SOFTWARE AND SERVICES MARKET

EUROPE 1992 - 1997

BANKING AND FINANCE SECTOR

INPUT

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Software and Services Market Europe, 1992-1997—Banking and Finance Sector

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Abstract

This study analyses the computer software and services market in the banking and finance sector for Western Europe and its growth potential over the period 1992-1997.

INPUT defines the banking and finance sector as covering the banking market and the securities market. The banking market encompasses retail, wholesale and international banking. The securities market comprises equities, bonds and other forms of securities exchanges.

This study covers seven delivery modes of software and services, as defined by INPUT. It reviews all categories of third-party vendors selling to the banking and finance sector, including software and services organisations owned by groups of financial institutions, such as co-operative processing centres for savings and co-operative banks.

The following key issues are discussed: the effect of the recession on global and European banking, the pause in IS expenditure plans caused by it, the requirement for banks to redesign their prime databases to customer name structures and launch new competitive financial services for corporate and private customers. The report considers the major restructuring of European banking and finance markets prior to 1993 and the likely repercussions in the European software and services market. Particular attention is paid to the role of software application products as a prime delivery mode in this sector.

The study identifies leading vendors in the overall Western European banking and finance market, in the two subsectors of banking and securities, and by major Western European country. Profiles of six vendors supplying software systems to the banking and finance sector are included to illustrate different vendor strategies as a function of vendor background and country market.

Challenges for the 1990s to vendors in the banking and finance sector are identified. In addition, recommendations are made to vendors active in this market.

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Exhibits (Continued)

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I

Introduction

A
Objectives

This report is produced as part of INPUT's Information Services Programme—Europe, and is an update of the study carried out in 1991.

INPUT analyses the Western European software and services market by three main parameters:

- Delivery mode
- Country
- Industry sector.

In 1991 and 1992, a number of key vertical industry sectors were specifically researched by INPUT. This document has been produced to report on the Banking and Finance Industry sector.

The objectives of this study are to:

- Create a clear picture of the current structure of the Western European banking and finance market and the related software and services sectors

- Understand the major forces that are affecting this sector, in particular the effects of:

  - Recession
  - Downsizing
  - Outsourcing of software services/solutions.

- Identify the major actions being taken by vendors as a result of current pressures and the resulting changes to the competitive environment over the next few years

- Estimate the size and structure of the software and services market for the Western European banking and finance sector and its growth potential to 1997

- Research the current attitudes of vendors and end users in the banking and finance sector towards application software products and their maintenance

- Identify the major differences in software and services supply to the different national banking and finance markets within Europe and how these might change under the impact of current conditions

- Recommend possible strategies for vendors in the banking and finance sector for the 1990s and highlight new opportunity markets.

B

Industry Structure

In the 1980s the banking and finance market was made up of a number of discrete services supplied by specialist financial institutions. In general, retail banking was separate from house loan financing, which was separate from merchant banking and international banking. Only the larger retail banks might have been involved in the majority of these different financial services.

In nearly all European countries, the securities market was completely separate from the banking sector. Specialist securities houses offered broking and investment services in equities, bonds and other forms of securities. The main exception has been Germany, where private banks have been the only financial institutions allowed to handle securities trading.

By 1990, the picture had started to change radically. European Commission deregulation is causing the boundaries between these traditionally separate financial activities to blur. Retail banks are moving into insurance, equity investment services and home loans. House-financing institutions are moving into retail banking, as are insurance institutions and even retail shopping chains.

Today it is not practical to try to analyse the Western European banking and finance market by different types of financial institution, only by their activities and the types of software and services these activities demand. Because the activities of securities trading and its associated software and services are so different from banking activity, this report breaks the Western European banking and finance market into two subsectors:

- Banking market
- Securities market.

C
Scope

This study reviews the industry-specific software and services market for the banking and securities sector of Western Europe, for the period 1992 to 1997. It excludes software and services that can be considered cross-industry, such as systems software products, or applications like office automation.

The study also covers any software and services demand generated by the insurance and retail sectors in the area of banking and securities services. However, it does not deal with the software and services demand for insurance services or retail shopping, which are covered by INPUT in separate vertical market reports in the 1992 Market Analysis Programme—Europe. This study has included EFTPoS links between retail outlets and banks because such links are seen as part of banking, not retail.

The report covers independent software vendors and equipment vendors selling software and services to the banking and finance sector. A number of key independent vendors are totally or partially owned by financial institutions. In forecasting the size of the Western European banking and finance market, INPUT includes only end-user revenues gained by third-party vendors and excludes revenues gained from parent organisations that can be defined as captive revenues.

INPUT defines captive revenue as that gained by a vendor from a parent organisation that owns more than 50% of the vendor. In the area of banking and finance, the definition of what is and what is not captive revenue is not easily determined in all cases.

For example, many French banks in the late 1960s and early 1970s set up their internal IS departments as separate companies. These are now some of France's leading independent vendors.

There is also a tendency for the parent bank to go for open tender and not to award contacts to its daughter software and services company automatically. This pattern is making a clear definition of what is and what is not captive revenue difficult. The grey area between captive and non-captive revenue in the banking and finance market is likely to become greyer as the 1990s proceed.

In Germany and Scandinavia, there are many joint or co-operatively owned processing centres for savings, co-operative and retail banks. These centres supply not only central processing services, but also IS consultancy, software products, custom software development and network services. Some supply these services only to their share-holders; others sell also to third-party financial institutions. Similarly, in other European countries there are credit and debit card processing centres owned by groups of retail banks, as well as jointly owned inter-bank clearing centres.

Because no individual bank owns a majority of the shares in these closed user group (CUG) processing centres, INPUT does not define these centre revenues as captive, and therefore includes the revenues in the market sizing and forecasts.

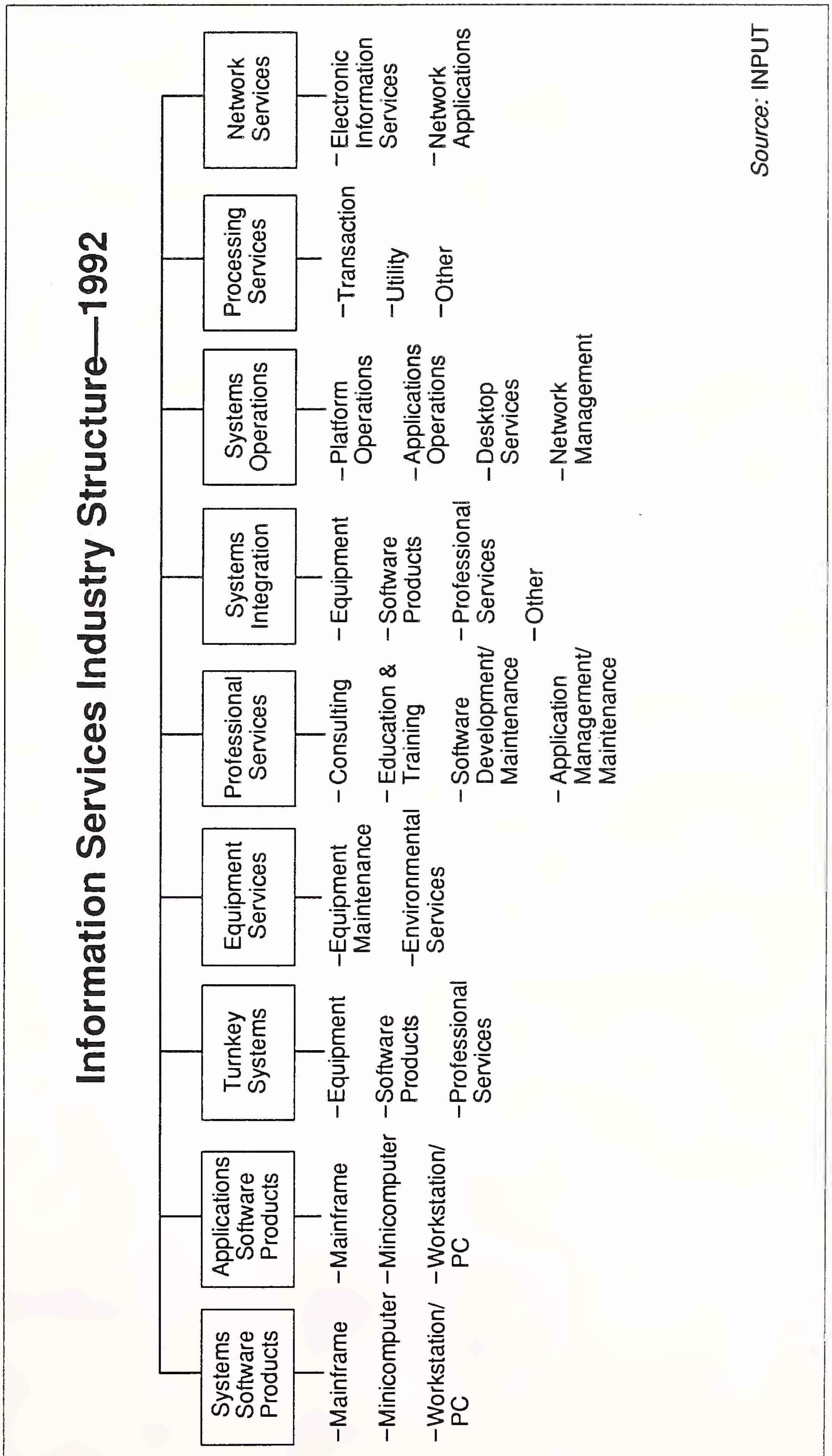
Exhibit I-1 details the structure of the information services industry as defined by INPUT. It also illustrates the seven delivery modes covered by this study of the banking and finance sector:

- Processing services
- Network services
- Applications software products
- Professional services
- Turnkey systems
- Systems integration
- Systems operations

Geographically, the study divides Western Europe into the following main countries and regions:

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

EXHIBIT I-1


Information Services Industry Structure—1992
Systems Software Products
–Mainframe
–Minicomputer
–Workstation/PC
Applications Software Products
–Mainframe
–Minicomputer
–Workstation/PC
Turnkey Systems
–Equipment
–Software Products
–Professional Services
Equipment Services
–Equipment Maintenance
–Environmental Services
Professional Services
–Consulting
–Education & Training
–Software Development/Maintenance
–Application Management/Maintenance
Systems Integration
–Equipment
–Software Products
–Professional Services
–Other
Systems Operations
–Platform Operations
–Applications Operations
–Desktop Services
–Network Management
Processing Services
–Transaction
–Utility
–Other
Network Services
–Electronic Information Services
–Network Applications
Source: INPUT

D
Methodology

The European banking and finance market is large and complex. Many vendors have specialised in specific niche areas and country markets.

To obtain an in-depth appreciation of the structure, issues and opportunities, INPUT carried out the following research programme during 1991 and 1992:

- Twenty in-depth interviews with key vendors
- Additional informal vendor interviews that concentrated on specific niche products, services and issues.

This tiered approach with vendors has allowed INPUT to interview an acceptable cross-section of vendors offering a wide range of products and services for the sector and vendors specialising in specific market niches.

Exhibit I-2 shows the country breakdown of these vendor interviews.

EXHIBIT I-2

Analysis of Vendor Research

Country of Area	Number of Interviews
France	8
Germany	3
Italy	8
Spain	7
U.K.	10
Other countries	5
Total	41

As stated in the previous section, market forecasts are based on non-captive end-user expenditures. These are defined by INPUT as expenditures made externally by any organisation with a third-party vendor, rather than made within the organisation itself.

Inflation effects are included in historical and future growth rates of market size estimates. Estimates of inflation rates are given in Appendix B.

E
Report Contents

The report is organised into five chapters and two appendixes as follows:

- Chapter II is an Executive Overview of the complete report. It is designed for the individual who wants to quickly identify the salient points of the report without reading it in its entirety.

- Chapter III reviews the dynamics of the banking and finance end-user market, and forecasts the overall Western European software and services market for the whole sector and the banking and securities subsectors, giving the breakdown of delivery mode for the period 1992 to 1997.

- Chapter IV forecasts the size of the Western European banking and finance software and services sector for the period 1992 to 1997 and analyses the sector by major geographic region.

- Chapter V includes six vendor profiles chosen to illustrate different vendor strategies, with particular reference to the application software product delivery mode.

- Appendix A gives the forecast database of market sizes in local currencies and shows the consolidated changes from the previous forecasts.

- Appendix B gives exchange rates and inflation assumptions used to calculate forecasts.

II

Executive Overview

The banking and finance sector continues to present a challenge to software and services vendors. Both the pace of change and the competition is intensifying. It is no longer sufficient to offer a broad range of high-quality technical staff who can write software to customer order. The rich variety of software products coming to market is moving the demand for services towards outsourcing, systems integration and business implementation skills.

A
Banking Crisis Intensifies Pace of Change

The current worldwide crisis in the banking sector has also been experienced in Europe. As profits come under increasing competitive pressure and financial exposure remains high, the finance sector is responding with various new strategies:

- Diversification into other business areas. Most notably major banks are adopting a broader portfolio of products and services, increasing market share in insurance, securities and property services. This is placing new demands for integration on supporting IT networks.

- Cost containment. This has resulted in ever-decreasing manning levels, property sales and the re-assessment of what value for money is being achieved, through IT, for example:

    - Internal IT departments are being divested into profit centres or independent companies (history continues to repeat itself).

    - Body-shopping declines as budgets are cut, especially in France, where software and services vendors relied on significant demand for contract staff.

- More standard application systems are sought as users look for better value for money from software and fast implementation. They seek products that can be custom configured or integrated rather than in-house or externally custom-developed applications.

Mergers and consolidation continue, especially where rationalisation of costs can improve overall productivity and market penetration. In some cases this will lead to radically new, lower cost IT strategies. Italy and Spain especially are expected to probably halve their number of banks over the next five years as they strive to update their business practices and streamline their organisations for the single European market, anticipated in 1993.

B

Software and Service Market Growth

Software and service market growth in banking and finance slowed once again in 1991, to around 10%—some 3% less than forecast in INPUT's previous report. As a result, vendors to the finance sector are finding themselves in a crisis very similar to that of their clients. The nature of their business is changing as clients demand more standard and more "instant" solutions.

The overall forecast for the sector is illustrated in Exhibit II-1, showing anticipated average annual growth of 14% over the next five years. This assumes that 1991's growth of 10% was unusually low; this was due not only to the effects of recession generally but also to a significant hesitation in IT spending as users took stock of their IT investments. Banking and finance is still seen as one of the most thriving sectors for software and services.

The faster growing delivery modes within the banking and finance sector are:

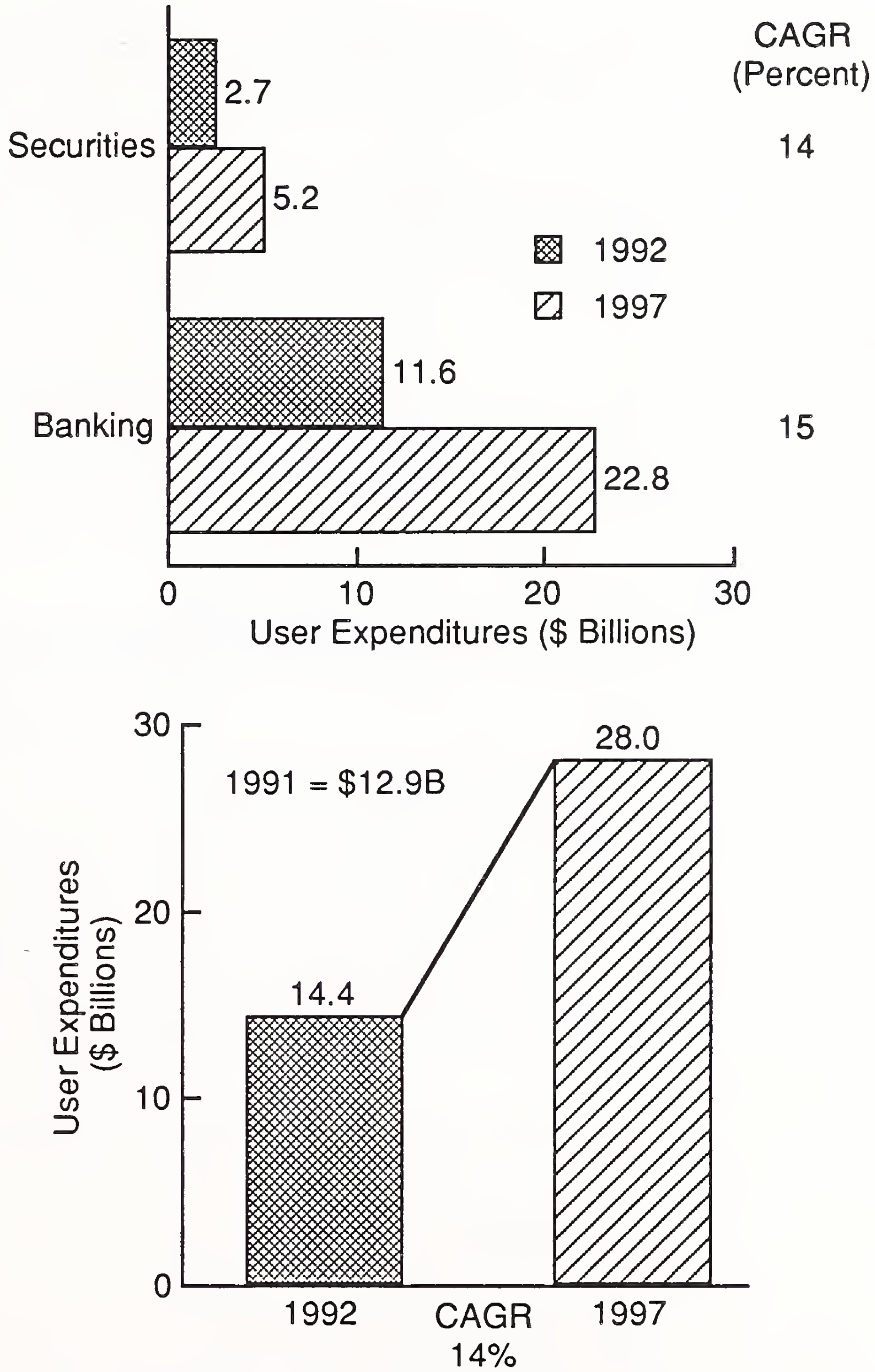
- Application software products, where revenues for packages designed for this sector are expected to grow at 22% per year on average.

- Outsourcing of systems operations or facilities management, particularly for vital corporate networks, is expected to grow at a rapid 20% per year.

- Systems integration services, albeit for smaller projects than in the past, is also expected to achieve 20% growth per annum.

EXHIBIT II-1

Banking and Finance—Western European Software and Services Market by Subsector, 1992-1997



Business opportunities vary a lot between the major countries in Europe, with the markets in France, the U.K. and Sweden worst hit by uncertainty last year. Spain is still expected to exhibit the most growth over the next five years (22% per year), followed by Germany (18%) and Italy (17%).

Eastern Europe is seeing a great deal of activity though generating relatively small rewards as yet. A number of pioneering contracts have been awarded by banks, but there is little in the way of communications or financial trading legal infrastructure yet in place, so uncertainty prevails.

Increasing demand for standard solutions is forcing many vendors to change the profile of their business. Exhibit II-2 lists the major factors needed for success in this changing market.

