INPUT

MARKET FORECAST

United Kingdom Market for Software and Services

1994-1999

Market Analysis Programme - Europe

United Kingdom Market for Software and Services

1994-1999

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Abstract

This report provides a detailed analysis of the Computer Software and Services market in the United Kingdom.

The computer software and services market is defined by INPUT as comprising eight major sectors, processing services, turnkey systems, applications software products, system software products, professional services, network services, systems operations and systems integration.

The addition of the equipment services sector defines a market referred to as information services.

The report provides analyses and forecasts of the United Kingdom market by vertical industry and cross-industry sectors.

The vertical industry sectors identified comprise, discrete manufacturing, process manufacturing, transportation, utilities, telecommunications, retail distribution, wholesale distribution, banking and finance, insurance, healthcare, education, local government, central government, and business services.

The cross-industry sectors identified comprise, accounting, education and training, engineering and scientific, human resources, office systems and planning & analysis.

Estimates of sector market growth are given for the years 1993 and 1994 together with annual size estimates for each year up to 1999.

Companion reports provide an identical analysis for Germany, France and Italy. Additionally a complete analysis of the European market by individual country market is also available.

INPUT also publishes detailed reports on the US market for information services and a complete review of the world-wide market.

**Market Analysis Programme –
Europe**

*United Kingdom Market for Software
and Services, 1994-1999*

Table of Contents

Exhibits

A

I

Introduction

This report is produced as part of INPUT's European *IT Intelligence Service* for the computer software and services industry.

Software and services markets continue to attract widespread attention. This report is designed to assist in achieving a consolidated view of the United Kingdom market.

This report can be read in conjunction with other INPUT reports in order to identify key market and product trends, vendor strategies and opportunities.

The report provides market sizes for 1993 and 1994 with forecasts for each year through 1999.

A
Scope of the Report

This forecast represents an on-going analysis of the software and services market in the United Kingdom.

The report contains an analysis and forecast of the total IT budget, including both internal and external IT-related spending. This is split into:

- Equipment sales — expenditure on hardware products

- Equipment services — expenditure on equipment maintenance and environmental services

- Software products — all expenditure on systems software products and applications software product licences

- Other information services — all expenditure on other services such as professional services, systems integration, systems operations, processing services, network services, turnkey systems, and systems software products and applications software product support services

- Communications — all expenditure on IT-related telecommunications equipment or services

- Facilities — IT budget expenditure on overheads such as space, heating, lighting, furniture, vehicles, etc.

- Staff — direct in-house staff costs including any temporary contract labour.

1. Information Services Delivery Modes

INPUT defines eight delivery modes that are referred to in this report as the *software and services market* and an additional delivery mode, *equipment services* which when included with the other eight, are collectively referred to as the *information services market*. The complete list is as follows:

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

Spending on software and services is assessed and forecasted in relation to anticipated changes in the level of overall IT budgets.

The market is additionally analysed by industry sectors, cross-industry sectors and by generic product sectors. Exhibit I-1 indicates the relationship between the delivery mode forecasts and the market sector forecasts.

Exhibit I-1

Delivery Mode versus Market Sector
Forecast Content

Delivery Mode	Submode	Market Sectors		
		Industry Sectors	Cross-Industry Sectors	General
Processing Services	Transaction Utility Other	X	X	X X
Turnkey Systems		X	X	
Applications Software Products		X	X	
Systems Operations	Platform Applications	X X		
Systems Integration		X		
Professional Services		X		
Network Services	Network Applications Electronic Information Services	X X		X
Systems Software Products				X
Equipment Services				X

Source: INPUT

2.   Industry sectors

The industry sectors:

- Discrete Manufacturing
- Process Manufacturing
- Transportation
- Utilities
- Telecommunications
- Retail Distribution
- Wholesale Distribution
- Banking and Finance

- Insurance
- Healthcare
- Education
- Local Government
- National Government
- Business Services
- Other Industries.

3.   Cross-Industry Sectors

INPUT has identified seven cross-industry market sectors. These sectors or markets involve multi-industry applications:

- Accounting
- Education & Training
- Engineering & Scientific
- Human Resources
- Office Systems
- Planning & Analysis
- Other Cross-Industry.

4.   Generic Sectors

Certain sectors or sub-sectors are considered independent of any industry or cross-industry influence. These are:

- Equipment services
- System software products
- General utility processing services
- General electronic information services.

The full definition of each sector is given in INPUT's Definition of Terms which is included as Appendix C of this report.

B
Methodology

I-5

INPUT's methodology for market analysis and forecasting remains consistent with that used in past years.

Vendors and users are surveyed to determine what is being spent on software and services and to anticipate the likely trends in both the short and long term.

1.   Sources

This report is based principally on research activities conducted by INPUT during 1994:

- A vendor research programme of interviews with over one hundred software and services vendors in the United Kingdom

- Further vendor and user interviews in the United Kingdom to determine trends and opinions within specific market sectors

- INPUT's continuous analysis of the delivery modes and vertical industry sectors comprising the information services market.

Additionally INPUT's extensive library and data-base of information relating to the software and services industry was used.

2.   Market Sizing

The process used to establish the base year market size (total user spending within that year) is shown in Exhibit I-2.

