES as a distributor for its turnkey system applications. SG2 offers turnkey system solutions based on BULL, DEC, Hewlett-Packard and IBM equipment.

Market Analysis

Exhibit D

1990 MARKET ANALYSIS BY DIVISION (FF MILLIONS)

DIVISION	REVENUE	PERCENT
Services	552.2	55
Engineering	391.6	39
Consultancy	60.2	6
TOTAL	**1,004**	**100**

Exhibit E

1990 MARKET ANALYSIS BY GEOGRAPHIC AREA (FF MILLIONS)

COUNTRY	REVENUE	PERCENT
France	966	96
Belgium	27	3
Hungary	-	-
Tunisia	-	-
Spain	8	1
Ivory Coast	3	<1
TOTAL	**1,004**	**100**

The subsidiaries in Hungary (1990 revenues FF 4 million) and Tunisia (1990 revenues FF 2 million) are not included.

The industry analysis of SG2's 1990 revenues is as follows:

Exhibit F

1990 MARKET ANALYSIS BY INDUSTRY SECTOR (FF MILLIONS)

INDUSTRY SECTOR	REVENUES	PERCENT
Manufacturing	140	14
Banking/Finance	583	58
Insurance	40	4
Distribution	70	7
Transportation	20	2
Local Government National Government Telecommunications	81	8
Services	70	7
TOTAL	**1,004**	**100**

The analysis of SG2's revenues across INPUT's market sector definition is as follows:

Exhibit G

1990 MARKET ANALYSIS BY INPUT SERVICE MODE (FF MILLIONS)

INPUT SERVICE MODE	REVENUES	PERCENT
Processing Services	321	32
Network Services	251	25
Application/ Systems Software Products	20	2
Professional Services	301	30
Systems Operations	30	3
System Integration	31	3
Turnkey Systems	50	5
TOTAL	**1,004**	**100**

Financial Information

The following is a financial summary of SG2's revenues for the past four years:

Exhibit H

FOUR-YEAR FINANCIAL SUMMARY (FYE 31-12) (FF MILLIONS)

YEAR	1987	1988	1989	1990
Revenues	728	781	861	1,004
Annual Growth Rate (%)	10%	7%	10%	17%
Profit/Loss before Taxes	(7.9)	32.8	20.2	39.7
Profit/Loss after Taxes	(12.8)	32.4	20.4	31.7

One percent of 1990 revenues were derived from hardware sales.

D
Reuters Holdings plc Company Profile

REUTERS HOLDINGS PLC

U.K.
85 Fleet Street
London EC4P 4AJ
Tel: 44 1 250 1122
Fax: 44 1 324 5874

France
101 Rue Reaumur
75080 Paris Cedex 01
Tel: 33 1 42 21 50 00
Fax: 33 1 40 26 67 75

Germany
Postfach 170465
D-6000 Frankfurt/Main 17
Tel: 49 611 71060
Fax: 49 611 7106120

Switzerland
Case Postale 436
1211 Geneva 6
Tel. No.: +41 22 735 5566
Fax No.: +41 22 860462

Chairman: Sir Christopher Hogg
Managing Director and Chief Executive: Peter Job
Status: Public
Number of Employees: 10,810
Revenue (FYE 31-12-90): £1.4 billion

The Company

Reuters is the world's leading electronic publisher. It supplies the global business community and news media with a wide range of facilities including real-time financial data and transaction services, access to numeric and textual historical databases, news and news pictures. Reuters has a controlling interest in Visnews, the international television news agency, and Reuter group companies design and install trading room systems.

Reuters obtains information from around 160 stock exchanges and over-the-counter markets round the world and from a network of some 1,300 journalists, photographers and cameramen. Reuters distributes information through approximately 205,000 connections to its worldwide network, including video terminals, teleprinters and direct feeds to clients' computers.

Reuters has 10,810 employees in 180 offices in 78 countries.
Key events in the historical development of Reuters are:

1973: Launched the computerised Reuters Monitor Service which gives subscribers access to a comprehensive real-time database.

1981: Introduced the first of the Reuters transaction products, the Reuters Monitor Dealing Service which was to emerge as a major element in globalisation of the foreign exchange markets.

1985: Acquired Rich Inc. of Chicago, the world's leading supplier of trading room systems, bringing an important new product range to the Reuters group.