EXHIBIT II-2

Vendor Success Factors

- Application knowledge and access to packages
- Business implementation skills
- Network management

The term "standards" used to apply to hardware or programming languages. Now it applies to software platforms such as operating systems, application development environments, databases and even application products. The professional services required to deliver solutions based on these new standards are very different from those traditionally available from major vendors, or from in-house IT departments. Many of the requirements for professional services have moved beyond custom software development and have become polarised between business or application skills and technical integration or operational skills:

- Consultancy help with business process and application implementation

- Support for networked integration and systems operations through outsourcing

Software platforms and software engineering environments are being adopted as part of future IS architectures, all aimed at reducing costs and improving the speed with which IS can respond to the needs of the business. Applications packages/kernels are more acceptable as users begin to appreciate that competitive edge comes more from the skills of management and staff than from the leading-edge nature of information systems.

The vital relationship between business and IS strategies is more widely recognised, but few vendors are positioned to offer more than the IS elements. User organisation, implementation and training issues can be identified as key areas in successful projects.

The adoption of new software standards leads to new integration and operation problems. New skills are sought for networking infrastructures and for merging applications from different sources.

In a conservative sector such as banking, adoption of outsourcing arrangements for the management of core IT systems has been slow. However, there are a number of examples of decisions to outsource network operations and management. This is expected to be the main outsourcing opportunity over the next few years.

The trend of downsizing to lower cost hardware platforms follows investment in new applications such as marketing databases. There is little sign that core business applications are being downsized any more than in the past. Growth in non-mainframe multi-processor transaction processing systems has slowed significantly.

Overall there still seems to be a wide gulf in understanding between most IS software and service vendors and their banking industry clients. The challenge is for vendors to be recognised as capable of contributing to the success of their clients' business, rather than just being a pool of high-tech resources.

III

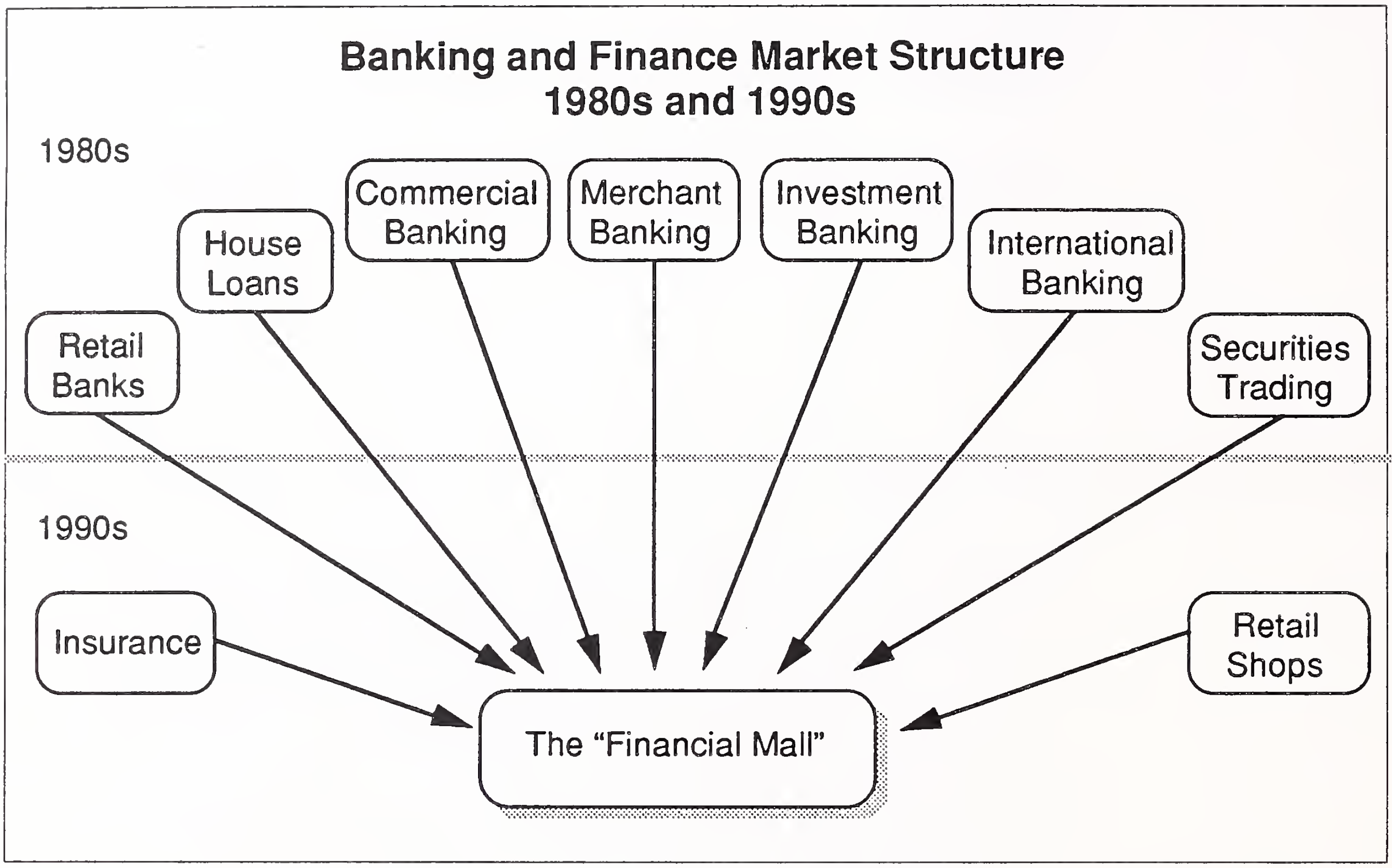
Market Analysis and Major Issues

A
Overview of the Issues and Trends

The market in the banking and finance sector has changed considerably since the production of INPUT's first report in mid-1990 based on research undertaken in the first half of that year. The change has not affected the requirements of banks for new systems to support their operations. Rather, it has brought about a profound change in their confidence in the strategic directions that they should be pursuing. In 1992, banks are asking themselves what areas they want to be in and tending to pause to consider the need to fall back on the core businesses they know well. Meanwhile, securities houses have also met with the need to make long-term strategic decisions and have tended to opt for profit-taking on the systems platforms they have already developed (until things become clearer longer term) rather than invest for the 'exciting future'. Most securities houses have their main front-office hardware systems installed and are now looking to improve the performance of these key systems before proceeding to further investment.

Despite current difficulties caused by the twin effects of recession and retrenchment, INPUT confirms its view of the strategic change in the global market for financial services which is illustrated in Exhibit III-1. Traditional boundaries between the different types of banking and trading continue to become more blurred. At the same time, the boundaries between insurance and banking are being confused by banks becoming insurance intermediaries, and by joint venturing across national boundaries between insurance companies wishing to become more pan-European in scope and local banks wishing to become capable of providing a greater range of services to their existing customers. Investment management becomes the common activity between these two areas—insurance and banking and finance.

EXHIBIT III-1



1. Banking Market Consolidation

The number of institutions offering traditional banking and financial services continues to shrink, as large banks merge so as to compete with their peers, and as smaller regional branch chains—often operating as subsidiaries acquired at some time in the past but still trading under an historical or previous name—are sold off to rivals or to new entrants in a local market. As a relatively undeveloped market in banking services, Spain afforded examples of both these types of activity in 1991:

- Banco Central and Banco Hispano Americano have announced their intention to merge, making them the fourth largest in Europe in terms of assets (see Exhibit III-2).

- Banco Santander has sold two of its subsidiary chains to Crédit Lyonnais.

EXHIBIT III-2

Top European Banks by Assets 1991

Bank	Country
National Westminster Bank	U.K
Barclays Bank	U.K.
Lloyds Bank	U.K.
Banco Central Hispano Americano	Spain
Banco Bilbao Vizcaya	Spain
Midland Bank	U.K.
Crédit Agricole	France
Banque Nationale de Paris	France
Crédit Lyonnais	France
Deutsche Bank	West Germany

Banks have set up joint cross-border ventures to allow them entry to other national markets without the expense of setting up branch networks. Banco Santander has set up such an alliance with the Royal Bank of Scotland, and jointly they plan to implement an on-line inter-bank network system, called IBOS, to allow customers of either bank to transfer funds from any branch in either bank to any branch in the other bank.

2. Securities Markets

The securities market during 1991 has lived up to its reputation for excitement. Two major trends affected it:

- The London market has started to climb out of the trough into which it had fallen in the late 1980s, with steady growth in its indices registered throughout most of the year. In this is has exhibited the propensity of stock markets to anticipate the end of a recessionary period by a number of months, typically nine or more

- Other European stock markets have not shown such bullish symptoms, illustrating the lesser severity of the recession in other countries and the suspicions that the major continental European countries may not yet have bottomed out of their current recessionary cycles.

The divergence of interests between London's ISE (International Stock Exchange) and the other major stock exchanges in Western Europe has contributed to the shelving of the EUROQUOTE (at one time called PIPE) project, for which GEIS had been the favoured supplier. This project—to build a VSAT (very small aperture terminal) network to connect a number of European stock exchanges so that they might be able to act as one European exchange—has run aground for a number of reasons.

- Further work needs to be done to harmonise the systems and procedures in use across the different exchanges,
- A business case for implementing the project via VSAT technology needed to be made. Other solutions based on earlier ground-based technologies would appear to be more cost-effective,
- The City of London and the large German banks are not prepared at this juncture to fund the investment.

Projects to further automate systems in the individual major European exchanges have proceeded during the year, but London's Taurus project is still running behind schedule. Andersen Consulting has been appointed to manage these projects and their operation in a controversial outsourcing contract from the London Stock Exchange.

All told, 1991 was the year when all the players in the financial services arena asked themselves where they were going. This pause to take stock has obviously had its impacts on the software and services suppliers serving the marketplace.

Exhibit III-3 summarises the key points unearthed by INPUT's ongoing research.

EXHIBIT III-3

Impact of Recession and Restructuring on the Information Services Industry

- Check to capital spending
- Concentration on core businesses
- Mergers among banks and IS vendors
- Failures among banks and trading companies
- Search for flexible, pre-built solutions
- Repatriation and outsourcing

3. Overall Market Forecast

The banking and finance sector of the industry-specific software and services market in Western Europe has maintained its 20% share of this overall market during 1991 by growing, if anything, a little faster than the market average. This rate of growth has been shown to be continuing and is forecast to result in the sector growing from $14,400 in 1992 to $16,300 by 1993, having grown from a 1991 value of $12,900.

The five-year forecast figures for the banking and finance sector alone are shown in the chart in Exhibit III-4, where both subsectors are seen to be growing at about 15%, ensuring that the sector value will double by 1997. This market forecast incorporates significant reductions in the growth rates given in INPUT's report published in mid-1990. The securities subsector has suffered most from INPUT's downward revision of growth rates.

The market retains its consolidated nature first noted by INPUT in 1990, and illustrated again in Exhibit III-5. This year, however, the market share of the leading vendors is estimated to have fallen as projected growth slowed, and "younger" providers of more cost-effective solutions have grown faster than the sector average speed. In 1991, INPUT measured the top 80 vendors as accounting for 60% of the sector.

Exhibit III-6 tabulates the market shares of the top 10 of these vendors who, together, account for a 37% share of the 1991 market. Vendors are ranked by their 1991 revenues. Where vendors have acquired other vendors sometime during 1991, the rankings have been based wherever possible on the combined revenues in the sector of the newly formed single entity. This applies to all ranking tables shown in this report.

EXHIBIT III-4

Banking and Finance—Western European Software and Services Market by Subsector, 1992-1997

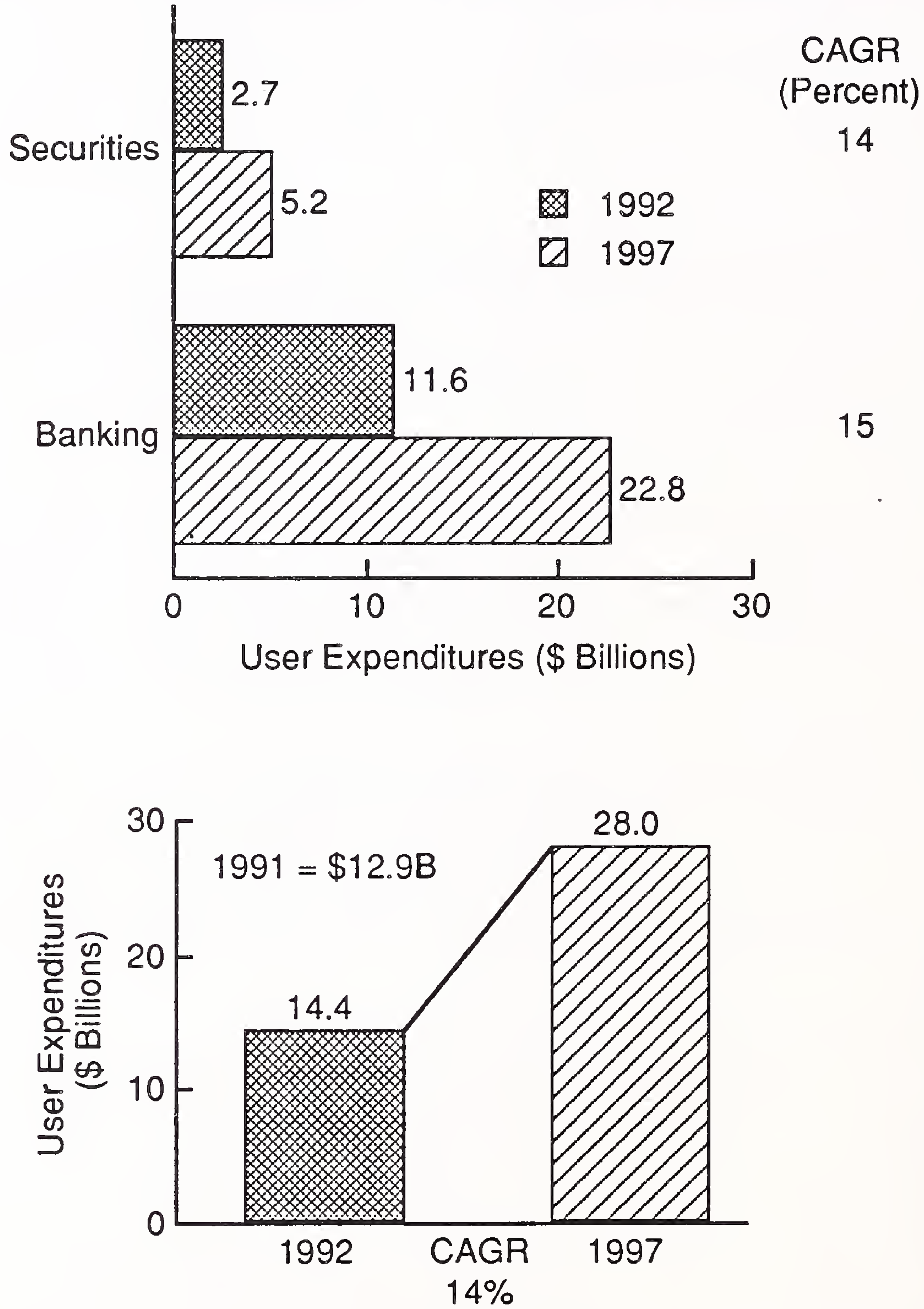


EXHIBIT III-5

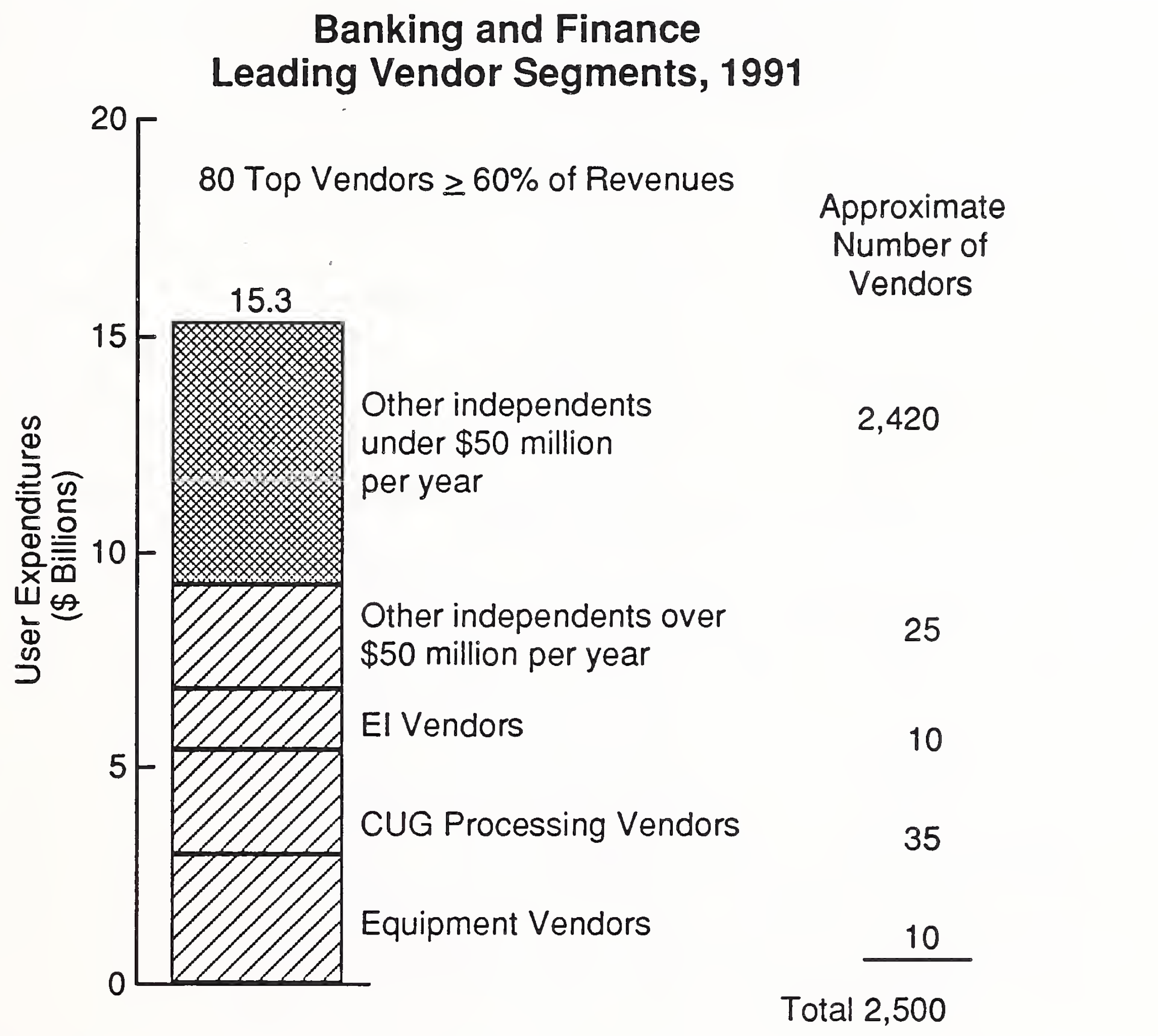


EXHIBIT III-6

Leading Software and Services Vendors Banking and Finance, Europe 1991

Rank	Vendor	Country of Origin	Revenues ($ Billions)	Market Share (Percent)
1	Reuters	U.K.	1,250	9.7
2	IBM	U.S.	1,175	9.1
3	Cap Gemini Sogeti	France	475	3.7
4	Digital	U.S.	365	2.8
5	Siemens Nixdorf	Germany	310	2.4
6	Andersen Consulting	U.S.	295	2.3
7	Unisys	U.S.	270	2.1
8=	Bull	France	225	1.8
8	Sligos	France	225	1.8
10	Finsiel	Italy	195	1.5
	Total Listed		4,785	37.2
	Total Market		12,850	100.0

B
Delivery Mode Analysis

Exhibit III-7 tabulates the sector market by delivery mode, showing the change in the market over the previous two years as well as the full five-year forecast to 1997. Average growth is forecast to pick up from the recent low of 12% between 1991 and 1992, but the range of growth rates between different delivery modes is considerable and will be explained below for each mode. Please note that systems operations has been split away from processing services and, to a limited extent, from professional services, the two areas in which INPUT was measuring it for earlier reports on this sector.