Exhibit I-2

Base Year Market Sizing
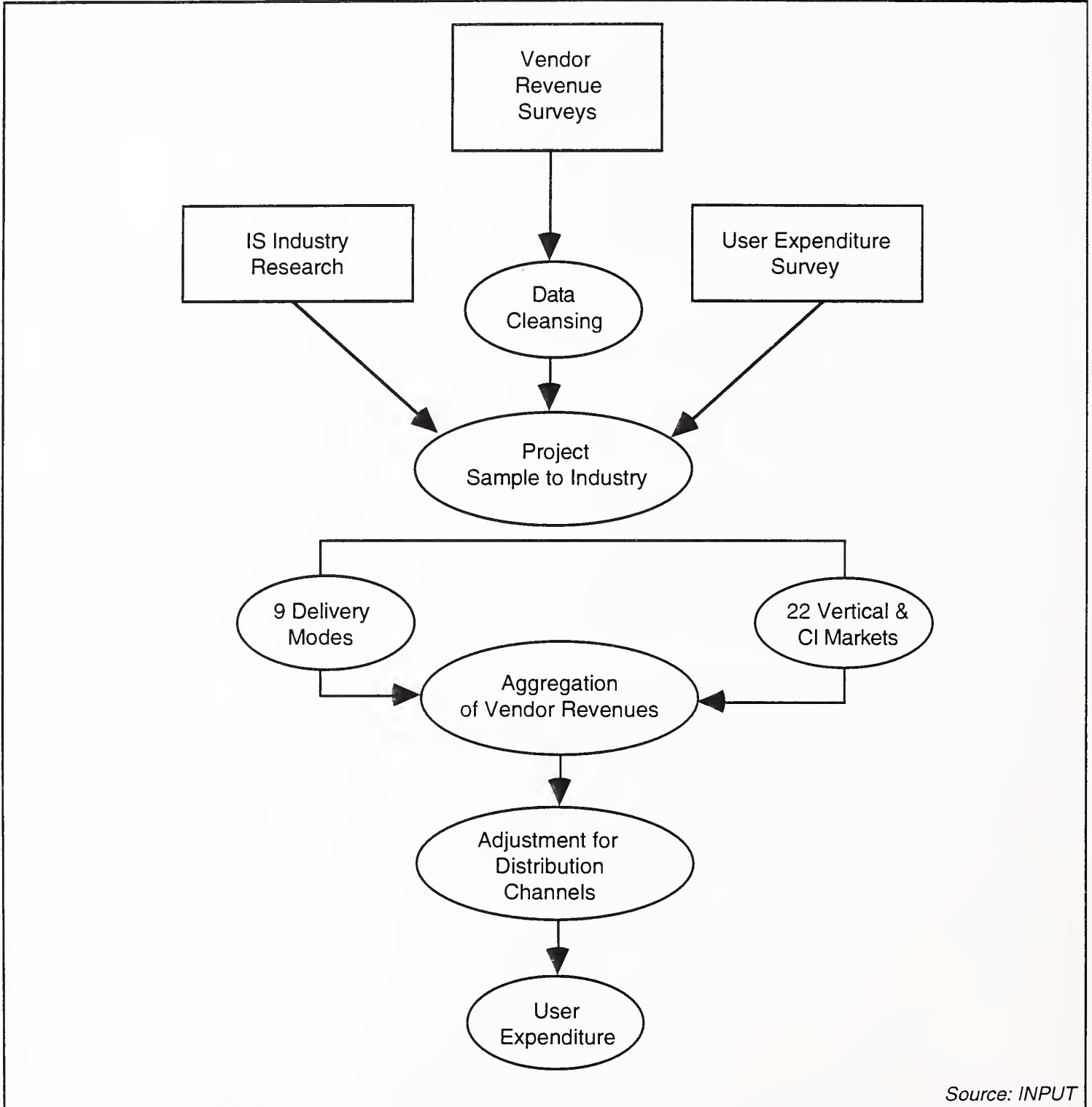
INPUT determines 'previous-year' software and services revenues for 9 delivery modes and 22 vertical and cross-industry sectors for over a hundred vendors operating in the United Kingdom.

This research process is accomplished through interviews, use of public data such as press articles and annual company reports, and estimates by INPUT consultants.

The industry sector, delivery mode and sub-sector revenues of each vendor are recombined to ensure that there is no double counting or overlap. Only revenues derived from within the United Kingdom are included.

Many vendors publish accounts which do not coincide with the end of the calendar-year. INPUT adjusts business generated by these firms to the calendar year for consistency.

The initial local currency data from the vendors analysed is projected to represent the revenues of the entire country market based on INPUT's view of the contribution to be expected from the remaining minor vendors.

Adjustments are made to eliminate errors due to distribution channel overlap or mark-up and to ensure that captive market information is excluded. Captive markets are those revenues which a vendor receives from within the vendor's parent group of companies.

Demographic data have also been used to validate the market sizes. INPUT uses such sources as the *Panorama of EC Industry* published by the European Commission, to check trends in sector expenditures and employee levels in different industries.

The end result is a base year (in this case 1993) software and services market figure representing user expenditure for each of the market sectors or delivery modes analysed.

3.   Market Forecasts

In the forecasting step, shown in Exhibit I-3, INPUT surveys IS (Information Systems) executives and finance directors to determine their projected expenditure levels on IT in general and software and services in particular.