1987: Launch of Equities 2000 and Commodities 2000, the first Reuter services carrying data delivered over the integrated data network - IDN. IDN is the company's largest ever development designed to deliver internationally by satellite and cable links more data at higher speeds to more sophisticated workstations.

1987: Acquired I P Sharp Associates of Toronto, following the acquisition of Finsbury Data Services of London the previous year, marking Reuters entry into the historical information field with high quality textual and numerical databases to serve the financial and business worlds.

1989: Introduced a new transaction product, Dealing 2000, allowing foreign exchange dealers to conduct four simultaneous conversations on screen.

1990: Launch of Money 2000, the first real-time product carrying data in logical form.

Reuters' share price fell sharply in October 1990 as a result of delays in the company's product launches particularly Dealing 2002/II.

Exhibit A

SHAREHOLDERS

SHAREHOLDERS	% OWNED
ABU DHABI INVESTMENT AUTHORITY	7.1
DAILY MAIL AND GENERAL TRUST PLC	6.9
OTHERS	86.0

Exhibit B

SUBSIDIARIES

NAME OF SUBSIDIARY	COUNTRY	% OWNED
Reuter Nederland BV	Netherlands	100
Reuters Services SARL	France	"
Reuters AG	Germany	"
Reuters Australia Pty Ltd	Australia	"
Reuters Hong Kong Ltd	Cook Islands	"
Reuters Information Services Inc	USA	"
Reuters Italia S.p.A	Italy	"
Reuters Japan Kabushiki Kaisha	Japan	"
Reuters Limited	U.K.	99.7
Reuters Middle East Ltd	Cook Islands	100
Reuters SA	Switzerland	"
Reuters Singapore Pte Ltd	Singapore	"
Reuters Svenska Aktiebolag	Sweden	"
Rich Inc.	U.S.A.	"
L.H.W. Wyatt Brothers Ltd	U.K.	"
Instinet Corporation	U.S.A.	"
Reuter File Ltd	U.K.	"
Visnews Ltd	U.K.	51

Key Products and Services

Reuters' services are focused in three main product areas:

1) Information products

Information about and for the world's money, capital, equity, commodity and energy markets. This information is packaged for the use of executives outside as well as within the financial industry. Within this product area are products that add value to information by enabling clients to analyse it in customised formats.

Other information-handling products include terminals and communications systems for trading rooms. These address customers' needs to handle large amounts of data from many sources in a cost effective manner to analyse information more rapidly and effectively and, in some cases, to gain access to information at any number of work stations.

2) **Transaction Product**s aim to help traders, dealers and brokers active in foreign exchange, stocks, bonds, futures and options to trade with counterparties through Reuters communications and trading networks. They are designed to be fast, reliable and confidential.

The Reuters products and services in this category are categorised as:

- Foreign Exchange and Financial Instruments:
  - Dealing 2000
  - Globex
  - Monitor Bonds Dealing
  - Monitor Dealing

- Equities:
  - Instinet.

3) **Media Products.** Reuters supplies newspapers, magazines and broadcasters with news, news graphics, news pictures and television newsfilm. Its network of staff, reporters, editors and photographers are supported by part-time reporters, photographers and cameramen working in almost every country in the world.

Market Analysis

Exhibit C

1990 MARKET ANALYSIS BY GEOGRAPHIC AREA* (£ MILLIONS)

GEOGRAPHIC AREA	REVENUE	PERCENT
Reuters Europe, Middle East, Africa	874.3	63.3
Reuters Asia	271.6	19.7
Reuters America	234.1	17.0
TOTAL	**1,380**	**100**

Inter group sales accounted for 11.0 millions.

**As reported by Reuters*

Exhibit D

1990 MARKET ANALYSIS BY PRODUCT GROUP (£ MILLIONS)

PRODUCTS GROUP	REVENUE	PERCENT
Information Products	1,079.6	78.9
Transaction Products	199.3	14.5
Media Products	90.1	6.6
TOTAL EXERNAL SALES	**1,369**	**100**

Exhibit E

1990 MARKET ANALYSIS BY INPUT DELIVERY MODE WESTERN EUROPE (£ MILLIONS)

DELIVERY MODE	REVENUE*	PERCENT
Network Services	570	77
Turnkey Systems	75	10
Software Products	35	5
Professional Services	60	8
TOTAL	**740**	**100**