EXHIBIT III-7

Banking and Finance Sector by Delivery Mode Western Europe, 1992-1997

Subsector	Market Forecast ($ Millions)			
	1991	1992	1992-1997 CAGR (Percent)	1997
Processing Services	2,890	3,120	6	4,200
Network Services	1,760	2,020	17	4,450
Application Software	1,170	1,370	22	3,700
Professional Services	5,000	5,540	14	10,900
Systems Integration	565	665	20	1,650
Systems Operations	100	120	20	305
Turnkey Systems	1,420	1,560	12	2,700
Total (Rounded)	12,900	14,400	14	28,000

1. Processing Services

Processing services growth fell between 1991 and 1992 to some 7% due to recessionary pressures, causing lost business and budget cut-backs.

Over the next five years the growth will again decline, to a figure below 5% per annum at the end of the period, but boosted to an average value of 6% by:

- The short-term fillip to this delivery mode due to growth of systems integration projects causing demand for transition contracts until new systems have been brought in.

- The increasing awareness of the closed user group processing centres of the opportunities available in the open market.

Exhibit III-8 illustrates the growth forecast for the two subsectors: the open (growing at 8% per annum) and the semi-closed (growing at 5%).

EXHIBIT III-8

Processing Services by Subsector, 1992-1997

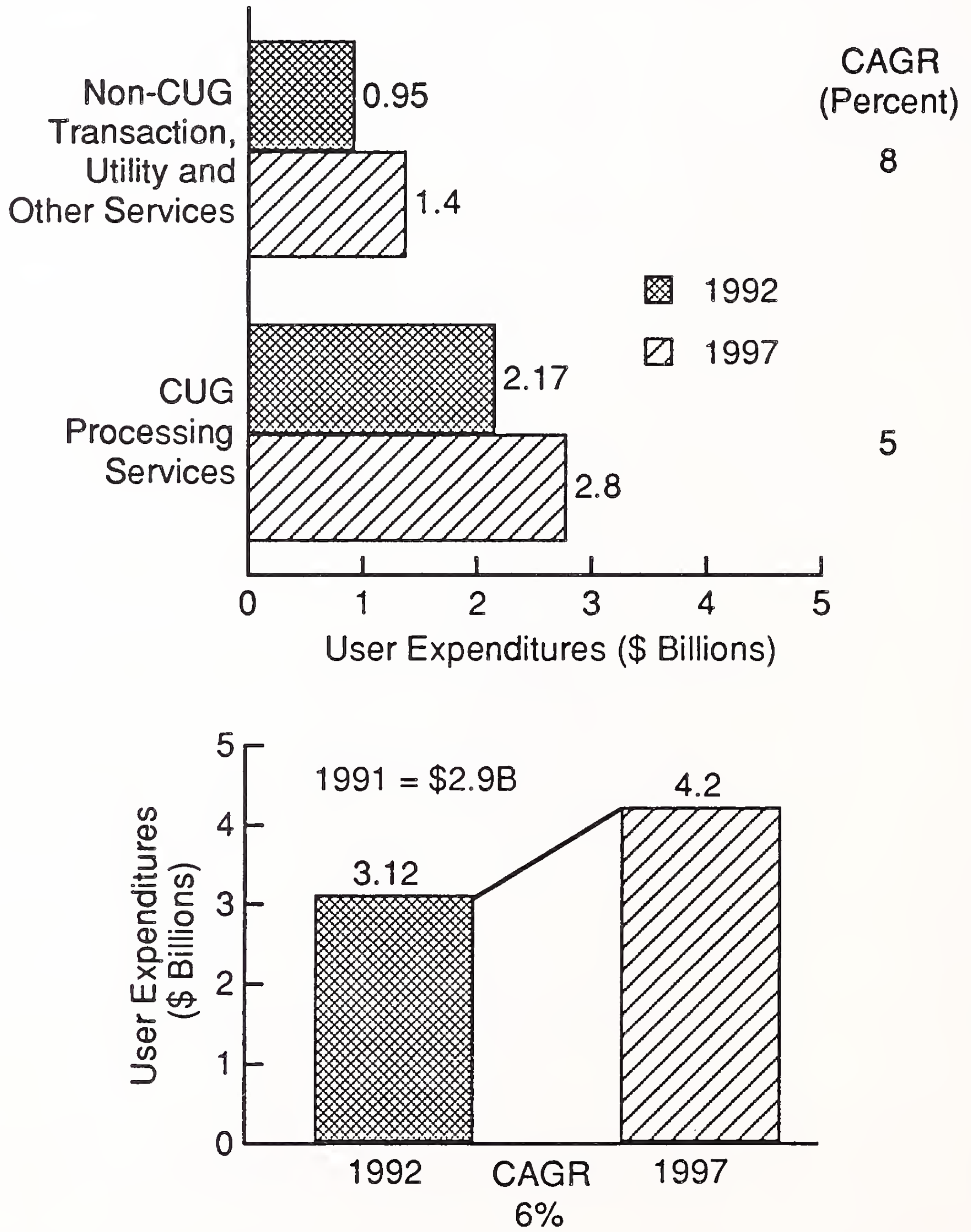


Exhibit III-9 lists the top 10 vendors in the processing services segment, with their market shares.

EXHIBIT III-9

Top Vendor Rankings and Market Shares, 1991
Processing Services

Rank	Company	Market Share (Percent)	Estimated Revenues ($ Millions)
1=	Sligos	3.8	110
1	Finsiel	3.8	110
3	GEIS	3.6	105
4=	IBM	3.5	100
4=	Telekurs	3.5	100
4	Fiducia	3.5	100
7=	Fellesdata	3.1	90
7	PBS	3.1	90
9	Bankens Betalingssentral	2.9	85
10	EDS	2.4	70
	Others	66.8	1,930
	Total	100.0	2,890

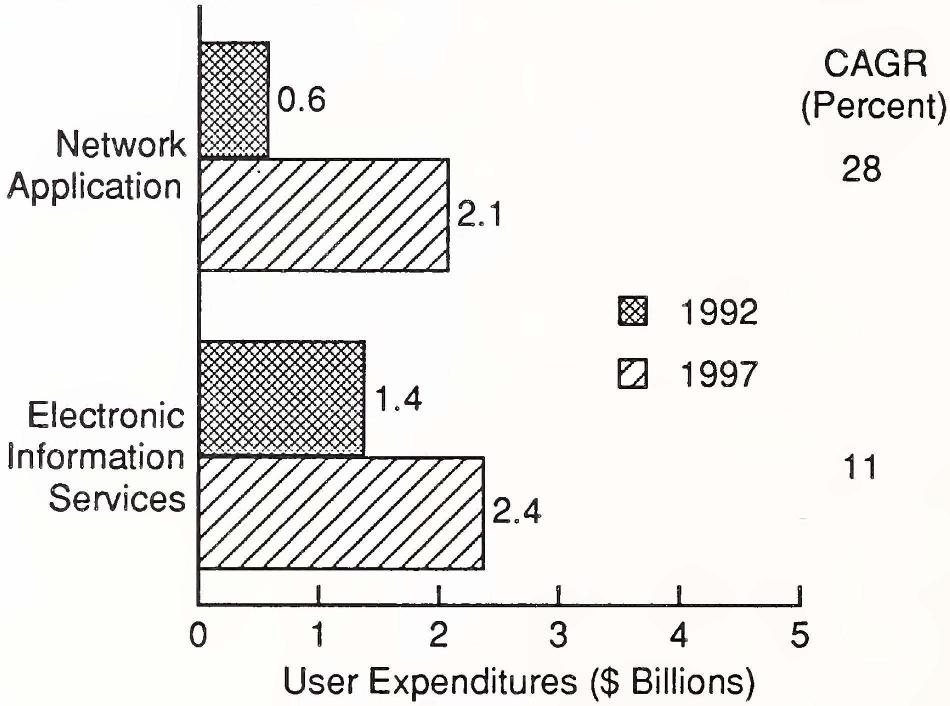
2. Network Services

This segment is dealt with in more detail in INPUT's Network Services Programme for Europe, where a whole study is devoted to its research and analysis. It comprises the smaller network applications sector and the larger, heavily-concentrated electronic information services (EIS) sector. Overall, it has had a very moderate growth rate over the previous 12 months due to the virtual stagnation of the EI sector, in which Reuters and Dow Jones' Telerate subsidiary are the dominant players.

INPUT forecasts reasonable growth in the period to 1997 as trading markets pick up from their low points of the late 1980s. This growth—17% overall—is fostered largely by the fast growing network applications sector in which electronic mail and other forms of messaging, EDI driven by the new electronic payments requirements being implemented by banks in various countries, and network management services all act as driving forces. The principal driving force in the EI sector involves the new distribution methods represented by storage and publishing of information on CD ROM and other forms of optical media. Exhibit III-10 gives the delivery mode forecast by submode, while Exhibit III-11 ranks the top 10 suppliers by their attributable 1991 revenues. Reuters' revenues have been re-stated throughout this report and should not be compared to those in previous reports.

EXHIBIT III-10

Network Services by Subsector, 1992-1997



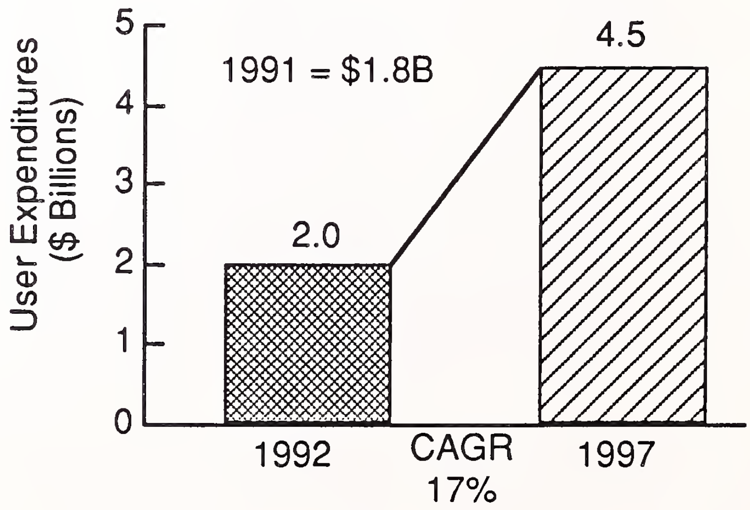


EXHIBIT III-11

Top Vendor Rankings and Market Shares, 1991
Network Services

Rank	Company	Market Share (Percent)	Estimated Revenues ($ Millions)
1	Reuters	53.4	940
2	Dow Jones/ Telerate	7.7	135
3	SWIFT	6.0	105
4	Telekurs	5.4	95
5	France Telecom	3.4	60
6	GEIS	2.5	45
7	Citicorp/Quotron	2.3	40
8	GSI	2.0	35
9	Dun & Bradstreet	1.7	30
10	Sligos	1.4	25
	Others	14.2	250
	Total	100.0	1,760

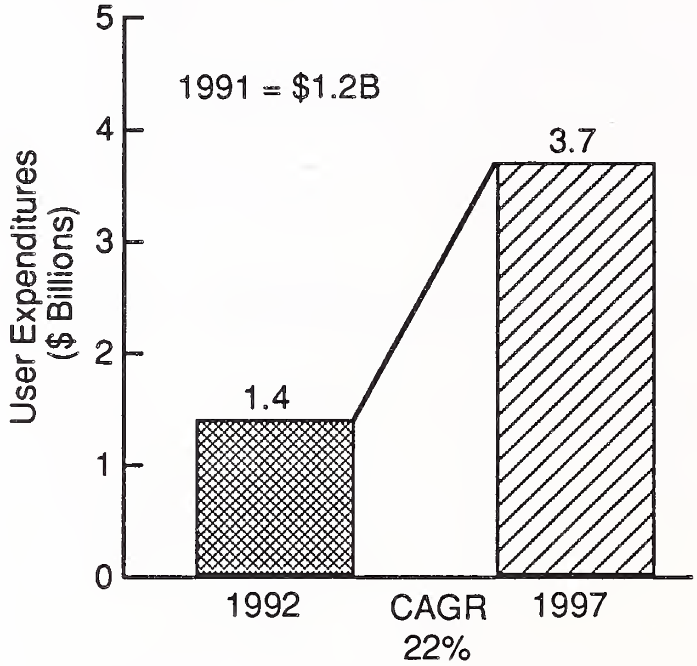
3. Software Products

Exhibit III-12 contains the forecast for the applications software products market in the banking and finance sector. Systems software is excluded from this industry sector report as it is classified as a cross-industry delivery mode. Similarly, small elements of applications software, processing services and network services (e.g., payroll applications) are also classified as cross-industry and excluded.

Applications products should be the principal thrust of service suppliers wishing to increase their penetration of, particularly, the banking solutions market. The importance of choice of product and of understanding the different acceptability levels of the product approach in each country is dealt with more fully in Chapter IV. In the short to medium term, application software products marketed under licence but modifiable to customer requirements will be the most favoured approach for the majority of banks. The systems operations delivery mode remains the more favoured mode for the long term.

EXHIBIT III-12

Application Software Products, 1992-1997



Exhibits III-13 shows the vendor rankings for the application software products subsectors.

EXHIBIT III-13

Top Vendor Rankings and Market Shares, 1991 Application Software Products

Rank	Company	Market Share (Percent)	Estimated Revenues ($ Millions)
1	Microsoft	4.7	55
2	BIS	3.4	40
3	SCBF	3.3	39
4	SAP	3.0	35
5	Sema	2.8	33
6	Borland	2.6	30
7	Unisys	2.4	28
8=	SNI	1.9	22
8	ICL	1.9	22
10	CA	1.5	18
	Others	72.5	848
	Total	100.0	1,170

4. Professional Services

Professional services is the largest segment within the banking and finance sector. Although forecast to grow at 14% p.a. over the next five years, it will remain the largest segment in 1997 by a comfortable margin. Market pressures exerted during the 1990-1991 timeframe have been heaviest on this segment, as users have delayed new project starts and have switched their attentions more to the vehicle of a pre-built (package) solution with some degree of customisation. There has also been a significant reduction in the use of contract staff, especially in France.

Exhibit III-14 contains the five-year forecast for this delivery mode, and shows the split between the three submodes:

- Education and training has been hit hardest by recession and is forecast to grow at 10% CAGR.

- Custom software development is the largest subsegment and covers:

- Complete tailored software projects

- Modifications to standard software products

- The use of contract development staff under control of in-house project managers.

The primary pressure in this sector is for service vendors to start adding more value to application products, rather than developing new projects from scratch. This will demand new skills and new business alliances, changing the type of services offered in the past.

- The demand for IS consulting, which became highly price competitive in 1991, is expected to recover to a reasonable growth of 15% in the five-year period.

Exhibit III-15 shows the 1991 top 10 vendor rankings for this delivery mode. As happened with several of the other modes, the leading vendors lost market share during the market slowdown period, as cost-conscious users opted for proposals offered at lower cost rates, usually from the smaller services companies.

EXHIBIT III-14

Professional Services by Subsector, 1992-1997

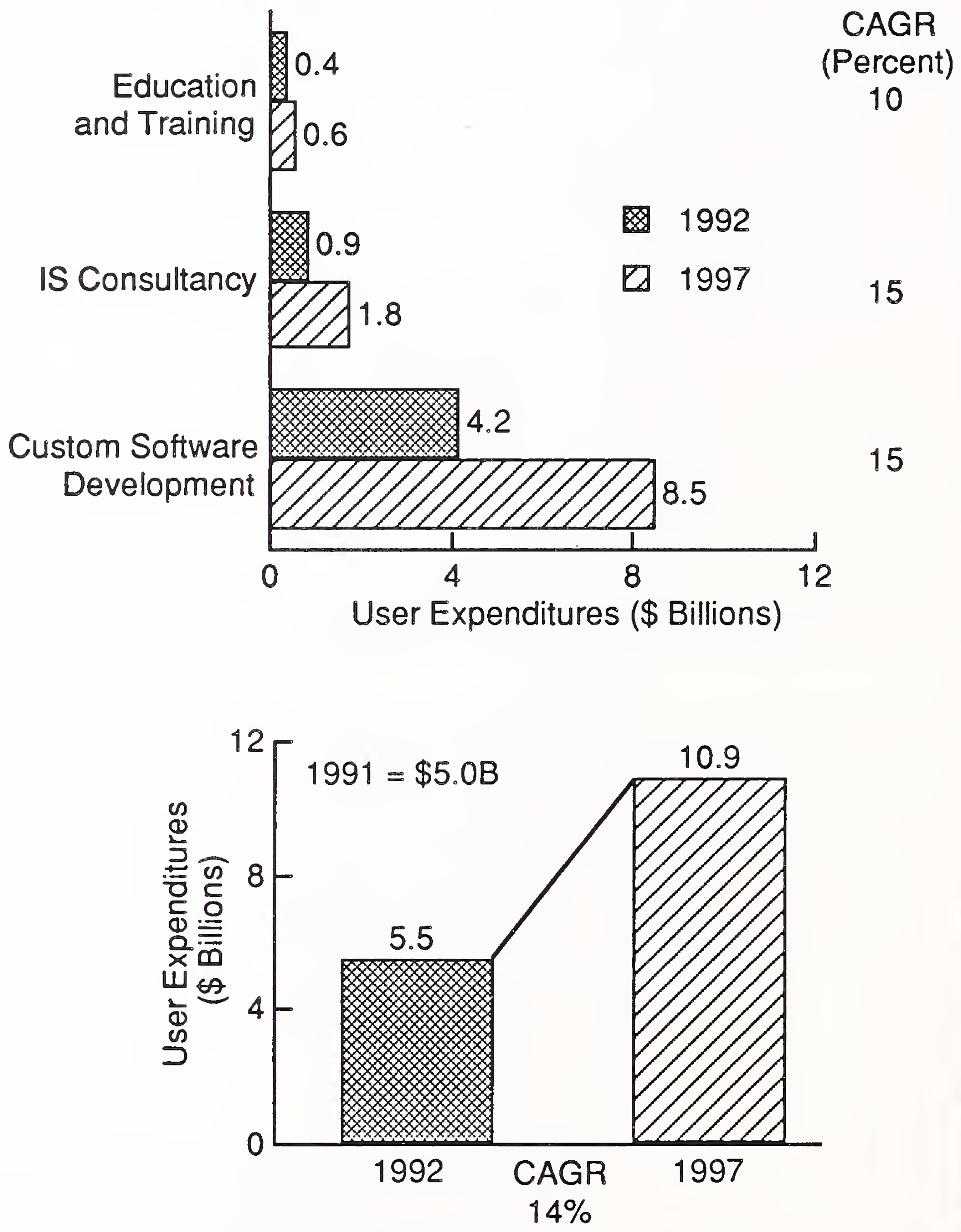


EXHIBIT III-15

Top Vendor Rankings and Market Shares, 1991
Professional Services

Rank	Company	Market Share (Percent)	Estimated Revenues ($ Millions)
1	IBM	4.0	200
2	Cap Gemini Sogeti	3.8	190
3	Sema	2.0	100
4	Andersen	1.8	90
5	Unisys	1.6	80
6	Finsiel	1.5	75
7	Olivetti	1.1	55
8	Volmac	1.0	50
9=	ICL	0.9	45
9	EDS-Scicon	0.9	45
	Others	81.4	4,070
	Total	100.0	5,000

5. Turnkey Systems

This sector is dominated by SNI (Siemens Nixdorf Informationssysteme GmbH) whose activities—principally in the German, French, Swiss and U.K. markets, serving large and smaller banks with branch banking systems—give it almost 40% of the market. Exhibit III-16 forecasts a steady 12% growth over the next five years as the requirement for installation and renewal of branch systems manifests itself over the period to 1997. Demand for turnkey systems is expected to grow much slower than demand for application software products on their own. Price pressures on hardware system vendors are encouraging them in many cases to sell software and services separately from hardware. Exhibit III-17 shows the 1991 vendor rankings and market shares.