Exhibit I-3

United Kingdom Market Forecasts

Source: INPUT
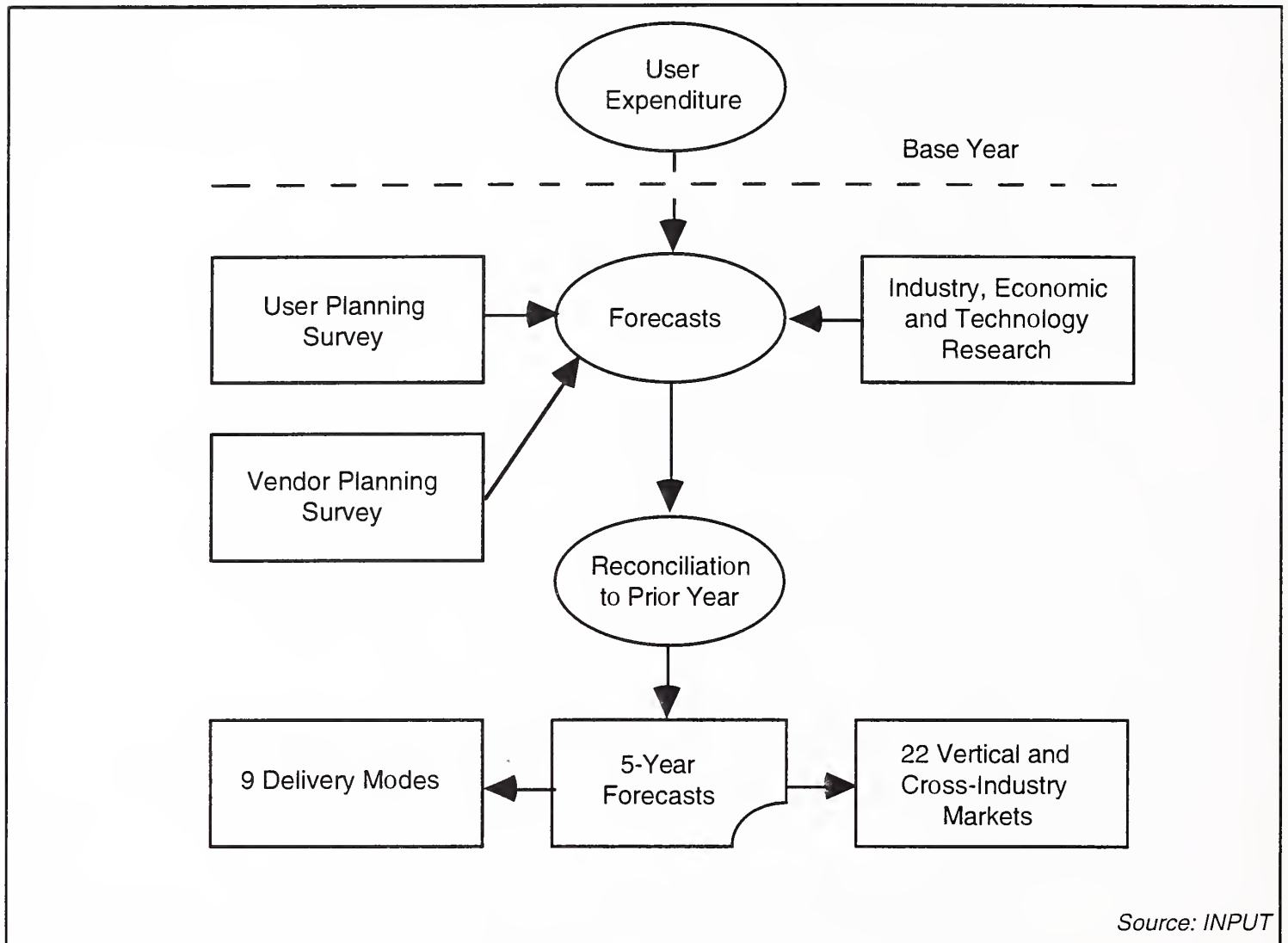
The market model which forms the basis for the forecasts includes a GDP deflator (adjustment for predicted inflation) for the United Kingdom.

Economic growth assumptions for the United Kingdom and for each major industry sector are also factored into the forecasts.

In addition vendor interviews are conducted to establish opinions of the market and views of the key opportunities.

INPUT consultants add their judgement to the resulting projections, testing the results to ensure they are reasonable.

In particular this phase produces consolidated forecasts for the whole of the United Kingdom by consolidating industry forecasts.

C
Report Structure

The remainder of this report is structured in the following way:

Chapter II is an executive perspective offering a summary of key statistics from the report.

Appendix A contains detailed tables of market data and forecasts for the United Kingdom provided in DM, US dollars and ECUs.

Appendix B lists the economic assumptions used in the compilation of this analysis and forecast including data used by INPUT in consolidating its total European market report.

Appendix C contains INPUT's definition of terms.

D
Related INPUT Research Programmes and Reports

The following reports contain detailed analysis of each market sector, offering commentary and recommendations for vendors. Further commentary and analysis of market sectors identified in this report may be found in the reports listed below:

1. **European Market Sector Reports**
- European Market for Software and Services 1994-1999.

- German Market for Software and Services 1994-1999.

- French Market for Software and Services 1994-1999.

- Italian Market for Software and Services 1994-1999.

- Systems Integration Market Analysis and Forecast, 1994-1999

- Outsourcing Market Analysis and Forecasts 1994-1999

- Software Product Support — European Market Futures, 1994-1999

- Customer Services Market Analysis and Forecasts, 1994-1999

- Industry Sector Forecast Database, 1994-1999

2. **US Reports**
- US Information Services Annual Report

- Forecast Compendium

- US Professional Services Market

- US Systems Software Product Market

- US Processing Services Market

- US Information Systems Outsourcing Market

- US Applications Solutions Market

- US Network Services Market

- US Equipment Services Market

- US Industry Market Reports

- US Cross Industry Market Reports

3.   **World-wide Report**

- World-wide Market Forecast, 1993-1998

II
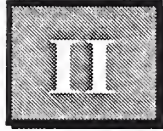
Executive Overview

A
United Kingdom Market Overview

The United Kingdom market for software and services is the third largest individual country market in Europe. The Italian market, in contrast, is only just over half the size of the United Kingdom market despite the greater size claimed for its overall economy.

The software and services industry experienced high growth (20% plus per annum) almost from its inception in the early 1970s right through to the end of the 1980s. Subsequently growth has slowed as a result of general economic recession but more especially through strong deflationary forces in IT markets.

Slower growth during the remaining part of the 1990s is now expected to be a continuing feature for software and services markets. The UK economy has technically been out of recession for over two years since the down turn of the early 1990s, but still organisations are meeting highly competitive and difficult trading conditions.

In this environment expenditure on IT systems needs to demonstrate *value* and deflationary forces within equipment and software product markets will hold back overall growth in money terms.

The United Kingdom software and services market is therefore forecast to grow overall at about 8% during the remaining half of the decade, as is shown in Exhibit II-1.