*INPUT estimates (excluding media products)

Exhibit F

1990 MARKET ANALYSIS BY EUROPEAN COUNTRY (£ MILLIONS)

COUNTRY	REVENUE*	PERCENT
FRANCE	150	19
GERMANY	160	20
ITALY	70	9
U.K.	236	30
DENMARK	8	1
FINLAND	7	1
NORWAY	10	1
SWEDEN	25	3
BELGIUM	14	2
NETHERLANDS	28	3
AUSTRIA	8	1
SPAIN	30	4
SWITZERLAND	40	5
GREECE	2	<1
IRELAND	4	1
PORTUGAL	3	<1
TOTAL WESTERN EUROPE	**795**	**100**
EASTERN EUROPE	**9**	**-**
MIDDLE EAST, AFRICA	**70**	**-**
TOTAL EUROPE, MIDDLE EAST & AFRICA	**874**	**-**

*INPUT Estimates.

Financial Information

Exhibit G

FIVE YEAR FINANCIAL SUMMARY (FYE 31-12) (£ MILLIONS*)

YEAR	1986	1987	1988	1989	1990
Revenue	620	867	1,003	1,187	1,369
Annual Growth Rate		40%	16%	18%	15%
Profit before Taxes	130	179	215	283	320.1
Profit after Taxes	81	110	134	181	208.4
% Net Profit	13%	13%	13%	15%	
EPS	19.4p	26.0p	32.1p	43.6p	49.5p

* *exchange rate: £ 1 = US$1.61*

E
Telerate Company Profile

TELERATE, INC.
Winchmore House
12/15 Fetter Lane
London EC4A 1BR
United Kingdom
Tel: 44 71 583 0044
Fax: 44 71 583 1837

CEO: Carl Valenti, President
Status: Dow Jones subsidiary
Number of Employees: 2,500
Revenue (FYE 31-12-90): $ 544 million

The Company

Telerate, Inc. is a diverse, global corporation offering an international database of real-time financial information, decision support products and electronic transaction services.
Telerate Systems Incorporated was founded in 1969 by Neil S. Hirsch. In 1980, Telerate, Inc., the holding company, was organised in Delaware. The company went public on April 27, 1983, raising $88.0 million in a 4.4 million share offering by Goldman Sachs and Rothschild Inc. It was the third company to be listed on the NYSE on the day it went public.

In late 1985, Telerate acquired CompuTrac, a provider of technical analysis software.

Two years later, in October 1987, Telerate acquired Toronto based CMQ Communications Ltd., the leading equities data provider in Canada.

In 1989, Telerate acquired FX Development, a Silicon Valley supplier of trading room software and system integration products.

Dow Jones & Company, the majority shareholder of Telerate's common stock, acquired the remaining publicly-held shares in Telerate, Inc., which resulted in the merger of Telerate with Dow Jones in January 1990.

Telerate's extensive database includes rates, prices, quotes and news from a worldwide network of contributors, market makers, exchanges, financial news wires, analysts and others.

The company's decision support products combine tick-by-tick data with built-in analytics, providing users with the tools they require to identify trading opportunities the instant they occur.

The Trading Service enables traders anywhere in the world to monitor and execute transactions instantaneously.

Telerate is committed to expanding its position as a significant force in the global financial market place and is aggressively pursuing new opportunities to meet its future business objectives.

Key Products and services

Telerate is organised in five business areas:
- Financial Information Services
- Delivery Systems
- Decision Support Services
- Telerate International Quotations (TIQ)
- The Trading Service (TTS)

1. Financial Information Services

Standard Telerate; The Standard Telerate service offers on-line real-time financial data and news.

Telerate Matrix; On-line real-time financial data and news delivered with custom page composition using colour graphics and analytics.

Optional Services; Data and analyses from independent financial consulting firms and news services delivered via the Telerate network.

The Energy Service; On-line real-time information on the global energy markets.

2. Delivery Systems

Telerate Digital Page Feed (TDPF); Digital data feed for customer-owned workstation environments.

Telerate Access Service (TAS); Dial-up access to the Telerate network using customer's own PC.

Telerate Information Platform; A switching system that integrates a bank's incoming data, regardless of source and internally generated data (reporting systems, proprietary analytics, front and back office accounts) into a single resource and distributed database.