EXHIBIT III-16

Turnkey Systems, 1992-1997

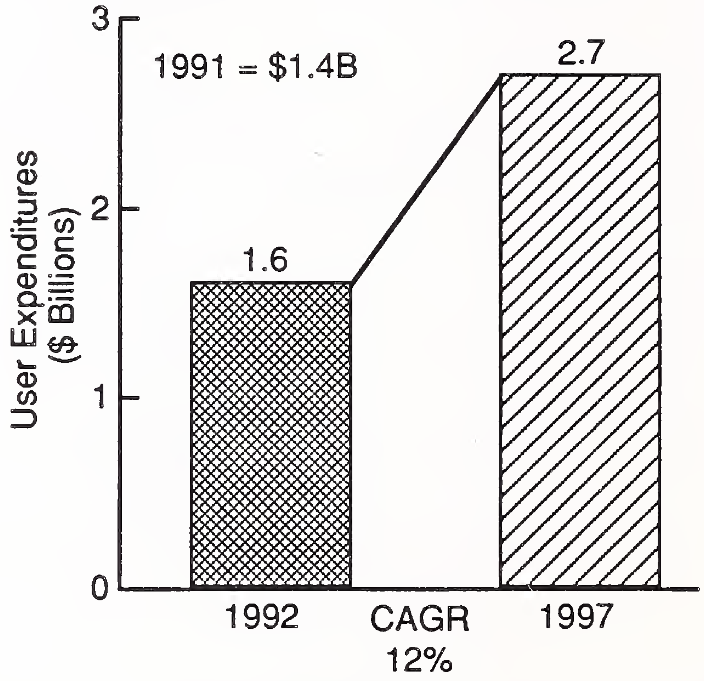


EXHIBIT III-17

Top Vendor Rankings and Market Shares, 1991 Turnkey Systems

Rank	Company	Market Share (Percent)	Estimated Revenues ($ Millions)
1	SNI	26.1	370
2	Digital	6.3	90
3	Sligos	4.6	65
4	Reuters	4.2	60
5	ICL/Nokia Data	3.2	45
6	IBM	1.8	25
7	McDonnell Douglas	1.5	22
8	CGS/Hoskyns	1.4	20
9	Unisys	1.1	15
10	BIS	0.7	10
	Others	49.1	698
	Total	100.0	1,420

6. Systems Integration

Systems integration covers the larger projects in which the external contractor takes major responsibility for implementation. This delivery mode is forecast to grow at a faster rate than the sector average to reach over $1.5 billion by 1997, as illustrated in Exhibit III-18. Contracts will involve both major banking systems and systems for the various national stock exchanges. The pan-European stock exchange network project is currently on indefinite hold.

EXHIBIT III-18

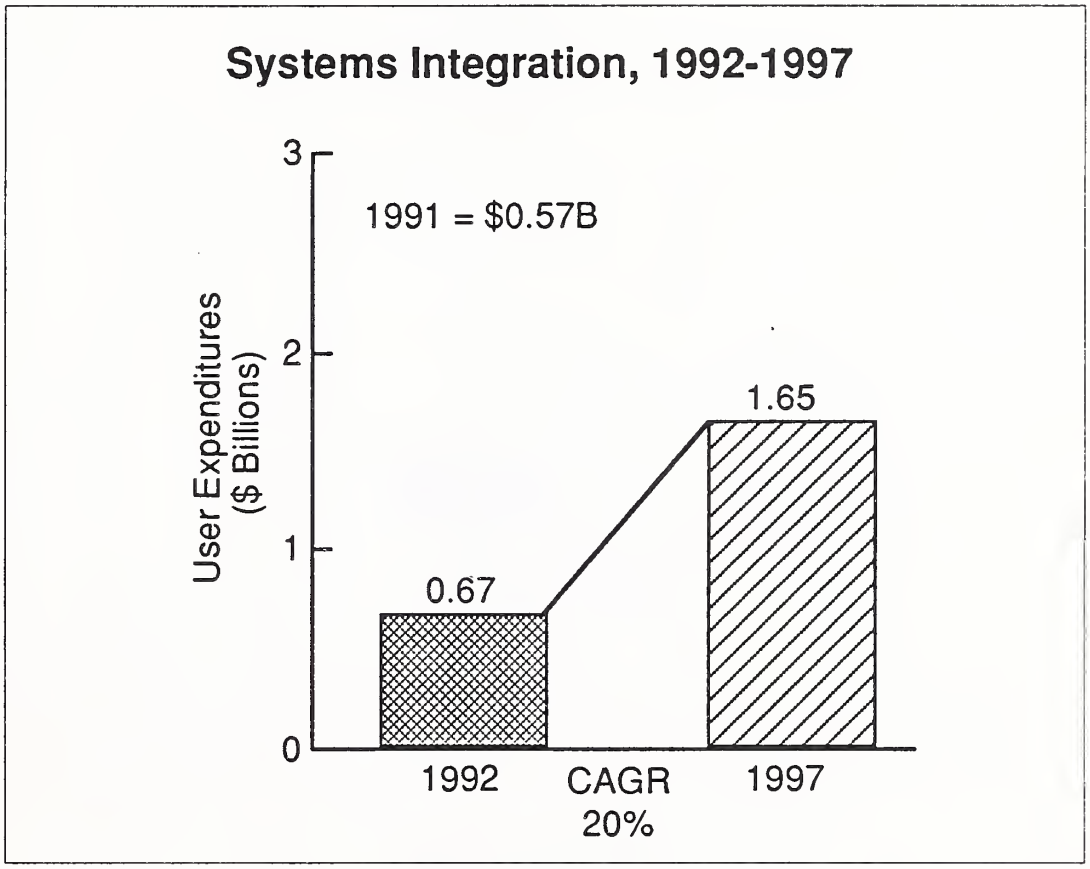


Exhibit III-19 ranks the vendors by 1991 market shares. IBM again tops the list, though Andersen Consulting is now a close second.

EXHIBIT III-19

Top Vendor Rankings and Market Shares, 1991
Systems Integration

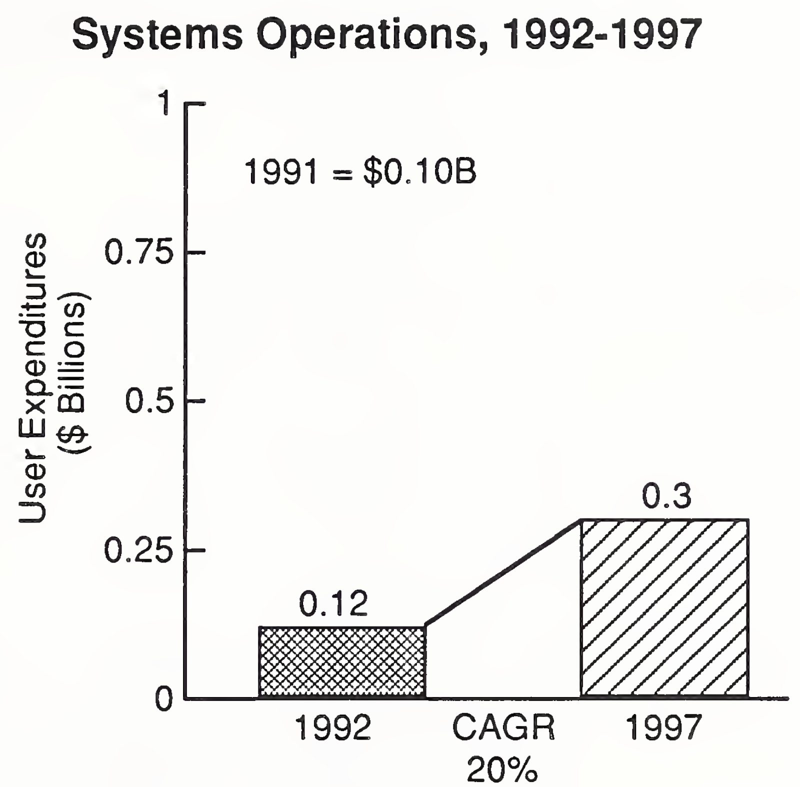
Rank	Company	Market Share (Percent)	Estimated Revenues ($ Millions)
1	IBM	12.4	70
2	Andersen Consulting	11.5	65
3	Cap Gemini Sogeti	5.3	30
4	EDS-Scicon	3.5	20
5	Steria	3.0	17
6=	Logica	2.7	15
6=	Sema	2.7	15
6=	ICL/Nokia Data	2.7	15
6	Digital	2.7	15
10	SNI	2.5	14
	Others	51.0	289
	Total	100.0	565

7. Systems Operations

The banks have been traditionally hostile to outsourcing their information systems and services, principally on the score of loss of confidentiality and security. The current economic climate has caused them to reconsider this fundamental attitude. The increasing importance of networking and the increasing integration of networks into the information systems of banks and securities houses is leading them to consider outsourcing as a means of reducing the technical complexities of their operations as well as reducing costs—their all-important concern at this stage. Network management is the most popular form of outsourcing at this stage.

Exhibit III-20 contains INPUT's forecast for growth in systems operations through to 1997. With a CAGR of 20%, this delivery mode is growing almost as fast as the application software products sector, the other joint leader in this respect.

EXHIBIT III-20



EDS, which in 1991 acquired the SD-Scicon company, is now the market leader in systems operations. Digital, which acquired the Financial Systems division of Data Logic in 1990, is in second place. The complete top 10 rankings for this delivery mode are shown in Exhibit III-21.

EXHIBIT III-21

Top Vendor Rankings and Market Shares, 1991
Systems Operations

Rank	Company	Market Share (Percent)	Estimated Revenues ($ Millions)
1	EDS-Scicon	18.0	18
2	Digital	12.0	12
3	Cap Gemini Sogeti/Hoskyns	10.0	10
4=	Sligos	7.0	7
4	GSI	7.0	7
6	Andersen	6.0	6
7=	Sema	4.0	4
7	Axone	4.0	4
9	Finsiel	3.0	3
10	Concept	2.0	2
	Others	27.0	27
	Total	100.0	100

IV

Country Market Analysis

This chapter summarises the findings of INPUT's research in each of the five major countries visited for face-to-face research as part of its 1991/1992 vendor research programme:

- Germany
- France
- U.K.
- Italy
- Spain.

Each section is on an individual country and detailed findings come under the headings of:

- The status of banking in each country
- The development of information systems and services in banking in each country
- Market forecasts for the period 1992-1997
- Top 10 vendor rankings based on 1991 revenues gained in each country in the banking and finance sector

A
Introduction

The European software and services market in this industry sector is set to grow over the next five years at a healthy 14% compound annual growth rate (CAGR), and this in spite of the current crisis in the banking industry worldwide. With the exception of Spain (among the larger Western European countries) and some of the smaller countries normally forming part of INPUT's Rest of Europe country grouping (more particularly Greece and Portugal), there is not a lot of difference in the growth rates in the individual country markets. These range from a low of 10% for the majority of the Scandinavian countries to 18% for Germany and 16% for Italy, among the major countries. Spain, as we shall see, is the exception, being forecast to grow at 22% per annum over the next five years.

Exhibit IV-1 illustrates the market size and five-year growth of the major country markets, the Benelux and Scandinavian countries (shown as two separate groups) and the Rest of Europe, here including Austria, Switzerland, Greece, Portugal and Ireland. The U.K. remains the single largest market, but is losing market share, especially to Germany but to a lesser extent to Italy, Spain and the Rest of Europe. Germany will have the largest market in Europe by 1997, having overtaken the French and U.K. markets in the previous year. Spain's high growth rate is explained by the need of that country to modernise its industrial and commercial infrastructures. Spaniards see themselves as being in what they call "catch-up mode" in both banking service products and in IT systems and services generally. Much of the investment need to modernise Spain's banking systems has been made available through foreign investors buying into the indigenous banking community and, increasingly, into the software and services industry.

EXHIBIT IV-1

Western European Software and Services Market—Banking and Finance Sector by Country, 1992-1997

Country	Market Forecast ($ Millions)			
	1991	1992	1992-1997 CAGR (Percent)	1997
Germany	2,300	2,700	18	6,150
France	2,900	3,170	13	5,700
U.K.	2,800	3,060	13	5,650
Italy	1,400	1,650	16	3,500
Spain	360	430	22	1,150
Benelux	980	1,070	12	1,850
Scandinavia	1,450	1,560	10	2,500
Rest of Europe	660	725	15	1,450
Total (Rounded)	12,900	14,400	14	28,000

INPUT's definition of the banking and finance sector divides the sector into two parts or subsectors:

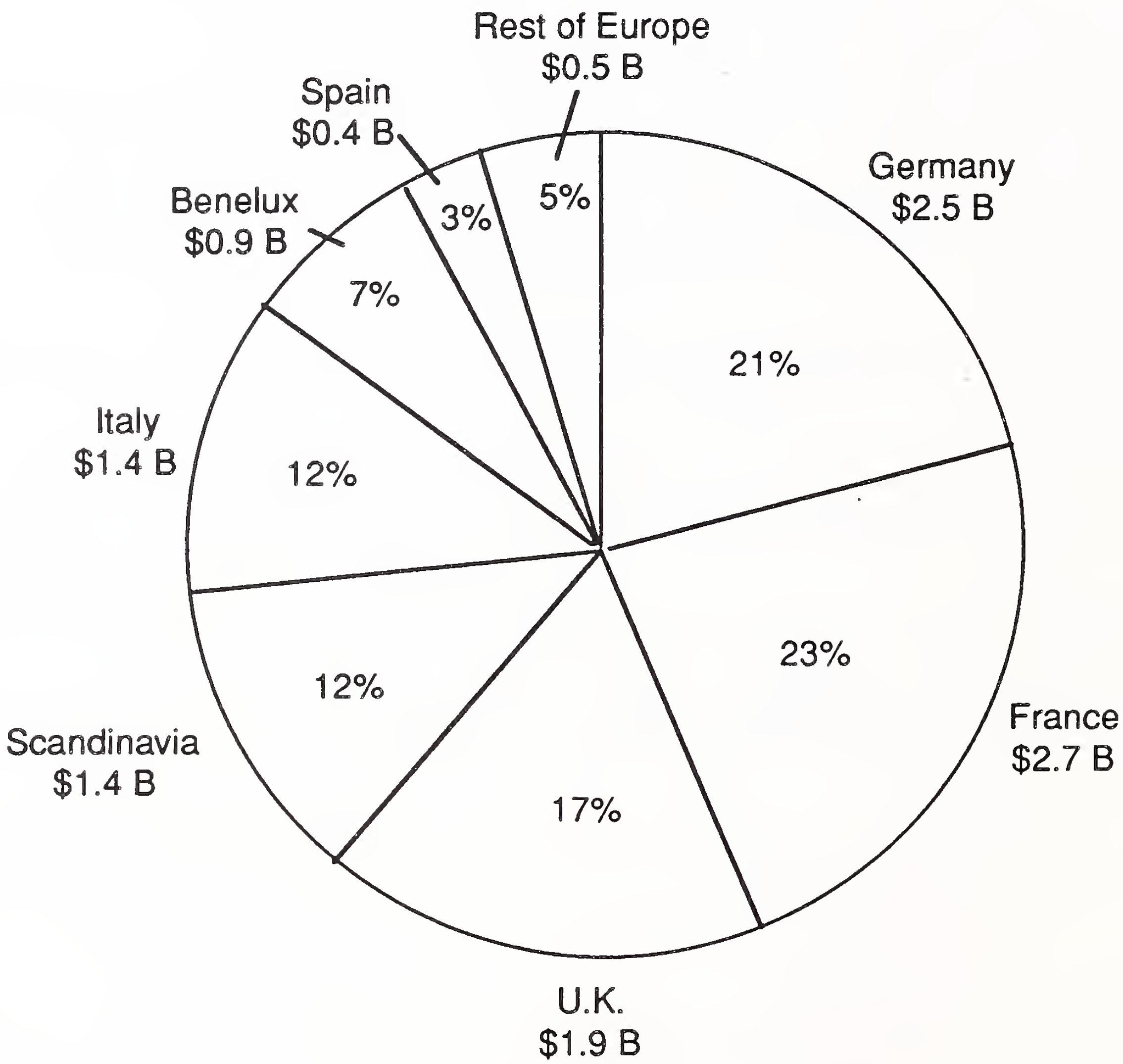
- Banks include commercial publicly owned banks, government-owned banks and private banks. Banks may operate exclusively or simultaneously in a number of business areas:
  - Retail banking, i.e., banking for the public as individual consumers
  - Wholesale banking, which covers commercial loans and deposits, i.e., to businesses and government organisations, as well as more specialised applications supporting international operations, investments and merchant banking
  - Trading financial instruments of all sorts, including equities, bonds, stocks, options, futures, etc.
- Securities companies include stockbrokers, money brokers, stock exchanges and other market making organisations. The securities subsector trades in two areas, which overlap with the banking subsector:
  - Trading in financial instruments is the principal business.
  - Investment management, in which it is competitive with banks and other financial services companies, overlaps with wholesale banking.

INPUT's country market forecasts are provided for both of these subsectors. Exhibits IV-2 and IV-3 show the segmentation of the current (1992) market across the same country groupings as used in Exhibit IV-1, for each of the two subsectors:

- Germany has the largest banking subsector,
- The U.K. has the largest securities subsector.