Exhibit II-1

United Kingdom Software and Services 1993-1999

Source: INPUT
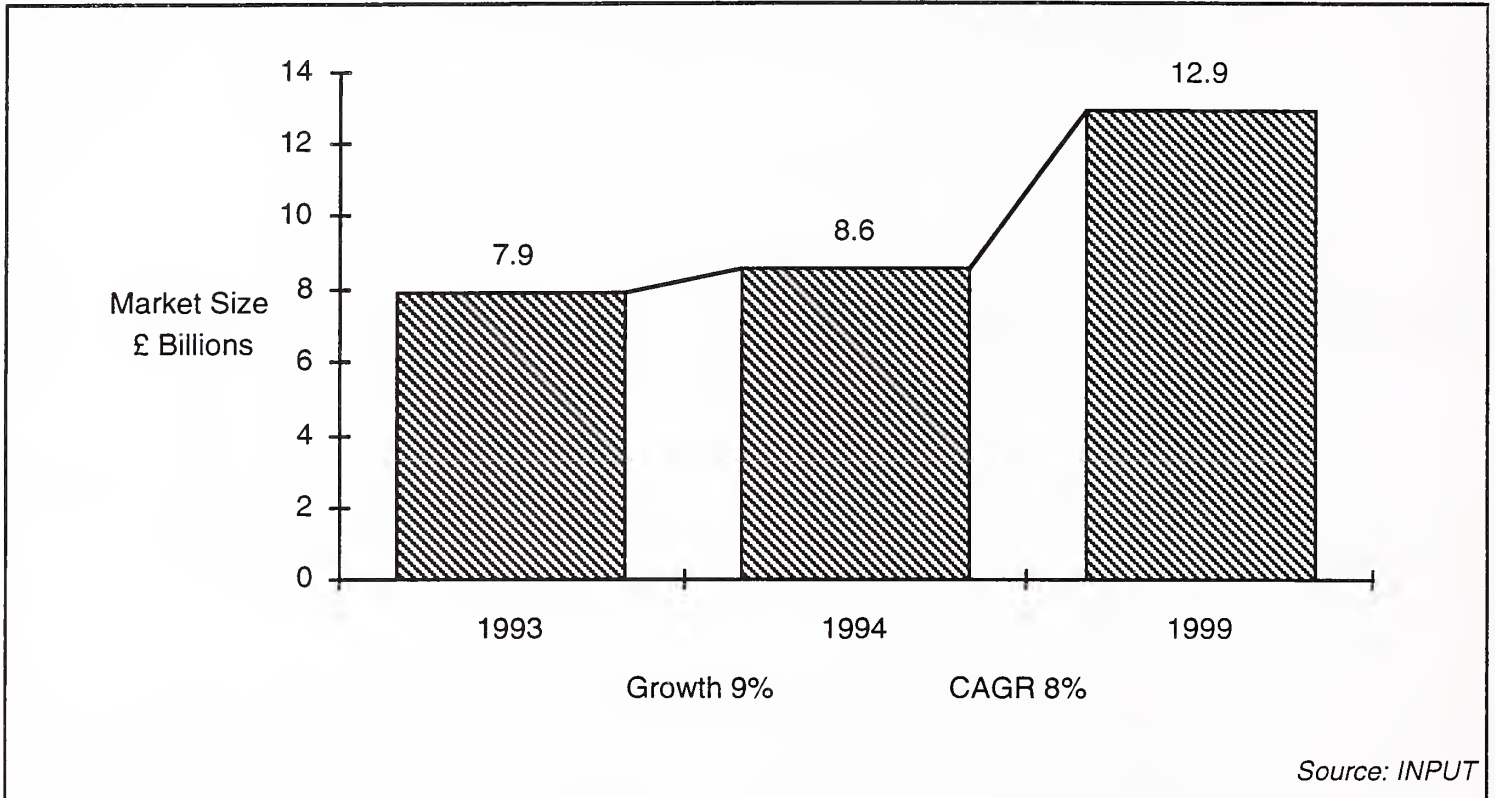
Exhibit II-2 shows a comparison of the expected growth rates of the major elements of estimated total IT budgets in the United Kingdom.

Exhibit II-2

Total IT Spending — United Kingdom 1994-1999
Forecast Growth Rates by Budget Category

Category	Value
Software Products	9%
External IT Services	9%
Data Communications	4%
Total IT Budget	1%
Equipment Sales	-3%
Facilities (In-house)	-3%
Internal Staff	-6%