Companion Programmes Profitmaker & Dealmaker; Dealing support and risk management programmes based on Open systems standards.

3. Decision Support Services

Teletrac; Real-time technical analysis.

Tactician; Real-time fundamental analysis.

Computrac; Dial-up charting and technical analysis using IBM or Apple Macintosh PCs.

4. Telerate International Quotations (TIQ)

Quotations on equities, commodities and futures & options. The range of products include;

TIQ Marketlan; LAN-based workstation connected to TIQ.

TIQ Access; PC accessing TIQ, Telerate network and news services.

Telerate Digital Quote Feed (TDQF); Record-based digital feed for exchange-oriented data.

5. The Trading Service (TTS)

A global bank trading room system operating via a dedicated digital X25 network. TTS automatically interfaces with front office risk management and back office processing systems, eliminating errors in the dealing process.

Market Analysis

Exhibit A

1990 WORLDWIDE MARKET ANALYSIS BY GEOGRAPHIC AREA ($MILLIONS)

GEOGRAPHIC AREA	REVENUE*	PERCENT
Americas	395.5	53
Europe	262.0	36
Asia/Pacific	60.5	8
Others ie. Middle East/Anglia	18.4	2
TOTAL	**736.4+**	**100**

* INPUT estimates : includes all Dow Jones Information Services Division revenues

Exhibit B

1990 WESTERN EUROPEAN MARKET ANALYSIS BY INDUSTRY SECTOR
($ MILLIONS)

INDUSTRY SECTOR	REVENUE*	PERCENT
Manufacturing (Discrete)	39	15
Manufacturing (Process)	13	5
Banking/Finance	136	52
Insurance	29	11
Distribution (Retail)	3	1
Distribution (Wholesale)	-	-
Transportation	3	1
Utilities	5	2
Local Government	8	3
National Government - Civil - Defence	2	< 1
Telecommunications	5	2
Services	7	3
All Other	12	5
TOTAL	**262.0**	**100**

*INPUT estimates

Exhibit C

1990 WESTERN EUROPEAN MARKET ANALYSIS BY INPUT DELIVERY MODE ($ MILLIONS)

INPUT DELIVERY MODE	REVENUE	PERCENT
Processing Services	-	
Network Services	262.0	100
TOTAL	**262.0**	**100**

Financial Information

The following table provides a five-year summary of Telerate's financial performances as reported in the Telerate Inc. and Don Jones Annual Reports:

Exhibit D

FIVE YEAR FINANCIAL SUMMARY (FYE 31-12)($ MILLIONS)

YEAR	1986	1987	1988	1989	1990
Revenue	232.3	335.8	440.4	505.9	543.8
Annual Growth Rate	-	45%	31%	14.9%	7.5%
Profit before Taxes	96.9	138.8	-	NA	NA
Annual Growth Rate	-	43%	-	-	-
Profit after Taxes	43.2	75.2	-	-	-
Annual Growth Rate	-	74%	-	-	-
Earnings per Share*	0.49	0.79	-	-	-
Annual Growth Rate	-	61%	-	-	-

* Restated to reflect a 2-for-1 stock split, in the form of a 100% stock dividend, on October 13, 1987.

A Forecast Reconciliation 1990-1991

Exhibit A-1 shows the changes made in this years forecast in comparison to that of the previous year.

Converted to US dollars, a change of around 10% is shown in the assessment of the 1990 Western European market for Financial Network Services. Given a general appreciation of European currencies against the dollar during 1991 accounting for anything between 8% and 22% increase in the exchange rates being used, INPUT has reassessed the 1990 market for EI marginally downwards. The Network Applications market assessment remains virtually the same.

In terms of future forecast growth the table shows that the 1991 research indicates considerably lower growth for both the EI and the Network Application sectors than forecast last year.

Exhibit A-1

Financial Network Services Market
Reconciliation of Market Forecast
Western Europe 1990-1991

	1990 Market			1995 Market			1990-1995 CAGR Forecast in 1990	1991-1996 CAGR Forecast in 1991
	1990 Report	1991 Report	Variance	1990 Report	1991 Report	Variance		
Network Applications	530	580	+9.4	2,250	1,750	-22	34	25
Electronic Information (EI) Services	1,200	1,320	+10	2,900	2,300	-21	19	12
Total	1,730	1,900	+9.8	5,150	4,050	-21	24	17