EXHIBIT IV-2

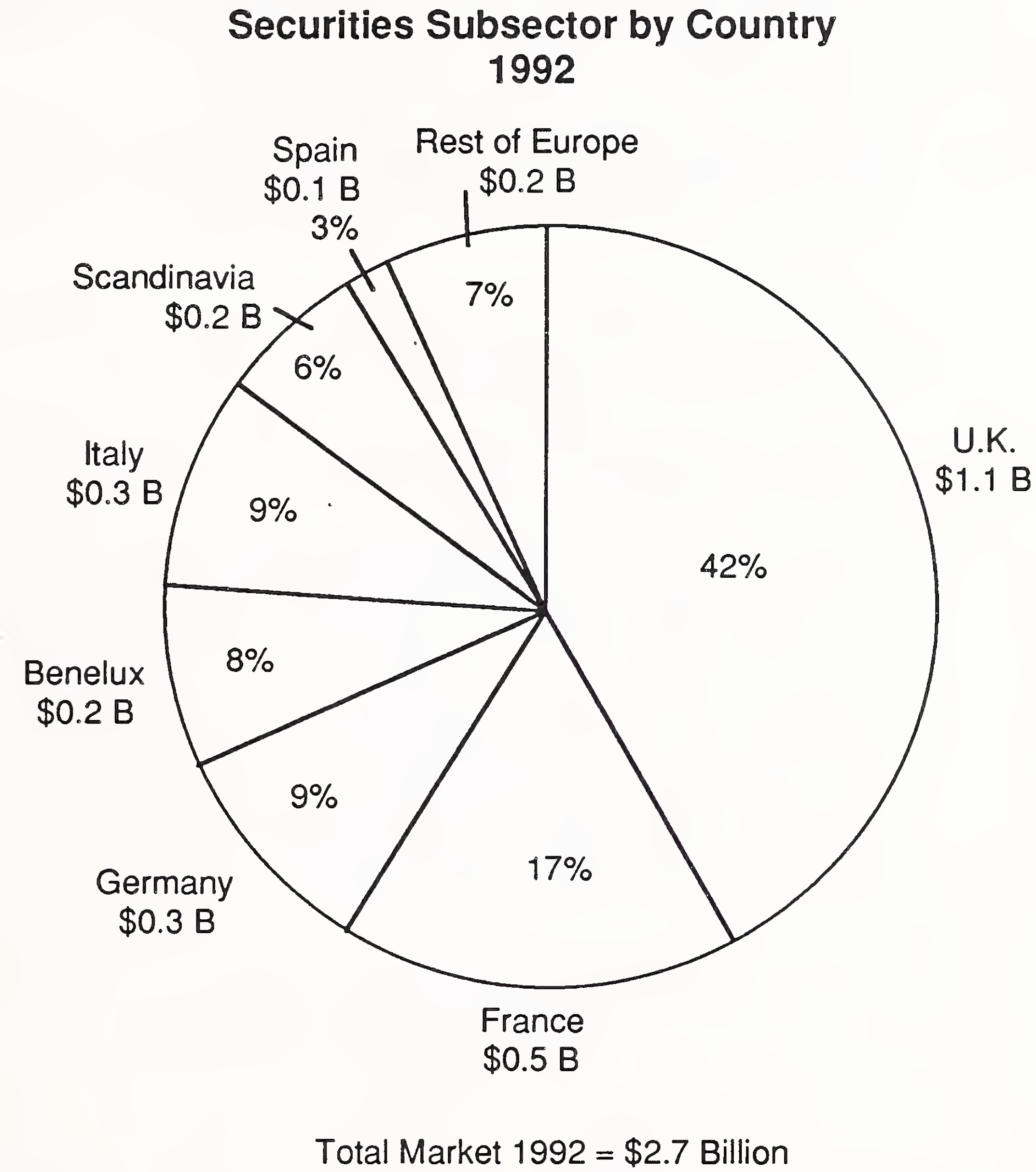
Banking Subsector by Country 1992



Total Market 1992 = $11.7 Billion

Note: Totals may not add due to rounding

EXHIBIT IV-3



Note: Totals may not add due to rounding

B

Leading Western European Country Markets

1. Germany

The German banking market has been impacted during 1991 and 1992 by two major forces.

- Unification has caused the banks in what was West Germany to become embroiled in the indebtedness of what were the state-owned and -run industries of the former East Germany.

- Competition between the big banks has increased as the government implements deregulation prior to the Single European 1993 market, with diversification into the life insurance market playing a leading part in this change.

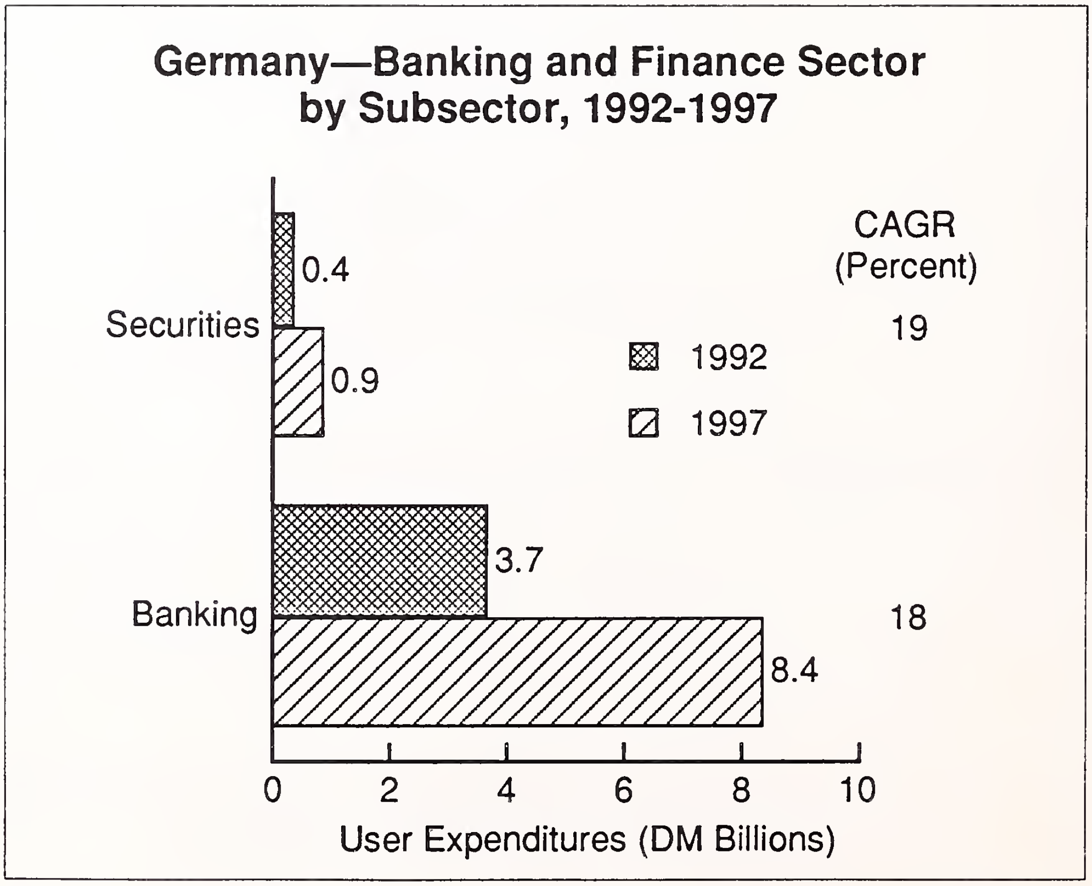
In the provinces that formed East Germany, these two factors come together as the top three banks—Deutsche, Dresdner and Commerzbank—apply themselves to the task of setting up branch networks to serve the commercial and retail banking needs of the old East:

- Deutsche and Dresdner have set up joint ventures with the Kreditbank, formerly part of the state-owned Staatsbank

- Commerzbank, the number three bank, has started to set up a branch network from scratch and currently has over 25 branches.

All this activity is keeping the open market growing at over 14% per annum and this rate is expected to increase to an average of 18% p.a. over the next five years. Exhibit IV-4 illustrates the forecast market growth in terms of the two subsectors. Note that the major split between the closed user group (CUG) processing centres and the fully open market for software and services remains at roughly the same level as noted in INPUT's 1990 report, where it was measured at 52% versus 48% in favour of the CUG segment. However, the open market segment is expected to grow faster at a CAGR of 16% versus a CAGR of nearer 12% for the closed segment, over the forecast period to 1997.

EXHIBIT IV-4



The leading vendors in the German market are listed with their market shares in Exhibit IV-5. SNI (Siemens Nixdorf Informationssysteme GmbH) is the market leader with almost 16% of the market. Most leading vendors lost market share in 1991 as the market turned more seriously to embracing application software products as the most cost-effective delivery mode for the banking solutions of the 1990s. Notable exceptions to this trend were Cap Gemini, which took over the SCS company (SD-Scicon's German subsidiary) and Unisys.

EXHIBIT IV-5

Top Vendor Rankings and Market Shares, 1991
Germany

Rank	Vendor	Country of Origin	Revenues (DM Millions)	Market Share (Percent)
1	Siemens Nixdorf	Germany	550	15.9
2	Reuters	U.K.	380	11.0
3	IBM	U.S.	320	9.3
4	Fiducia	Germany	205	5.9
5	Digital	U.S.	120	3.5
6	Unisys	U.S.	90	2.6
7	RRZ	Germany	80	2.3
8	Cap Gemini Sogeti	France	65	1.9
9	Telekurs	Switzerland	65	1.9
10	Microsoft	U.S.	55	1.6
	Total Listed		1,930	55.9
	Total Market		3,450	100.0

2. France

For several years France's banks were able to compensate for the earlier erosion of their profit margins by increasing business volumes. However, some of France's leading banks reported sharp falls in profits in 1990. Profits were down 53% for Banque Nationale de Paris (BNP), down 25% for Société Générale, and down 26% for Paribas.

The few banks that reported higher profits were able to do so only because of unusual circumstances. Crédit Commercial de France (CCF), for example, reflected the difficult market conditions with an 8% decline in operating profits, but after scrutinising most of its sovereign debt the previous year it was able to slash its country risk provisions, allowing net profits to rise by 15%.

Crédit Lyonnais announced the best figures, with a 19% increase in net profits. It did so only because it absorbed Altus Finance, the former banking arm of the Thomson electronics group, and now the former parent of SCBF in France and CDS/Concept in Italy, both acquired in 1991 by Cogecom, the holding company for France Telecom's non-regulated activities. The parent bank, like its competitors, recorded lower earnings. Group earnings per share declined, too.

The banks have been hit on a number of fronts at once, with profit margins and volumes both suffering at the same time that a sharp deterioration occurred in the quality of credit risks.

In the capital market sector, banks continued to record poor results. Corporate lending showed some recovery in volume, but this was more than offset for most banks by the number of defaults both in France and abroad, where banks like Crédit Agricole, Paribas, Indosuez and Crédit Lyonnais were all caught up in several of the more spectacular U.K. bankruptcies. Crédit Lyonnais nearly doubled overall provisions for specific customer risks, and the Paribas group raised its provisions by 40%.

Some banks, like Banque Française du Commerce Extérieur (BFCE), recorded a modest improvement in lending margins in 1990, and this has improved again in the first months of 1991. Most banks, however—Société Générale, for example—said that any reversal in the downward trend for lending margins had taken place only late in 1990.

Consumer banking also brought its headaches last year. Having for a long time neglected this segment of the market during the period of credit controls, the big French retail banks have undertaken a breakneck expansion of their consumer loan portfolios in recent years. Last year, the rate of increase slowed down, and the problem loans began to surface—as consumer credit specialists such as Compagnie Bancaire and Banque Sofinco had long warned that they would.

Now French banks are having to change fast. They have been parochial and recently started suffering from poor profitability. Their existing systems are largely administrative and not customer-oriented. Competitive, customer-oriented systems are a priority since, for example, some banks are introducing asset and liability management services—but have no systems. Also, from 1st January 1993, the reporting laws for French banks will change, precipitating changes to and possibly replacement of their existing systems.

French banks, therefore, currently need to update their basic systems and introduce new ones. This is a major task, and cost/resource availability is a constraint. The major banks have large competitive software development groups using 4GLs, etc. Products (including kernel software) are seen as a way of cost containment when implementing new applications. Risk and profit management is another strong need.

In the software product development phase, professional services companies need to work with clients to gain applications knowledge and a lead on the real requirements.

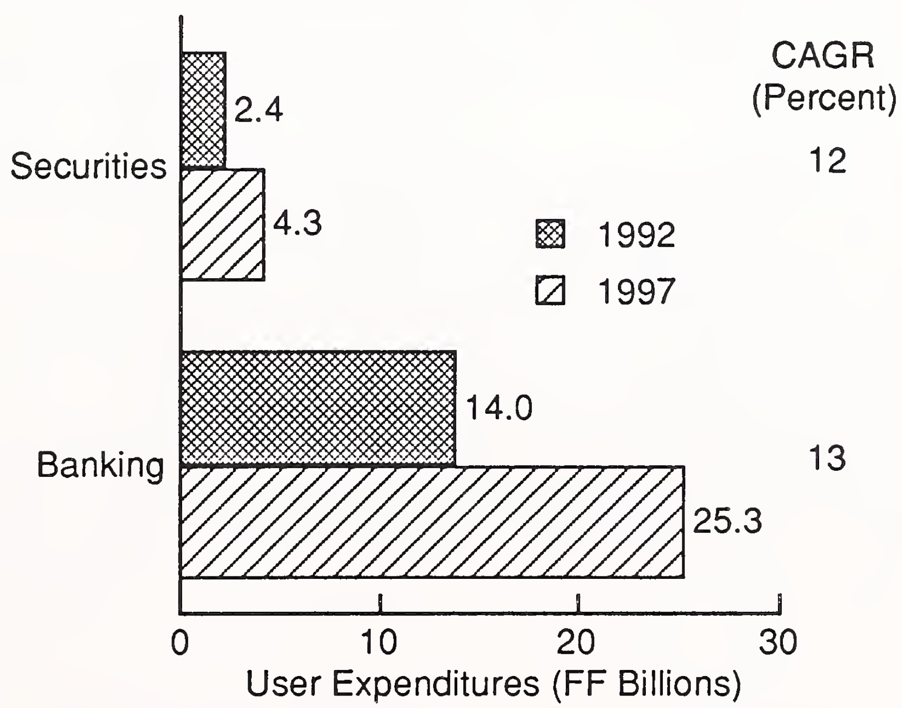
There is intense competition among software vendors. Consequently, even large service companies, such as GFI (acquired by EDS in 1991), are focussing on niches rather than mainstream global banking solutions. New entrants to the market need to demonstrate immediate credibility and offer the potential of lower cost software development for new applications. Products are nearly all kernel software only. There must be plans set in motion to develop complete package products with full support and maintenance.

Systems operations outsourcing as a service is provided to a few banks and insurance companies. The volume of banking sector business opting for this solution type has grown, but vendors do not expect many new clients in the near future.

Exhibit IV-6 illustrates the overall sector growth across the two subsectors being studied.

EXHIBIT IV-6

France—Banking and Finance Sector by Subsector, 1992-1997



Growth in the securities sector is anticipated to be slightly behind that in the banking sector, but has been revised downwards since the publication of INPUT's previous report due to the increasingly competitive nature of that market. The banking subsector will continue to be by far the larger sector.

Exhibit IV-7 gives INPUT's vendor ranking and market shares for the leading 10 vendors. Market conditions have favoured suppliers offering a traditional processing services solution such as Sligos and Axime, which has absorbed three companies that featured in previous rankings (SITB, Sodinforg and Segin). France Telecom appears in the list due to its increasing involvement in network management outsourcing contracts and other network-intensive activities.

EXHIBIT IV-7

Top Vendor Rankings and Market Shares, 1991
France

Rank	Vendor	Country of Origin	Revenues (FF Millions)	Market Share (Percent)
1	Reuters	U.K.	1,230	8.3
2	Sligos	France	1,100	7.4
3	IBM	U.S.	1,090	7.3
4	Cap Gemini Sogeti	France	1,060	7.1
5	Axime	France	975	6.5
6	Bull	France	565	3.8
7	France Telecom	France	435	2.9
8	Sema Group	France	400	2.7
9	EDS	U.S.	310	2.1
10	Unisys	U.S.	290	1.9
	Total Listed		7,455	50.0
	Total Market		14,900	100.0

3. U.K.

Of all the major European economies, the U.K.'s has suffered most from the current recession. This impact has been very hard on the banking sector, as illustrated in a number of statements made when the 1990 results of the major U.K. clearing banks were announced. "Business conditions for banks have probably been the worst in recent history, and they are unlikely to improve in the immediate future." This was the message from the chief executive of the Royal Bank of Scotland, when he reported a 58% fall in interim profits early in 1991.

Although the Big Four clearing banks produced better results in 1990 than in 1989, this was only because the previous year's bottom line was depressed by heavy provisioning against Third World debt. At the operating level, all the big U.K. banks saw sharp declines in 1990. Their bad debt charges totalled a record £3.7 billion ($6.2 billion).

Bad debts have soared, new business has slumped, and with it the industry's earning power. The chairman of Barclays, the largest clearing bank, has gone on record as saying that conditions were the worst he had seen in his 38-year career.

These severe conditions have produced their particular difficulties. One of them was the Midland Bank's proposed merger with the Hong Kong and Shanghai Bank—a proposal that was shelved last year but now is expected to proceed with government approval. Five banks, the largest of them British & Commonwealth Merchant Bank, were also forced into administration—the first bad spate of bank failures in a decade. In 1992, few bankers see an early end to it all. The chairman of NatWest told shareholders not to expect any improvements in the first half of this year. Because the peak in bad debts tends to lag behind the recovery, the latter part of 1991 brought further heavy losses.

The more enduring impact of the recession will be to speed up the shakeout in the banking industry. All the big clearing banks have now embarked on major cost-cutting measures that will involve the loss of more than 30,000 jobs and several hundred branches over the next two or three years. In some cases, as with Lloyds, this also involves a retreat from specific markets overseas, usually those on the periphery of the business.

The merchant banking sector has also been hard hit. Profits have been down at leading names such as Schroders, Kleinworts, Warburg, Barings and Morgan Grenfell, with the causes mainly last year's depressed investment finance and corporate finance markets. An exception was Hambros, whose more focussed approach enabled it to report an 18% increase.

A notable disaster was Guinness Mahon, which lost £35 million on bad debts. This was significant, because the group was acquired only two years ago by the Bank of Yokohama in what was seen as an innovative move by a Japanese bank into U.K. merchant banking—but now one which others will be in no hurry to follow.

Neither has the recession helped the image of the banking industry. Accusations of banks "pulling the plug" on hard-pressed customers abound. Some banks have taken steps to survive in this worsening market. They have re-opened the "intensive care units" with which they nursed corporate casualties through the last recession. In a few isolated cases they have even converted loans into equity, though they stress that this is not a trend they wish to encourage.

The position of the banks has not been helped by the widespread view that banks contributed to the present recession through excessive lending in the 1980s—a charge which they naturally enough deny. Nonetheless, they are trying to complete a new Code of Conduct to head off the threat of tougher legislative controls on their activities.

Not all bankers take the same gloomy view. The Bank of Scotland, long considered one of the best-managed U.K. banks, has announced a £200 million rights issue because it wants to take advantage of what it considers to be excellent prospects in the U.K. The group chief executive points out that the problems besetting many banks are helping to reduce competition and improve the profitability of the banking market. So any bank that can enlarge its market share should be well placed. "Our whole delivery system is geared to winning market share", he says. "In future this business will have much higher margins."

The U.K. banking sector is heavily skewed towards wholesale and international banking due to the presence of the world's largest financial services centre in the City of London. Current estimates give a figure of over 1,000 financial institutions in the city, of which 550 are foreign banks and another 110 are U.K.-owned banks.

This population of enterprises has led to a highly polarised market for systems platforms:

- The few large U.K. banking groups have become heavy users of IBM mainframes. With one or two significant exceptions who opt for Unisys as a supplier, IBM is the main equipment supplier.

- IBM midrange systems dominate the wholesale banking sector, although Digital also has a significant number of sites to its credit in this sector. Smaller hardware vendors may be present in the branches of international banks due to purchasing policies set in their home countries.

The growth of securities and other trading systems markets during the 1980s has been based on real-time dealing room systems and other dedicated sets of equipment that have required and encouraged the supply of modular minicomputer-based applications products. The primary example of this group of products is the MIDAS family of products from the BIS Banking Systems division. Increasingly, this sector is turning to workstation platforms such as those of Sun Microsystems.

There remains in the U.K. financial services sector a significant percentage of modern computer installations that use a mixture of externally hired professional services and in-house-produced tailored software. For even the most commonly used software products there is a customisation factor that often amounts to at least 40% of total implementation cost. It is only at the micro end of the market that the software is usually implemented without modification.