% CAGR 1994-1999
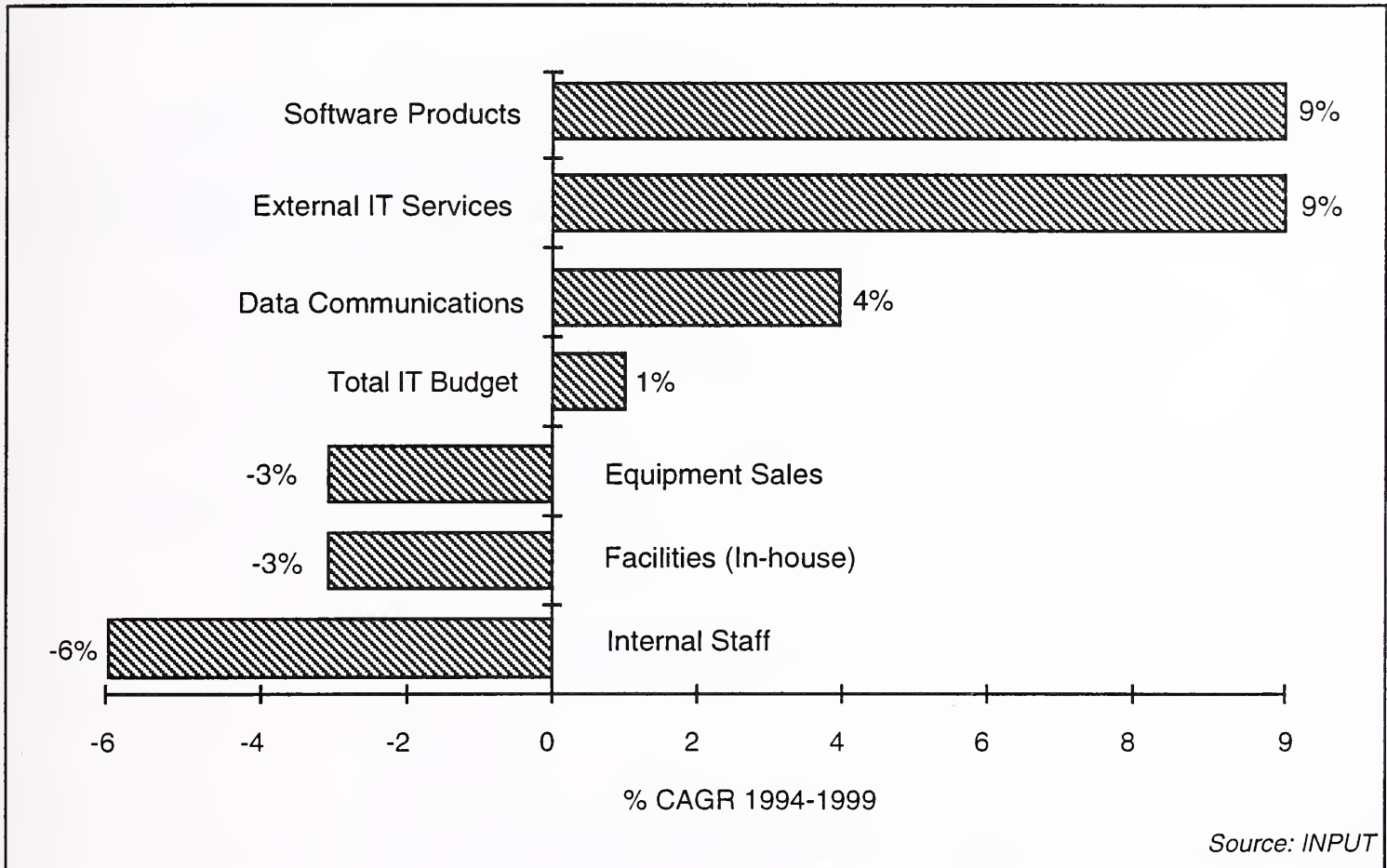
Source: INPUT

The general trend to outsource information systems functions remains of increasing importance as the main driver for software and services markets.

It implies that the market opportunity for information services vendors broadens to the entire information systems budget. This includes budgets directly controlled by the internal information systems function as well as budgets under the control of operational departments or business units.

Despite the challenging competitive IT market conditions prevailing in the 1990s, software and services markets still represent significant commercial growth opportunities, particularly when viewed within the context of the lower overall growth expectations for user's total IT expenditure (estimated at 1% per annum through to 1999).

A comparison of the leading individual country markets in the world is shown in Exhibit II-3. This exhibit demonstrates the sheer size of the United States software and services market in comparison to the United Kingdom and other individual country markets.

Exhibit II-3

Largest Software and Services Country Markets

Country	1994 Market Size ($B)	1994-1999 CAGR (%)
United States	150	12
Japan	39	9
France	19	6
Germany	16	8
UK	13	9
Italy	7	7

Source: INPUT

B
United Kingdom Forecast — £ 13 Billion Market 1999

The United Kingdom market for software and services grew to £8.6 billion in 1994 and is expected to reach £13 billion by 1999.

The overall annual growth rate of 8% predicted for the entire market clearly disguises both the high and the low growth sectors, as can be seen from Exhibit II-4.

Exhibit II-4

Delivery Mode Analysis Information Services Market
— United Kingdom, 1994-1999

Delivery Mode	Market Size (£ Billions)	CAGR (%)
Professional Services	2.0 (1994), 2.1 (1999)	1
Equipment Services	2.4 (1994), 2.2 (1999)	−1
Turnkey Systems	1.4 (1994), 1.9 (1999)	7
Application Software Products	0.8 (1994), 1.4 (1999)	11
Systems Software Products	1.3 (1994), 1.5 (1999)	4
Network Services	1.0 (1994), 2.0 (1999)	15
Processing Services	0.6 (1994), 0.7 (1999)	4
Systems Integration	0.9 (1994), 1.5 (1999)	11
Systems Operations	0.8 (1994), 1.9 (1999)	19

☐ 1994
◩ 1999

Market Size (£ Billions)

The highest growth opportunities lie in the areas of Systems Operations and Network Services.

The growing trend to outsource major portions of the information systems function drives an opportunity for information services vendors to broaden to the entire information systems budget.

That budget includes both expenditure directly controlled by the internal information systems function as well as budgets under the control of operational departments or business units.

The lowest growth sectors are those of:

- Equipment services, where ultra reliable components and open competition have driven down the market, only countered by increasing demand for network communications and desktop support where increasing complexity and critical applications demand higher levels of support

- Professional services, strong growth in IS consulting and the outsourcing of applications management are being countered by dampened demand for custom software development as users shift inexorably to greater reliance on application products

- Systems software products, where increases in volume sales are eroded by intense competition

- Processing services, the classic services delivery mode remains marginalised by outsourcing contracts and severe price pressure. Nevertheless there still remain specialised sectors, for example high volume high quality laser printing, that continue to remain attractive business areas.

Other important market sectors are:

- Applications software, which will benefit from the shift away from the increasingly un-economic custom software development approach, but will have its money value growth held back by highly competitive market conditions. The success of SAP's R2/3 range of applications products is testimony to user' increasing appetite for standardised, widely available solutions

- Systems integration will grow at significantly above the overall market rate as users pay for the resolution of the complexity of solution building at the implementation phase and not within the product price

- Turnkey systems will also benefit from the user's need for resolution of system complexity within a total standardised package of hardware and software. This will remain attractive for many standardised environments such as hotels and retail outlets.

Exhibit II-5 provides an analysis of the largest vertical industry markets in the United Kingdom.

Exhibit II-5

Vertical Industry Analysis Software and Services Market — United Kingdom, 1994-1999
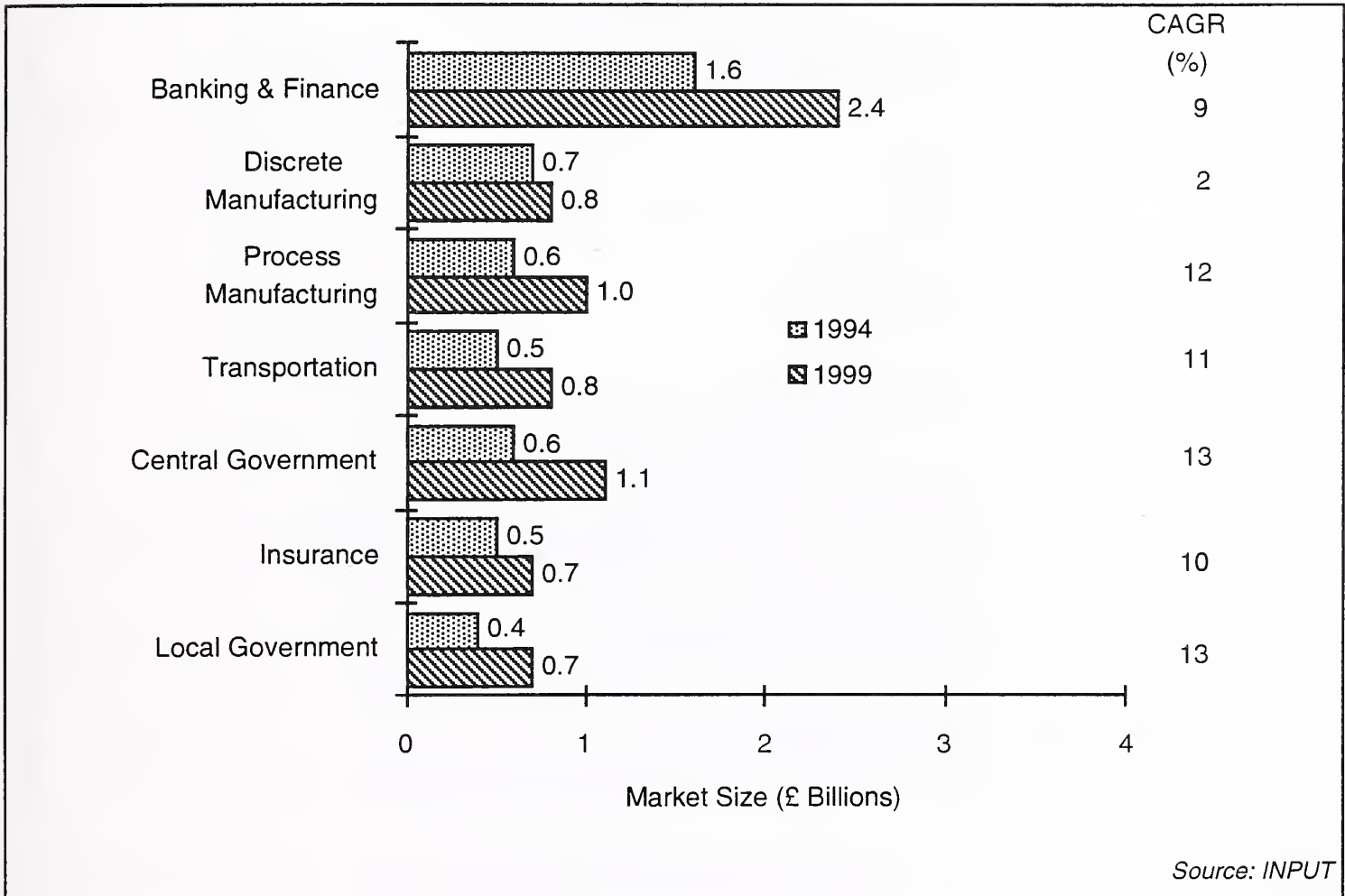
The analysis of the United Kingdom cross industry sector market is provided in Exhibit II-6.

Exhibit II-6

Cross Industry Sector, Software and Services Market
— United Kingdom, 1994-1999

Market Size (£ Millions)

Sector	1994	1999	CAGR
Accounting	125	190	9
Education & Training	25	25	0
Engineering & Scientific	40	55	7
Human Resources	55	65	3
Office Systems	120	185	9
Planning & Analysis	65	95	8
Other Cross-Industry	70	95	6