The use of software products is well entrenched in the midrange-based wholesale and international banking sectors. It is less well proven in the mainframe area, but there, therefore, exists an opportunity for software product vendors when systems come up for rewrite and conversion towards having more customer-orientated design.

Exhibit IV-8 gives the subsector breakdown of the banking and finance sector for the U.K. The growth of banking applications is forecast to outstrip the securities sector by some two percentage points, thus increasing its share of the market to 65% by 1997 from its current (1992) 63%. This growth reflects the banks' need to update their major accounting systems so as to become more customer-orientated and less account driven.

EXHIBIT IV-8

U.K.—Banking and Finance Sector by Subsector, 1992-1997

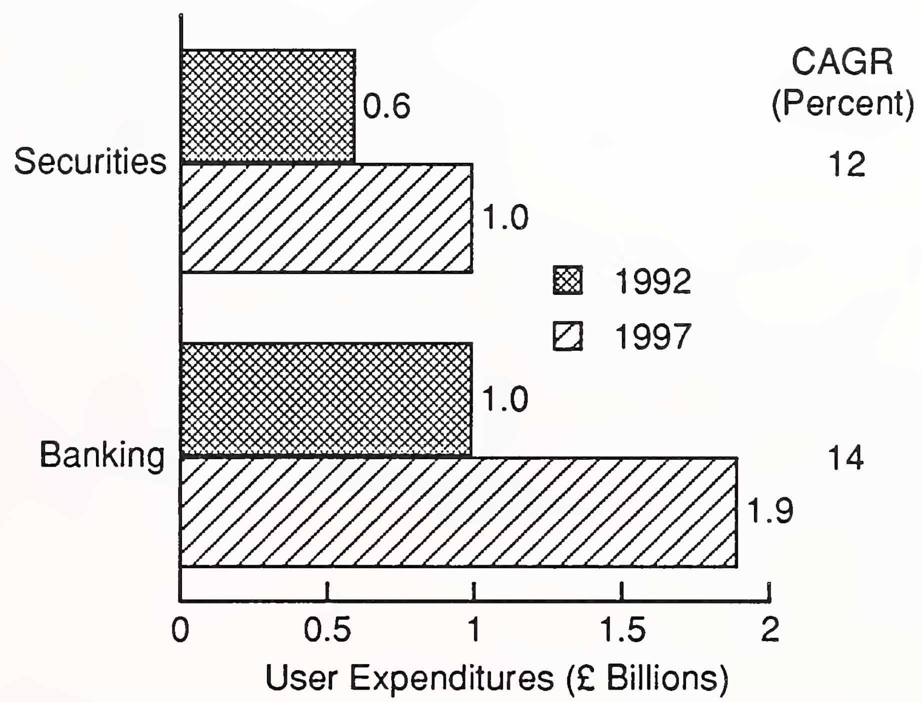


Exhibit IV-9 shows the U.K. vendor rankings and market shares. Reuters was understated in INPUT's 1991 report. Digital's entry into the tables reflects its acquisition of Data Logic's Financial Services division. Andersen Consulting has again won significant business with the Stock Exchange. ACT Group benefits from the acquisition of Quotient.

EXHIBIT IV-9

Top Vendor Rankings and Market Shares, 1991
United Kingdom

Rank	Vendor	Country of Origin	Revenues (PS Millions)	Market Share (Percent)
1	Reuters	U.K.	200	13.8
2	IBM	U.S.	95	6.6
3	Andersen Consulting	U.S.	45	3.1
4	ICL (Fujitsu)	U.K. (Japan)	40	2.8
5	Digital	U.S.	38	2.6
6	ACT Group	U.K.	35	2.4
7	Sema Group	France	33	2.3
8	Telerate	U.S.	33	2.3
9	Unisys	U.S.	32	2.2
10	BIS	U.S.	25	1.7
	Total Listed		575	39.7
	Total Market		1,450	100.0

4. Italy

Banking in Italy is highly fragmented in terms of the number of banks operating and the geographic coverage of each. Altogether, approximately 1,300 banks have been counted, but this number is expected to halve during the course of the current decade. The number includes four types of organisations:

- Publicly owned banks with equity held by government, central or local,
- Private banks, which may also issue shares to the general public,
- Savings banks, which are usually local or at best regional in geographic scope,
- Finance institutions, which specialise in commercial lending, leasing and import/export trade financing.

Many of the smaller banks and local savings banks act as agents for the larger national banks. Therefore, there is a tiered structure in which many of the small banks can be thought of as part of the national distribution chain of the smaller number of major names.

Diversifying away from mainstream banking, many banks act as intermediaries for the national insurance companies, where two of the big names are Assicurazione Generali and Assicurazione Italia.

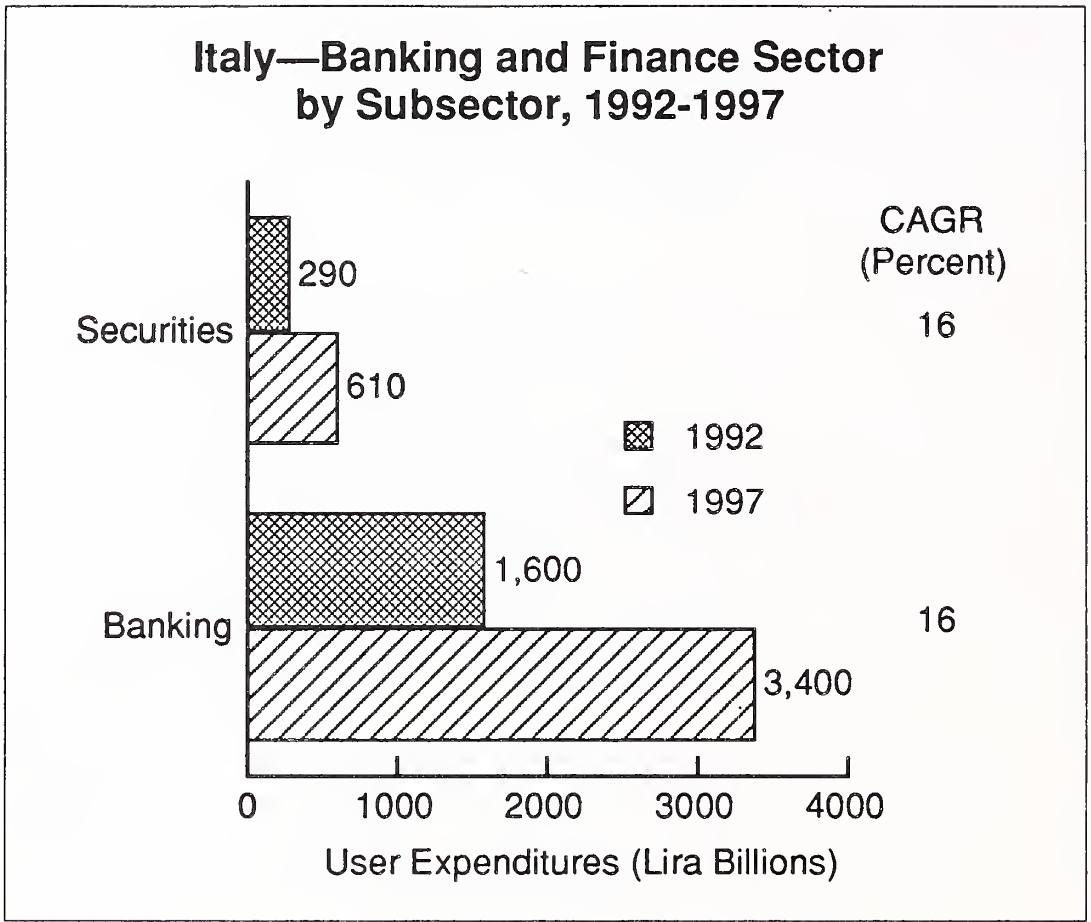
During the 1980s, Italian banks increased their activities in securities trading in line with the growth in the stock markets, principally that of Milan. In comparison with other major Western European countries, Italy does not generate as much trading in overseas and international securities or other financial instruments.

The Italian market for information systems related to the banking sector is dominated by IBM equipment. It is estimated that 80% of the installed base of mainframe and midrange systems is being supplied by IBM. Of the remaining 20% split among other vendors such as Bull Italia, Olivetti, Unisys and NCR, Bull is estimated to hold around 10%. However, it is expected that Bull will withdraw from the mainframe sector and concentrate on the slowly growing opportunities for open systems.

With this high penetration of IBM platforms, there is intense pressure on software and professional services companies to provide IBM expertise and/or products to run on IBM platforms.

Exhibit IV-10 shows the breakdown of the total Italian market restated at 1,900 Lire billion between banking and securities subsectors. Because of the relatively underdeveloped status of each subsector vis-a-vis their counterparts in the other major countries, both are forecast to grow faster than the European average, with banking just slightly ahead of securities. The major application requirements are branch systems for retail banks and increased automation of trading activities among all market participants.

EXHIBIT IV-10



These companies have between 6% and 16% of the overall software and services market each, but IBM's share of the banking services market goes higher than this, while Finsiel and Olivetti have correspondingly less.

Under these three leaders (who are joined by Reuters as the Italian number 3) comes a second level of 30-40 companies that have about 1% or 2% of the market each. This set of middle-ranking companies contains several that are owned by banks or jointly owned by a bank, an industrial company, and a public sector organisation with some major or minor parts of the equity being held by the owners and managers.

Exhibit IV-11 shows the top 10 rankings and market shares for the Italian banking and finance sector. This chart indicates the relatively high penetration of the leading 10 vendors with a 58% market share, compared to the 40% or 50% totals in the more advanced Northern European country markets.

The remaining 40% of the market is shared among the many small local software and service bureau companies, many of whom, reflecting the situation between the larger and the smaller banks, act as distributors and VARs for systems being delivered to or installed in local offices in Italian financial services companies.

EXHIBIT IV-11

Top Vendor Rankings and Market Shares, 1991
Italy

Rank	Vendor	Country of Origin	Revenues (Lira Billions)	Market Share (Percent)
1	IBM	U.S.	255	15.7
2	Finsiel	Italy	225	13.9
3	Reuters	U.K.	130	8.0
4	Olivetti Information Systems	Italy	90	5.6
5	System & Management (Gruppo)	Italy	50	3.1
6	Andersen Consulting	U.S.	45	2.8
7	Cap Gemini Sogeti	France	40	2.5
8=	Bull	France	35	2.2
8=	Digital	U.S.	35	2.2
8	Data Management	Italy	35	2.2
	Total Listed		940	58.2
	Total Market		1,620	100.0

5. Spain

Spanish banking has come under pressure from two directions:

- The need to expand and diversify to catch up with the rest of Europe in terms of services,
- The current recessionary climate in the world economy.

As the country prepares for the single European market in financial services, margins on core lending activities are being eroded, and rising debt levels have been hitting profitability. Banks are therefore being forced to look at ways of making their extremely dense branch networks more efficient.

In 1990 total net profits, as a percentage of total assets, fell from 1.54% to 1.52%, having increased from 1.4% in 1988, according to figures produced by the Associacion Bancaria. Traditionally, Spanish banks have been very profitable, because they have been able to secure cheap deposit bases and lend at relatively expensive rates. This lending margin was equal to 4.4% of total bank assets in 1989—the highest rate in the EC outside of Portugal and Greece.

Early in 1991, a survey listed two Spanish banks that specialise in retail business, Banco Popular and Banco Santander, as among the five most profitable banks in the world.

Although Spain should avoid a recession (the government expected economic growth of around 3% in 1991), the number of bad debts is rising. Last year, profitability was also adversely affected by competition, especially over interest-bearing current accounts.

Barclays Bank's Spanish subsidiary initiated a period of increased competition as long ago as 1986, but the war of "superaccounts", or *guerra de supercuentas,* really started in earnest in September 1989, when Banco Santander (Santander) increased the interest rates on its standard current account. Santander launched a nationwide advertising campaign—modelled on Barclays' own approach—to drive the fact home. Several of Santander's leading competitors eventually followed suit, but the gradual decline in interest rates over the past year has reduced the room for manoeuvre available to banks.

The results of this competition have been quick in coming. The decision by Banco Central and Banco Hispano Americano to merge earlier this year is, in part at least, a response to their belief that they need to be bigger in order to be able to spread their business beyond traditional retail boundaries. That realisation was underlined by a government decision to merge all the public banks into the biggest bank in the country, led by Banco Exterior, which, the authorities said, would "act belligerently in the markets." Nevertheless, Santander has emerged as the clear winner, increasing its market share among the so-called big seven Spanish banks by 1.7% between December 1989 and September 1990. Santander's private sector deposits rose by 21% over this period.

At the beginning of April, Santander announced a cut in its mortgage lending rates, indicating to some observers that the competition may switch to that front. However, that seems unlikely. Bank lending for personal loans has increased in the past two to three years, but loans to individuals still account for less than 30% of outstanding bank assets. In addition, the mortgage market is still heavily dominated by savings banks such as the Caja de Madrid, La Caixa and the state-run Instituto Hipotecario Oficial.

Instead, competition is likely to focus on other areas. Banks will attempt to increase the sales of non-financial products, such as life insurance. Already, alliances between banks and insurers have been mushrooming, with banks receiving commissions for policies sold through their branches. For example, Santander has developed relationships with the U.S. company Metropolitan Life, with which it has formed a joint venture. The bank believes that it is relatively easy for bank staff to sell life products that have a financial component, as do many savings-orientated contracts.

Banks in Spain are likely to seek to reduce their overhead. Figures produced by the Associacion Bancaria show Spain to be the most heavily banked country in the European Community. Average expenses are higher than in every European country apart from Ireland and the U.K. (both of which compensate by lending more profitably and by selling other non-financial services) and Portugal.

Spaniards have tended in the past to bank with those branches closest to their homes, and convenience has been an important element in influencing which institution customers choose to bank with. Spain has more banks per inhabitant than any other country except Luxembourg, and on average its 16,623 branches make loans of only $7.1 million—less than half the amounts loaned by Italian banks, and considerably lower than any other country except Greece.

Bankers believe this pattern will change as Spain becomes a more urbanised society, and customers begin to make more use of mechanised cash points. Many more banks will rationalise their operations. Smaller but better qualified staffs, backed up by data-processing systems and less centralised decision making will be necessary.

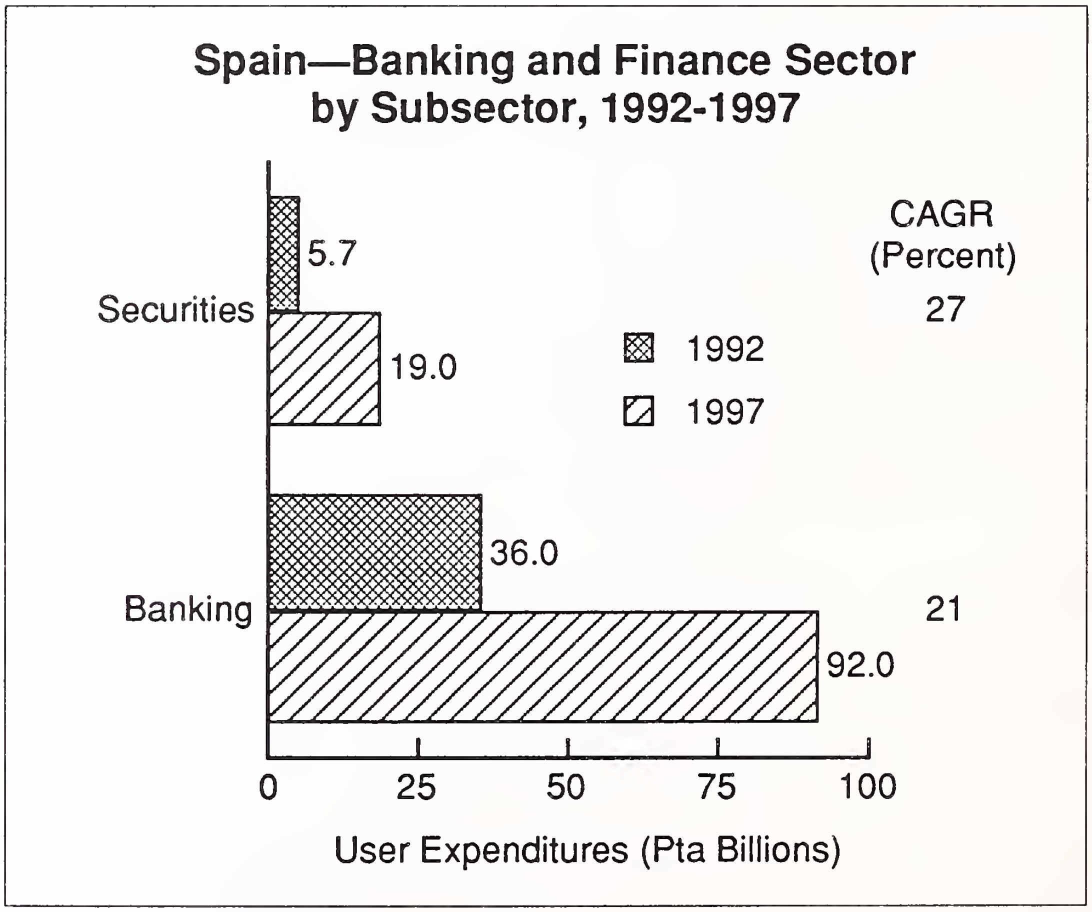
Santander currently has around 1,000 branches, compared with the 2,000 to 3,000 branches operated by BBV, Banesto and Banco Central, so it is under less pressure to cut its network. In the short term, banks will seek to sell off subsidiary networks. Last year, for example, Banco Santander sold its Banco Commercial Espanol brand to Crédit Lyonnais. This year, Banco Santander sold another of its subsidiaries, Banco Jover of

Catalonia, to Crédit Lyonnais. Banesto is to sell its Catalan unit, Banc Catala de Credit, to Instituto Bancario San Paolo di Torino of Italy. This rationalisation will go on for two to three years at a rapid pace before starting to settle down by 1995.

The Spanish market for systems is less dominated by IBM in the banking and finance sector than that of any of the other four major countries researched. Being less mature than the other major countries in terms of the use of data processing, Spain has allowed Digital Equipment to obtain a strong foothold in the move to distributed processing. Moreover, the potential for UNIX and open systems networks is greater because of the weaker position of entrenched proprietary systems.

Exhibit IV-12 shows the Spanish market for banking and finance sector systems, again split by subsector. The securities subsector is forecast to grow faster (at 27%) than the banking subsector (21%) but will still only have a 17% market share by 1997.

EXHIBIT IV-12



The services market also affords opportunities to improve the infrastructure technology supporting computing systems because of the lower penetration in Spain of the service approaches already current in the large markets of the northern countries of Western Europe:

- In Spain, processing services are still strong and accepted as a delivery mode for services to financial institutions. Two of the seven vendors interviewed in 1991 concentrated on this delivery mode, with application products firmly embedded in the service marketed and not used per se as part of the brand image of the service line,

- In-house software developments are supplemented by professional services obtained from external vendors, but teams are normally set to work, often on the user site under user management control, to provide tailored software suites to implement banking and securities houses applications. These applications are regarded as user-specific or certainly industry-specific; the use of ready-built package products is still only found in a minority of cases. Two firms visited by INPUT in 1991 were concentrating on providing professional services with high-calibre staff:

  - One smaller software house with under 100 staff was starting to capitalise on the product potential of the projects it had already undertaken,

  - Another had just been formed from a merger and acquisition phase, which has propelled it into being Spain's largest indigenous systems company. It is concentrating its marketing thrusts in the areas of large systems integration (SI) contracts and consultancy assignments, hoping to leverage its large pool of expertise in both directions.