Source: INPUT
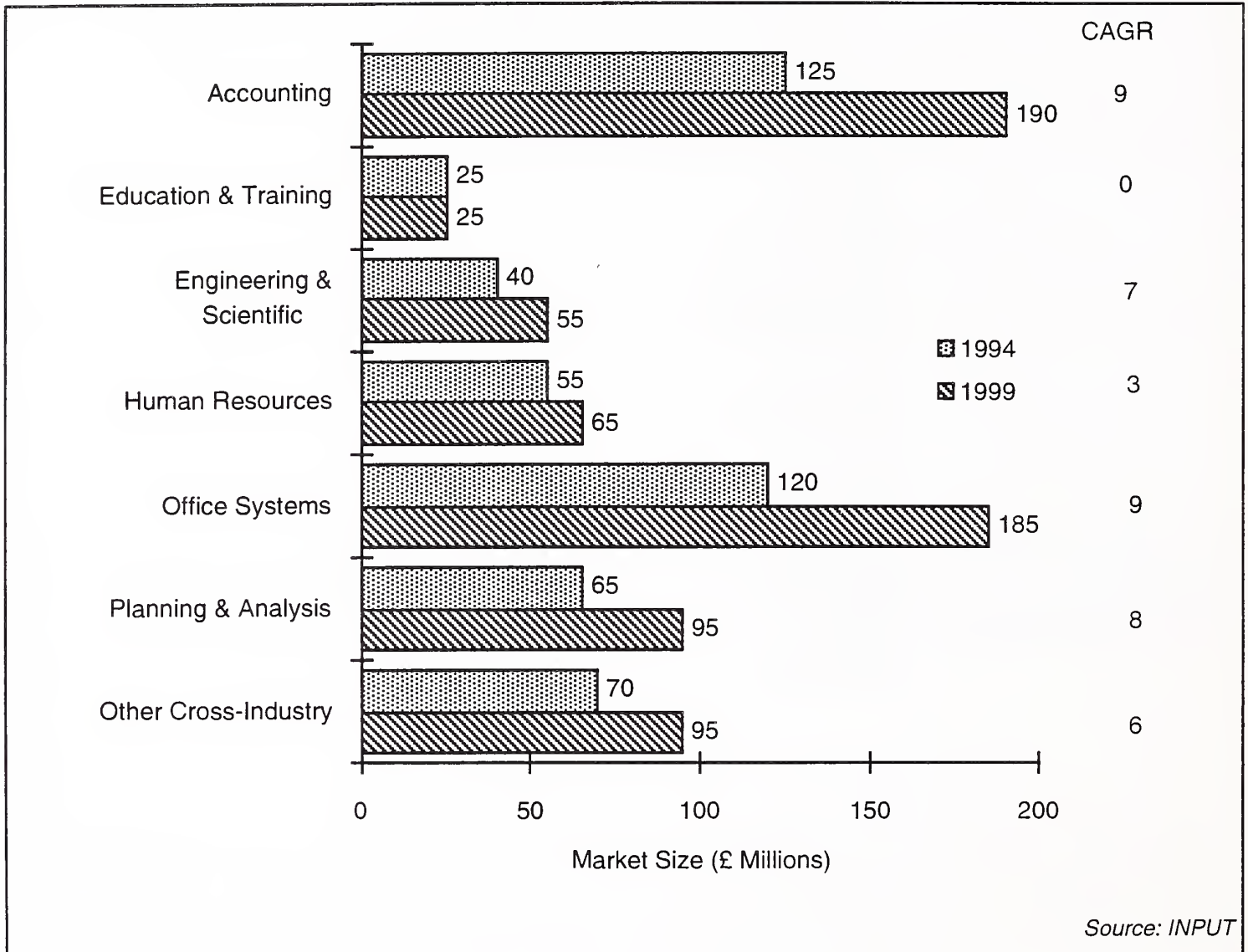
C
Vertical Industry Markets

The forecast growth of each vertical industry sector market in the United Kingdom is provided in the following series of exhibits, Exhibits II-7 through II-21.

Exhibit II-7

Discrete Manufacturing Sector, Software and Services Market — United Kingdom, 1994-1999

Horizontal bar chart showing Market Size (£ Millions) for 1994 and 1999, with CAGR values:

Sector	1994	1999	CAGR
Processing Services	35	26	-6
Turnkey Systems	180	160	-2
Application Software Products	90	110	4
Professional Services	155	110	-7
Network Services	73	113	9
Systems Operations	110	185	11
Systems Integration	39	48	4

Market Size (£ Millions)