All vendors concurred in seeing a continuing strong demand for computing services coupled with an ongoing lack of skilled and trained staff. Exhibit IV-13 gives the vendor rankings with market shares of the leading 10 vendors in Spain, who command together 45% of the market.

EXHIBIT IV-13

Top Vendor Rankings and Market Shares, 1991
Spain

Rank	Vendor	Estimated Revenues (Pta Millions)	Market Share (Percent)
1	Reuters	5,150	14.9
2	IBM	3,750	10.9
3	Eritel	2,450	7.1
4	Cibernos	1,950	5.7
5	CCS	1,900	5.5
6	Unisys	1,300	3.8
7	Ibermatica	1,200	3.5
8	CGS	850	2.5
9	Digital	800	2.3
10	GEIS	450	1.3
	Total Listed	19,800	57.4
	Total Market	34,500	100.0

6. The Rest of Europe

Exhibit IV-14 indicates the subsector split of expenditures in all the other Western European countries taken together. The securities subsector is relatively highly developed in terms of its market share, which at 20% of the equivalent overall sector (i.e., taking banking as well as securities into account), is second only to the U.K. in this respect. This reflects the presence of the important stock exchanges and other markets associated with the Zurich, Amsterdam and Stockholm financial centres.

The securities subsector is forecast (at 13%) to grow faster than the larger banking sector (12%), but not with enough of a differential to make much of an impact on its market share, which will still only be 21% in 1997.

EXHIBIT IV-14

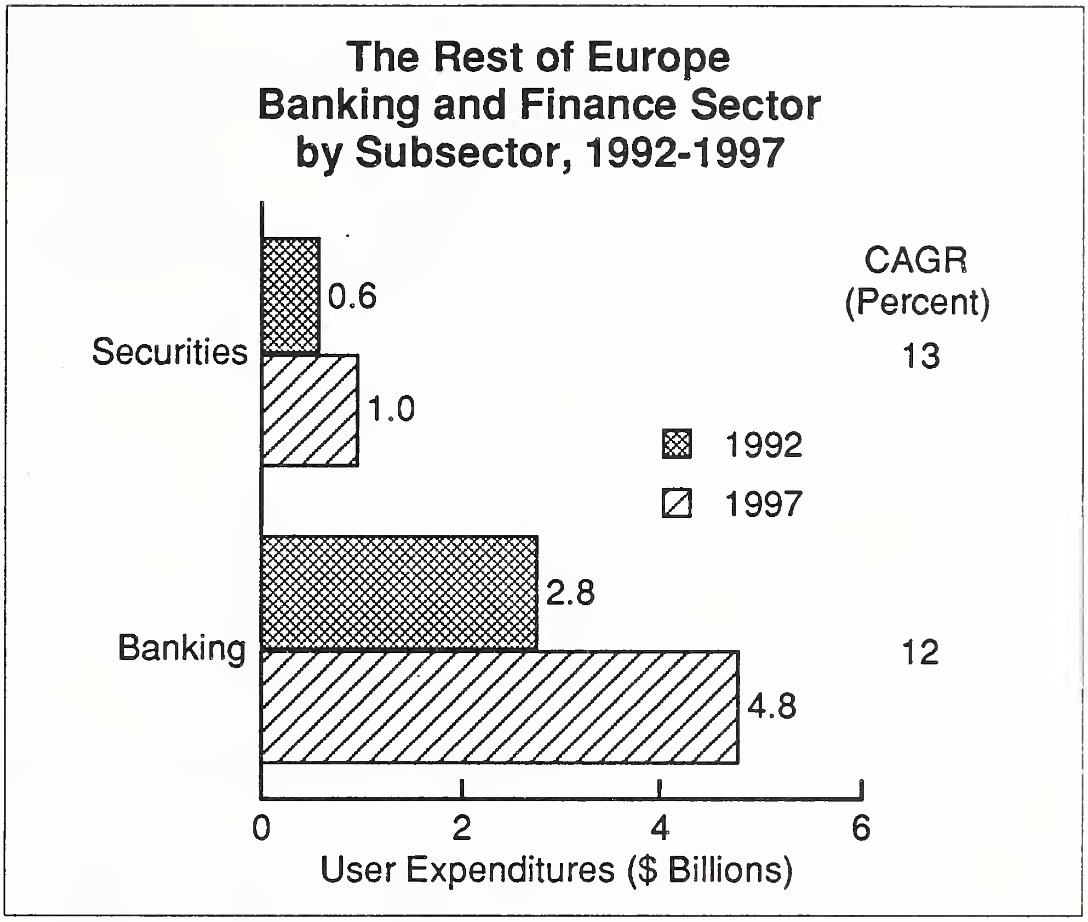


Exhibit IV-15 lists the top ten vendors in the aggregated sum of these country market sectors. The list contains four companies that are the leaders in the processing services segments in their national markets:

- Telekurs in Switzerland
- PBS in Denmark
- Fellesdata and Banken Betalingssentral in Norway.

This emphasises the importance of traditional delivery systems to the banking and finance sector.

Reuters appears near the top of the list, as in most countries, together with other big names of the industry:

- IBM
- Unisys
- SNI
- ICL.

EXHIBIT IV-15

Top Vendor Rankings and Market Shares, 1991
The Rest of Europe

Rank	Company (Country of origin)	Estimated Revenues ($ Millions)	Market Share (Percent)
1	IBM (U.S.)	310	10.0
2	Reuters (U.K.)	215	6.9
3	Telekurs (CH)	120	3.9
4	PBS (DK)	115	3.7
5	Fellesdata (N)	95	3.1
6	Banken (N) Betalingssentral	90	2.9
7	Unisys (U.S.)	55	1.8
8	Volmac (NL)	55	1.8
9	SNI (D)	50	1.6
10	ICL/Nokia Data (U.K./SF)	45	1.5
	Others	1,150	37.2
	Total	3,100	100.0

Included for the purposes of this study are the following countries:

- Sweden
- Denmark
- Finland
- Norway
- Netherlands
- Belgium/Luxembourg
- Austria
- Switzerland
- Portugal
- Greece
- Ireland.

V

Vendor Profiles

This chapter contains six profiles of important vendors active in the banking and finance sectors of the software and services market. The vendors have been chosen to illustrate the types of application software products that are currently being marketed.

A
BIS Banking Systems International Ltd.

1. The Company

Established in 1975, BIS Banking Systems has developed a well respected range of software products for the international banking community. MIDAS is its leading and best known product.

The company is a subsidiary of the BIS Group, which in turn is 100% owned by NYNEX of the USA following its acquisition in 1987. The BIS Group employs 1700 staff in the UK. The Banking Systems company employs about 700 staff and had a turnover of about £40 million in 1990. Some 200 staff are devoted to R&D and product developments.

The company's main centres of activity are the U.K., Luxembourg (120 staff) and France.

Switzerland, Germany and Spain are next in importance although there are no local offices. The company has other offices in major banking centres outside of Europe (e.g., Japan).

Because of its focus on banking systems, the company has been somewhat less affected by the post-"big bang" slump in securities trading than many other companies. It has shed some staff but seems to have maintained a healthy flow of business and profits. Roger Graham, the BIS Group MD, has claimed that NYNEX is developing the synergy between BIS products and communications network services to good effect. However, little of this seems to have emerged in the U.K. as yet. It is probably predominantly a U.S. effect.

2. Key Products and Services

a. MIDAS ABS (Advanced Banking System)

This is the key product family. Developed in-house in 1979, it still earns the majority of the company's revenues. Many global and major national banks are clients.

It is a modular product offering comprehensive functionality for wholesale and retail banking. Functions include treasury management, FOREX, risk management, investment management, funds payment, lending, and management and operational control. Originally developed on IBM S/34, the product has undergone continuous development and migrated through the hardware range of S/36 and S/38 to reside on AS/400 currently. PS/2s are used for the front end and the RS/6000 box (running AIX) can be included for some functions. There are no current plans for further product migration.

All sizes of banks are target clients. The smaller banks typically use the product with little customisation. Larger banks can afford to tailor the product to their specific needs. Clients also include building societies and corporate traders.

b. FUNDMASTER

FUNDMASTER provides multi-asset, multi-currency investment management functions. It has a modular design based upon general ledger, stock management, market and client-related information. It uses SWIFT and telex communications, and provides comprehensive back-office facilities for cash management, portfolio valuations, input investment instructions, control of allocations, commissions and safe-keeping operations.

The product was developed by BIS and launched in April 1986. CASE tools were used to develop the product in RPGIII. Unusually, the product is also available to clients as a logical design for implementation on most hardware platforms. To date, no client has taken up this option, whereas 4 sales of the completed product on AS/400 have been made.

The product sells for around £1 million with a high degree of customisation (up to 50%).

AGS is considered its main competitor.

c. Retail-Plus

Retail-Plus is designed to help retail finance organisations review and analyse customer data and target new products and services to customers. Each product or service can be identified in the system and facilities are provided for assessment of product profitability, client profitability and management information.

It is targeted at banks with up to 10 branches with medium to high volumes of retail banking business.

BIS acquired the source code of the product from CVS Newtrend 3-4 years ago in the USA. BIS developed the system further and sells it as its own product for £250,000 - £400,000. It has been on sale for about 6 months, with clients in Mauritius, Hong Kong and Yugoslavia.

Jack Henry and IBM offer competing products. That no Western European clients of BIS have taken the new product suggests that it could be a late entrant to the market.

Retail-Plus runs on AS/400 hardware and can communicate with ATMs and other interfaces for customer data collection. The trade finance product Leo is sold in conjunction with Retail-Plus.

d. BIS Leo

This is a trade finance system and automates the functions of accounting, risk management and administration. It consists of 5 integrated modules covering:

- Letters of credit
- Bankers' acceptances
- Collections
- Bills financing
- Reimbursements.

The product runs on AS/400 in native mode and provides a powerful PC-based document (e.g., letters of credit) customisation capability that can link directly to a customer's PC.

Originally acquired from a U.S. company, BIS has sold Leo for 6-7 years. There are 65 sites, 20 of which are in Europe.

e. DR-ONE

This is a PS/2-based dealing room delivery system running a token ring LAN. It is based on an open architecture and allows for the integration and delivery of both digital and video market information sources, in-house host systems, Excel and Lotus 1-2-3.

Acquired 2 years ago from an Australian company, there seem to have been few European sales. There is an installation in Holland, with the largest system in Australia, where Westpac has a 180-position system installed.

The workstation sells for $30,000. There is very little customisation involved.

3. Financial Performance

Since NYNEX acquired BIS, there have been no company figures published by the group itself beyond statutory requirements. It is believed that the BIS Banking Systems Division has weathered the recession in the U.K. quite well and has benefited from an extensive customer base in other work banking centres in the USA, Japan, Hong Kong and Western Europe.

B

EDS-Scicon and EDS-GFI

1. The Company

SD-Scicon was formed in 1988 when Systems Designers bought the Scicon Corporation from BP. Since then, the company has undergone significant restructuring and the divestment of some of its European and U.S. operations. In particular, it sold its U.S. subsidiary, Warrington Financial Systems Inc. in February 1990 and its German operating company, SCS, to Cap Gemini Sogeti in August 1990. SCS had a significant business in the banking and finance markets of Germany.

In October 1990, SD-Scicon acquired a 51% shareholding in Charbonnages de France Informatique (CdFI). This company is being managed through GFI, SD-Scicon's French subsidiary. Its services are largely IBM mainframe computer bureau based, with a significant software products business. The products include a range of accountancy systems.

The company provides a wide range of software products and services to most industrial, commercial and government markets. These are offered throughout Europe. For the continuing business, some 15% of European revenues are derived from services to the banking and finance markets. Growth in the French market has been counterbalanced by declining U.K. activity over recent years.

Overall, the company made an increased loss in 1990 despite selling its major loss-making subsidiary, SCS. The losses have arisen from major software development project over-runs (in the U.K.). EDS took advantage of the poor performance to acquire SD-Scicon in 1991. It has recently announced the integration of its U.K. activities into EDS-Scicon and its French operations into EDS-GFI.

2. Finance Activities

Many divisions of EDS-Scicon sell some or all of their products and services into the banking and finance sectors. They cover a diversity of applications.

Connex Europe is an EDS-Scicon business based in the U.K. It was established in early 1990 following the renewal of earlier marketing agreements with Deluxe Data Systems Inc. to sell the Connex EFTPOS product (and the recently launched Asset product for credit/debit card management) throughout Europe.

In the U.K., EDS-Scicon offers IBM mainframe systems operations services, a range of EDI software products and message and date switches (based on X.400 standards). These are sold across many markets. The Processing and Network Services business unit contains a software development and consultancy group focussed on the banking, finance and insurance markets. Projects are largely IBM mainframe based.

In France, the EDS-GFI group has an equally diverse range of product and service offerings covering many markets. In GFI this includes systems operations on IBM mainframe, Bull and Tandem hardware, file transfer products, EDI and telematics. It also has production specifically targeted at the insurance market and is developing some niche kernel software for the banking market in association with a few clients. CdFI is largely an IBM mainframe service bureau and systems operations company. However, it has some accounting packages that have sold well in the French market, as well as ESQUIF, a product for managing Social Security top up payments to sick people with insurance cover from French Mutual Assurance Companies.

In the U.K., EDS-Scicon's banking and finance activities have undergone major retrenchment since the "big bang". At one time there was a Banking & Finance Department, but this was disbanded in 1988 with some redundancies and re-allocation of staff to other businesses. The remnants of this department are now largely associated with the Computing and Network Services group, which provides its services across many vertical markets.

There seems to have been no company-wide strategy for the banking and finance market. Systems operations services and communications products are sold opportunistically or to longstanding clients (e.g., Credit Suisse). The small consultancy and software development group has some ongoing project work and is seeking new niches to exploit. Its Taurus Link product is one such example.

There are no indications of attempts to co-ordinate U.K. and French developments in the banking and finance market.

SD-Scicon had several largely unsuccessful years trying to sell Connex. In 1988 it was decided to raise the profile of the activity and create a Europe-wide sales effort. SD-Scicon therefore established Connex Europe to spearhead this effort. This has been much more successful, with several large sales in the U.K. and one in Italy, and with the market showing good potential.

Other products are sold from a products group profit centre which has no specific market focus.

In France, EDS-GFI continues to take a 'services' approach to selling through its large systems operations capability. Products often arise from applications developed for particular customers. Vertical market penetration therefore tends to be opportunistic in the first instance. GFI's approach is consistent with that taken by many other companies in the French market. GFI has been consistently (but not excessively) profitable over recent years.

Products for the insurance market are the most fully developed. However, there is currently a lot of interest in the securities and banking sectors and developments are in hand in the following areas.

a. Bourses

- A variety of communications products allowing dealers etc. to access the RELIT system. Some have been available since mid-1990.

b. Banks

- A system for managing foreign currency loans to industry for major projects and sales activities. The system will be called Crystal.

- New bank accounting systems, ready for the change in reporting requirements in 1993.

- There are plans to develop asset and liability management systems.

All banking systems will be on IBM mainframes using DB2 and CICS.

3. Key Products and Services

The main application products are:

a. Connex

- A leading EFTPOS product running on IBM mainframe and Tandem hardware. Developed by Deluxe Data Systems Inc. of the USA in 1971, it is sold under licence by SD-Scicon throughout Europe. SD-Scicon has over 4 years of experience with this product.

  Connex provides a full range of EFTPOS functions, linking ATMs and POS terminals into a central EFT system, and is particularly suited to clients with high volumes of transactions. Connex also provides a settlement facility.

b. Connex Asset

- This is a recently launched credit/debit card management system also from Deluxe Data Systems. EDS-Scicon has taken on the system. The product runs on the same hardware platforms as Connex.

c. Taurus Link

- This is a new PC-based system developed by Oracle for companies dealing in U.K. equities and requiring access to the new London Stock Exchange settlement system (Taurus). The intention is that Taurus Link avoids users needing to re-develop their existing settlement systems by providing a link between them, their client database and the Taurus data network.

d. GEFIARD, GEFIRENTS

- These are kernel products for the management of life and non-life insurance business. Developed with Norwich Union in Paris as an application project, the kernel products were launched at the end of 1987. Each new scale requires significant development and customisation.

e. ESQUIF

- This is a uniquely French product developed by CdFI. It is targeted at the Mutual Assurance companies that provide top-up insurance to supplement French Social Security payments when an individual is ill. CdFI claims to have 15% of the French market, with 25-30 installations. There seem to be few competitor products.

Network products include:

TED/TOM

- For file transfer between IBM mainframes. Developed by GFI and sold under licence by Data Delivery and Management Systems Inc. of the U.S.

PC X.400, IMX.400

- PC- and VAX-based systems conforming to the X.400 standard for data interchange. These products, developed by Scicon in the U.K. during the late 1980s, enable fax, telex, EDI, and E-mail to be sent and received from one system.

EDI: Interbridge

- Sold under licence from SITPRO, Interbridge provides a message formatting facility to recognised EDI standards. It runs on a wide range of hardware platforms, including PCs.

EDI: Workstation

- An EDS-Scicon development providing a user interface to multiple EDI networks, document formatting and translation of received documents for use by other user systems. It is VAX based.

Comutex

- A GFI-developed telematics product based on Tandem and IBM mainframes. It can handle both Minitel and IBM protocol terminals. The product operates within custom application software.

All products are sold for a one-time licence fee with optional annual maintenance fees thereafter. Comutex is at the heart of GFI's Telematics service, and so earns a significant level of associated network fees income.

The pricing for some of GFI's banking kernel software is very 'flexible' and is determined by the need to win the development contract. GFI does not plan to make a profit on the software in its own right. Instead, it is used as a sales aid.

C

Financial Systems Ltd

1. The Company

Financial Systems Limited started about 11 years ago and developed its first banking product on a Micro 5, one of the first multi-user PCs. Recently, turnover reached £1 million, having grown steadily for several years. Profitability is estimated at around 10-15% of turnover.

BOS Software Limited (INPUT's original target respondent) is now part of the TIS group, which uses Financial Systems as its banking and finance sector VAR. TIS is very UNIX orientated and this has shaped the software development strategy of Financial Systems. The MicroBank suite of programs consisting of modules covering a wide range of banking functions is the main product range. Fund 2000 and Bank 2000 are new products, with the latter eventually superseding MicroBank. The company is small, responsive to client demands and claims to invest heavily (in proportion to turnover) in product R & D. However, the company has few sales overheads as it relies on references from TIS, its distributors in Hong Kong and the Cayman Islands, referrals from existing clients and sell-ons.

Its market focus is the offshore banking industry; clients are more likely to be in Gibraltar and the Cayman Islands than in London.

Some 80% of clients take the products as they are. A few larger clients spend as much on customisation as on the product, but more typically, customisation costs about 50% of the initial product price.

The company seems content with its niche role and spends little time worrying about market trends and developments unless they arise through the existing client base.

2. Key Products and Services

a. MicroBank

MicroBank is the main, modular product covering banking, securities, trusts, corporate administration and accountancy, fixed asset register, sales ledger, etc. It is a back-office system targeted at the offshore banking market. Primarily the product is PC based, but, through UNIX, it can operate on a wide range of platforms, including VAX. Communications are provided by BOS's (or TIS's) own Arcnet product or by using Novell software.

b. Bank 2000

This is the replacement product for MicroBank and is currently under beta test in two sites. It runs on the same hardware platforms.

c. Fund 2000

Also a new product, with four sales to date, Fund 2000 is targeted at Unit Trust managers operating in the offshore financial markets.

3. Financial Performance

None is provided.

D

Management Data Ges. mbH

1. The Company

Management Data Ges. mbH (MD) was founded in 1971 by Creditanstalt. Headquartered in Vienna, it has branches in Innsbruck and Salzburg.

MD currently has over 3,000 domestic customers, and abroad the Management Data banking software is used by more than 500 clients in over 50 countries.

The company is organised into three divisions:

- System House
- Projects/Consulting
- International Banking Software

On January 1st, 1991, Management Data acquired a majority holding (75%) in CBM, Computer-, Betriebswirtschaft und Management-Service GmbH, originally a 100% subsidiary of the First Austrian Savings Bank. CBM's product range complements current MD products and consists of software tools for system engineering (CASE) and software packages to support top executives in their decision-making processes. This synergy is expected to provide MD with the future resources and capacity envisaged in the growth policy being pursued by the company.

In order to be an "international" partner for its clients, MD became a founding member of Allied Computing Services Ltd (ACSL), together with seven other leading system houses in Europe. ACSL is located in Switzerland and offers through its members a consistent quality standard to its customers who operate on a European scale.

During 1989 and 1990, Management Data established subsidiaries in Germany, the U.K., Hungary and Singapore. The company has a network of distributors and agencies covering Belgium, France, Greece, Iceland, Italy, Japan, Korea, Luxembourg, Portugal, South Africa, Spain and Yugoslavia.

The following three tables contain data on the management, shareholders, and affiliates and subsidiaries, respectively.

EXHIBIT V-1

Other Executives

Name	Position
Fritz Petrides	Manager, Finance
Gerhard Hofer	Manager, System House
Alexander Czernin-Morzin	Manager, International Banking Software
Walter Descher	Manager, Project Consulting
Gerhard Kratky	General Manager
Brigitte Hanreich	Manager, Marketing

EXHIBIT V-2

Shareholders

Shareholder	Percent Owned
Creditanstalt	95
Management, Management Data	5

EXHIBIT V-3

Subsidiaries and Associated Companies

Name	Country	Percent Owned
ACSL Allied Computing Services	Switzerland	17
Management Data GmbH	Germany	80
Management Data Kft	Hungary	100
Management Data Asia Pacific Pte Ltd	Singapore	80
Management Data Ltd	U.K.	80
JUS-EDV Systeme GmbH	Austria	95
CMD Datenverarbeitungs- und Verlags GmbH	Austria	50
CBM Computer, Betriebswirtschaft, und Management Service GmbH	Austria	75
Semper Data GmbH	Austria	25

In December 1990, Management Data employed 148 staff, not including associated companies.

EXHIBIT V-4

1990 Employee Chart

Employee Category	Number of Employees
Software Development	70
Sales	20
Support	20
Management and Administration	38
Total	148

2. Key Products and Services

Management Data is organised into three divisions:

- System House
- Projects/Consulting
- International Banking Software.

a. System House

MD views itself as a service provider and concentrates not just on selling hardware but also on providing IS services and support, and user education. The following services are offered:

- Integrated solutions based on software, hardware, consultancy, training, maintenance, peripherals and additional equipment. For example, consultancy on and installation of remote data processing systems including Btx, telex, teletext, local networks and desktop publishing

- Total business solutions for lawyers, notaries, business trusts, hotels, tourist associations, trade, industry, publishing houses, and other organisations

- Training in PC software and hardware

- Software and hardware support of installed systems.

b. Projects/Consulting

This division is organised into the following business areas:

IS Consulting:

- Architectures for information processing
- Construction of print documents
- Systems selection
- Project implementation, office automation, videotext
- Project consulting.

Software development:

- Systems development
- Turnkey projects
- Maintenance and development of user software.

c. International Banking Software

MD offers the following software products:

- CORONA II, CORONA/400, Baby-CORONA II: Bank coordination for host system and IBM-PS/2 (PC AT)
- HERMES: Message and query system
- COMFORT, Baby-COMFORT: Coordination of foreign exchange trade confirmation
- NADOK: News from the document business
- ROBOT: Development system for use in the banking credentials business
- WINGS: Project management system
- PCX: Communication system for a PC acting as an external Btx computer
- DBTOP: Data dictionary/repository for all business-related information.

d. Market Analysis

The following three tables contain revenue breakdowns as reported by Management Data itself.

EXHIBIT V-5

1990 Market Analysis by Division (ATS Millions)

Division	Revenue	Percent
System House	222.7	50
Projects/Consulting	44.5	10
International Banking Software	178.2	40
Total	445.4	100

EXHIBIT V-6

1990 Market Analysis by Product/Service (ATS Millions) (MD Classification)

MD Service	Revenue	Percent	Percent
Standard software products	110.8	75	25
Individual software	17.5	12	4
Customer support	12.9	9	3
Education	4.1	3	1
Others	3.6	1	-
Total Services	148.9	-	33
Hardware/Accessories	296.5	-	67
Total	445.4	100	100

EXHIBIT V-7

1990 Market Analysis by INPUT Delivery Mode Austria Only (ATS Millions)

Division	Revenue	Percent
Software Products	30	8
Professional Services	28	7
Turnkey Systems	327	85
Total	385	100

EXHIBIT V-8

1990 Market Analysis by Industry Sector (ATS Millions)

Industry Sector	Revenue	Percent
Banking/Finance	134	30
Insurance	44	10
Distribution (Retail)	89	20
Distribution (Wholesale)	134	30
Local Government	22	5
National Government	22	5
Total	445	100

EXHIBIT V-9

Five-Year Financial Summary (FYE 31-12) (ATS Millions)

Year	1986	1987	1988	1989	1990
Revenue	133.5	163.6	227.8	343.8	445.4

Sixty million Austrian schillings (ATS millions) of 1990 revenues were generated outside Austria. The revenues of associated companies (i.e., those in which MD has only a minority stake) are not included.

Sixty percent of 1990 revenues were generated from the hardware component of turnkey sales.

E

Sema Group plc

1. The Company

This group was formed in June 1988 when the CAP group in the U.K. acquired all the shares of the Sema Group SA of France in an exchange of shares (plus cash). The subsequent poor performance of the U.K. operations resulted in French management taking full control of the company and the company name changing from Sema CAP to Sema Group plc.

The company provides a wide range of software products and services to most industrial, commercial and government markets. It is well established in France and the U.K., with significant operations in Spain and Germany and a presence in several other European countries.

The finance market is its largest revenue-earning sector on a companywide basis, representing 22% of group turnover in 1990.

a. The U.K. Finance Division

This division represents some 15-20% (about £22 million) of U.K. turnover, and is growing again following the post "big bang" collapse in the securities market and a slowdown in banking generally. During 1989 and 1990, Sema slimmed down its finance division significantly, reallocating staff or shedding them altogether.

Sema offers a limited range of products in the U.K., mainly for dealing room systems, card management and treasury operations. BIS and EDS compete strongly for the bank back-office systems market, and Sema does not believe there is a viable market for them in the U.K.

Consultancy is a growing strength for Sema. In 1990, a new consultancy group was formed to bring together skills dispersed around the company in various operational units. The finance market is a target for this group.

Bespoke software development remains a significant source of revenue, and Sema has entered into various development and customisation projects for clients or partners. For example, Sema has a co-operative deal with Reuters on RMS, its Taurus dealing room system, which will be sold as a Reuters product.

Sema sees no major threat to its U.K. finance activities except in the unlikely event that a company such as EDS would buy market domination.

For the future, Sema plans to increase its finance activity. It sees the market looking for proven products and possibly for outsourcing of a wide range of services. Both these trends are the result of banks fighting to contain costs and improve efficiency.

To address the products market, Sema is looking for partners to share development risks (these could be clients as well as other vendors) or for ready-made systems to acquire or sell as agents.

Systems operations (SO) is run as a separate business within Sema and it is felt that there are growing opportunities for SO in the financial market. Developing market awareness is seen as key to the business strategy, which suggests that Sema is not content with its present market visibility.

2. Key U.K. Products

a. CARDPAC

CARDPAC is a plastic card management system. It is used by the issuers of cards to manage accounts. Sema claims that the system handles three-fourths of the retailer issued cards in the U.K. Clients include large retail chains with their own store cards as well as banks.

The product was originally developed by Credit Card Systems Inc. (CCSI) of the USA. Sema acquired an exclusive European licence and then adapted the product for European and Far Eastern markets. It runs on AS/400, Tandem and IBM mainframes, and is targeted at the medium-sized card issuer (50,000 plus cards in issue) rather than the majors such as Barclaycard.

Priced at £100,000-£120,000, the product usually undergoes customisation for the client. Contracts are typically 60% product licence, 40% customisation fees.

CARDPAC has been on the market for 4-5 years and is sold through a sales force numbering 4-5. There are no plans to migrate the product to UNIX or other hardware platforms, but there are development plans for a successor product.

b. IBOS

IBOS is a small product selling for about £25k targeted at the treasury function of wholesale banking. It is PC based and uses the Novell net-working system. The base licence covers 4 workstations and is pro-rated for larger configurations. The product is usable as it is. Larger clients sometimes make extensive developments costing up to 5 times the product value.

There have been 8 U.K. sales and 2 overseas, one of which was via a Greek distributor.

c. HSDS

HSDS (High Speed Dealing System) is a software kernel developed by Sema for use in dealing room systems. A major client is National Westminster Bank, which has a 240-workstation money market system. HSDS is based on Stratus and PS/2 computers.

The product is used in large bespoke system development where the product licence fee might represent only 10% of the total contract price.

Originating in 1980, only 5 sales have been made to date, although there are signs that the market for the product is reviving again.

d. CIS, CIFER

Sema is the agent for these products but has only just introduced them into the U.K. Originating in the USA, the products run on IBM mainframes and enable clients to "clean up" customer data files (i.e., detect duplicated entries and multiple variants of a single client/address).

F

Winter Partners Holding AG

1. The Company

Winter Partners was founded in 1970 by Dr. G.R. Kutter and Dr. J.B. Winter. The core business is the development and implementation of global standard software packages for the financial services industry. The products are fully modular, cover a large number of financial instruments and can be configured to suit the business requirements of the individual bank, securities house or brokerage for many regulatory environments as well as for global institutions.

The company is organised in three product divisions:

- CIB and BANCOS
- IBS and RIBS
- Third-Party Products.

In 1989, Electrowatt AG increased the minority holding it purchased in 1987 to a majority holding by acquiring the shares of the family of co-founder Dr. G.R. Kutter. The resulting ownership structure gives Electrowatt AG the majority and Dr. J.B. Winter the minority.

Since 1986, Winter Partners has established a network of subsidiaries located in the larger financial centres such as Zurich, Geneva, Frankfurt, London, New York, Singapore and Hong Kong. The company is represented through agents in Kuwait, Malaysia, Indonesia and Taiwan.

Each subsidiary is responsible for its own sales, customer services (account management, project management, consulting, training, system integration) and product services (software installation, customisation and local development).

EXHIBIT V-10

Subsidiaries as of 01.01.1991

Subsidiary	Country	Percent Owned
Winter Partners AG	Switzerland	100
System Integration AG	Switzerland	100
Winter Partners GmbH	Germany	100
Winter Partners Ltd	U.K.	100
Winter Partners Inc.	U.S.	100
Winter Partners Pte.	Singapore	100
Winter Partners (HK) Ltd	Hong Kong	100

In January 1991, Winter Partners employed 212 staff.

EXHIBIT V-11

Other Executives

Name	Position
A. Hobi	Group Controller and Treasurer
E. Wintsch	BANCOS/CIB Division Manager
K. Williams	IBS Division Manager
A. Kurschner	RIBS Operation Manager
Dr. H.U. Schaub	CIB Operation Manager

The objectives that Winter Partners has set itself for the 1990s are:

- To offer high-quality and efficient standard banking packages, to continue developing their functionality, and to keep abreast of technology through long-term cooperation with clients and equipment suppliers.

- To offer high-quality services in the area of support, consulting, and systems integration to the financial services industry, whether in relation to its standard packages or independently.

- To operate very profitably, as a prerequisite for further expansion, staff motivation, development, continuity, quality, and innovation.

2. Key Products and Services

Winter Partners is organised in three divisions:

- CIB and BANCOS
- IBS and RIBS
- Third-Party Products

a. BANCOS

BANCOS is a banking package covering all aspects of retail, wholesale and private banking running on A-series machines of Unisys. Besides general accounting and asset management features, BANCOS supports retail banking applications such as automated teller machine transactions, lending and client accounting. Its structures are well suited to medium-sized investment and wholesale banks, full-service private banks, and investment departments of insurance companies and other institutional investors.

A state-of-the-art management module, new functionalities in the areas of capital markets, settlements, payment systems and interfaces to trading and client accounting systems are in development.

BANCOS is a joint venture between Winter Partners AG and Unisys (Switzerland) AG. Over 30 institutions—mainly in Switzerland—are currently using BANCOS.

b. CIB

CIB (Computer Integrated Banking) is Winter Partners' strategic project. It aims at providing large financial institutions with a fully electronic development and maintenance environment for banking applications.

c. IBS

IBS provides automation of all the usual international banking activities. These include foreign exchange, loans and deposits, commercial lending, retail and securities. The system offers a full multi-currency, multi-branch general ledger, and management information system to track and control liquidity, interest rate sensitivity, and client exposure.

IBS is in daily use in over 100 financial institutions in Central and Eastern Europe, the Far East and the U.S.

IBS runs on the entire VAX range of computers from Digital Equipment Corporation and has the support of DEC through a global cooperative marketing agreement. Winter Partners offers IBS with the required hardware and system software as an OEM.

d. RIBS

RIBS is a modular and integrated suite of programs covering all areas of banking, general finance and accounting, securities, foreign exchange, money market trading and settlement, and multi-currency investment management.

Each of the over 20 RIBS installations is a customised solution. Site-specific table and parameter settings permit the software to handle multi-currency dealing, processing and reporting in four languages simultaneously.

RIBS runs on the entire VAX range of computers from Digital Equipment Corporation. Winter Partners markets it together with the required hardware and system software, as an OEM.

3. Third-Party Products

Profitmaster is a decision support package for interest rate risk analysis and financial management.

Pathmaster is a data integration tool for asset and liability decision support systems.

Other services offered by Winter Partners include:

- Consulting services with special focus on asset and liability management
- Systems integration services

EXHIBIT V-12

1990 Market Analysis by Geographic Area (SFR Millions)

Country	Revenue	Percent
Switzerland	10.4	28
Germany	5.6	15
U.K.	12.9	35
U.S.	3.7	10
Far East	4.4	12
Total	37.0	100

EXHIBIT V-13

1990 Market Analysis by Industry Sector (SFR Millions)

Industry Sector	Revenue	Percent
Banking/Finance	36.7	99
Insurance	0.3	1
Total	37.0	100

EXHIBIT V-14

1990 Market Analysis by INPUT Delivery Mode (SFR Millions)

INPUT Delivery Mode	Revenue	Percent
Application Software Products	8.5	23.0
Professional Services	3.0	8.0
Systems Integration	0.5	1.4
Customer Services	19.0	51.4
Hardware	6.0	16.2
Total	37.0	100.0

EXHIBIT V-15

Five-Year Financial Summary (FYE 30-09) (SFR Millions)

Year	1986	1987	1988	1989	1990
Revenue	18	32	44	35*	37
Annual Growth (Percent)	-	78	38	-20	6
Profit before Taxes	NA	NA	NA	0.05	0.05

* Only nine months due to change of fiscal year.

A

Forecast Database, 1992-1997

Exhibit A-1 shows the forecast for each country in local currency.

EXHIBIT A-1

Industry-Specific Software and Services Banking and Finance Forecast, Local Currency

Country	Currency	1992	CAGR (Percent)	1997
France	FFM	16,400	13	29,600
Germany	DMM	4,100	18	9,300
U.K.	PSM	1,630	13	3,000
Italy	ILM	1,895	17	4,100
Spain	PtaM	41,366	22	111,592
Scandinavia	$M	1,560	10	2,520
Benelux	$M	1,070	12	1,850
Rest of Europe	$M	725	15	1,430
Total Europe	$M	14,400	14	28,000

Exhibit A-2 shows the changes made in this year's forecast in comparison to that of the previous year.

The changes made in the market assessment for the banking and finance sector in 1992 reflect a more optimistic overall re-assessment of the size of the professional service and turnkey systems sectors, which is countered by the exclusion of cross-industry processing and network services and applications software. European market size, measured in dollars, has been further inflated by 6% because of exchange rate movements. Growth overall is down 4% from previous estimates.

EXHIBIT A-2

Banking and Finance Sector
Reconciliation of Market Forecast, Western Europe

Subsector	1991 Market			1996 Market			1991 Study 91-96 CAGR (%)	1992 Study 91-96 CAGR (%)
	1991 Study ($M)	1992 Study ($M)	Variance (%)	1991 Study ($M)	1992 Study ($M)	Variance (%)		
Processing Services	4,120	2,890	-30	6,950	3,950	-43	11	6
Turnkey Systems	1,150	1,420	23	2,550	2,400	-6	17	11
Applications Software Products	1,280	1,170	-9	3,900	3,050	-22	25	21
Systems Operations	100	100	0	300	290	-3	25	24
Systems Integration	520	565	9	1,250	1,350	8	19	19
Professional Services	4,200	5,000	19	8,150	9,550	17	14	14
Network Services	1,930	1,760	-9	4,050	3,800	-6	16	17
Total for Industry Sector	13,300	12,900	-3	27,150	24,400	-10	15	14
Cross-Industry Software and Services	2,000	2,400	20	3,850	5,350	39	14	17
Grand Total	15,300	15,300	0	31,000	29,750	-4	15	14

B

European Exchange Rates and Inflation Assumptions

The following table, Exhibit B-1, shows the standard exchange rates used throughout the 1992 programme to consolidate country market data for overall Western European forecasts and vendor market shares.

EXHIBIT B-1

U.S. Dollar and ECU Exchange Rates 1992

Country	Currency	U.S. Dollar	ECU
France	FF	5.18	6.96
Germany	DM	1.52	2.04
United Kingdom	PS	0.532	0.715
Italy	Lira	1,150	1,544
Sweden	Sek	5.54	7.45
Denmark	DK	5.89	7.93
Norway	NK	5.98	8.03
Finland	FM	4.15	5.51
Netherlands	Dfl	1.71	2.29
Belgium	BF	31.26	41.94
Switzerland	SF	1.35	1.81
Austria	Sch	10.63	14.33
Spain	Ptas	96.2	129.6
Portugal	Esc	134.9	181.0
Greece	Dra	174.0	234.8
Ireland	IR£	0.57	0.765
	$	1	1.34

Source: *Financial Times*, 30 December, 1991

EXHIBIT B-2

Inflation Assumptions 1991 and 1992

Country	Assumption 1991-1996	Assumption 1992-1997	Change
France	3.0	2.7	-0.3
Germany	2.7	3.9	+1.2
United Kingdom	4.8	3.7	-1.1
Italy	4.4	5.2	+0.8
Sweden	6.3	4.0	-2.3
Denmark	2.7	2.4	-0.3
Norway	4.9	3.4	-1.5
Finland	5.0	1.4	-3.6
Netherlands	2.4	3.3	+0.9
Belgium	3.3	3.2	-0.1
Switzerland	3.3	3.5	+0.2
Austria	2.6	3.2	+0.6
Spain	4.7	5.0	+0.3
Portugal	8.0	12.5	+4.5
Greece	12.0	11.0	-1.0
Ireland	3.0	3.0	0.0
European Average	4.0	4.2	+0.2

Source: OECD Forecasts, Q4 1991