Source: INPUT
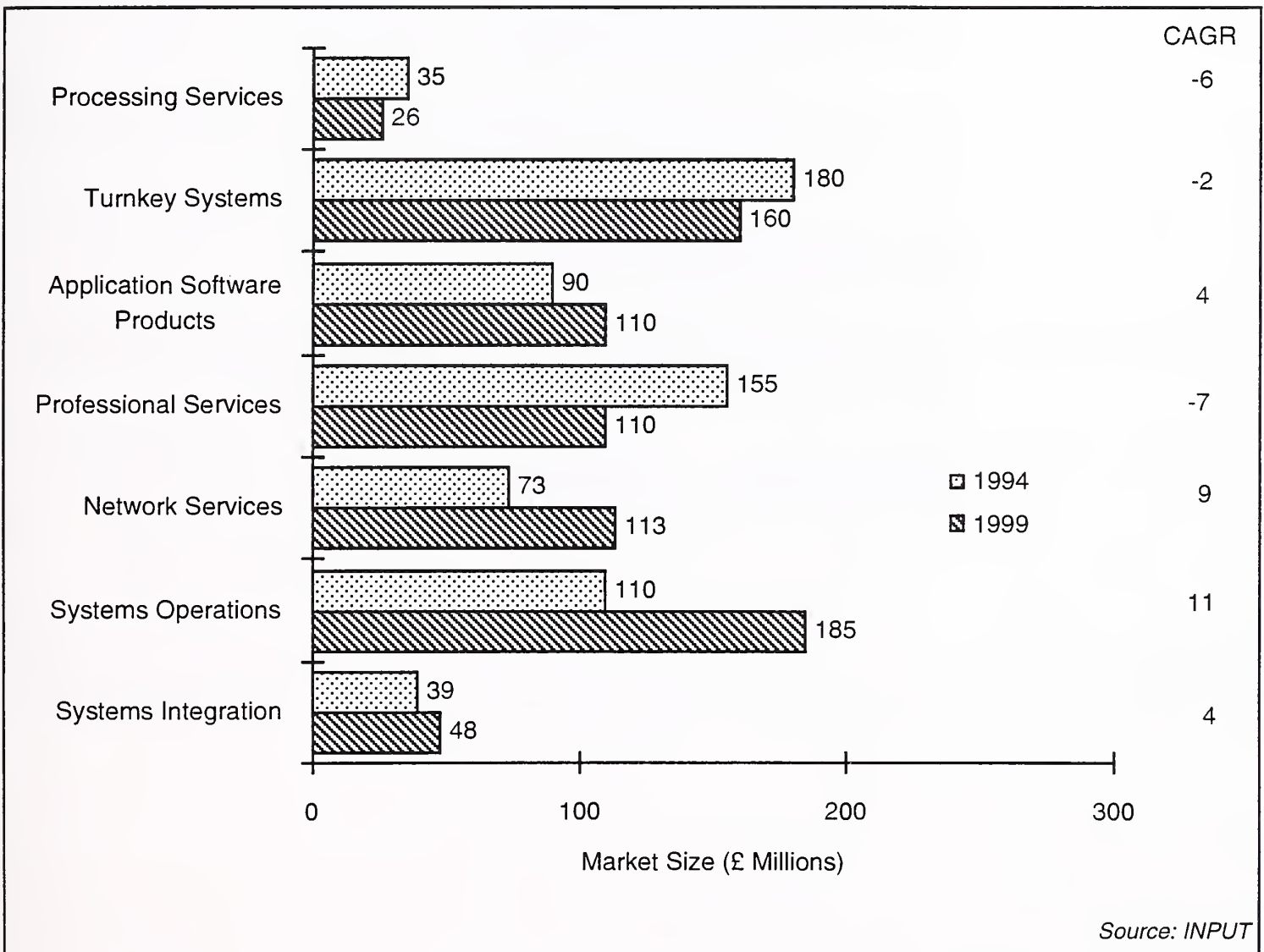
Exhibit II-8

Process Manufacturing Sector, Software and Services Market
— United Kingdom, 1994-1999

Category	1994	1999	CAGR %
Processing Services	17	20	3
Turnkey Systems	140	220	9
Application Software Products	75	175	18
Professional Services	135	170	5
Network Services	54	109	15
Systems Operations	115	250	17
Systems Integration	55	77	7

Market Size (£ Millions)

□ 1994
◧ 1999

Source: INPUT
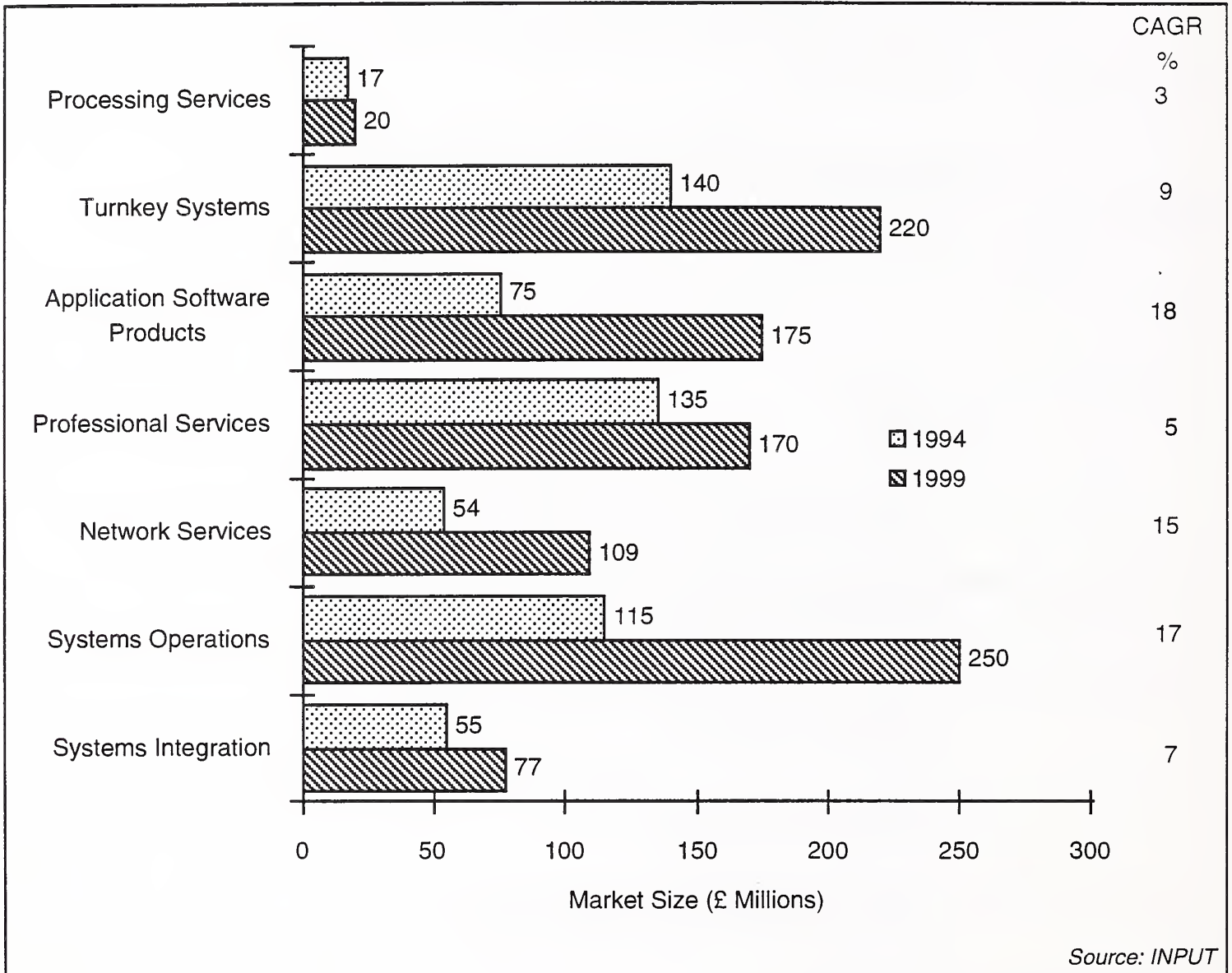
Exhibit II-9

Transportation Sectors, Software and Services Market —
United Kingdom, 1994-1999

Sector	1994	1999	CAGR %
Processing Services	105	105	0
Turnkey Systems	65	90	7
Application Software Products	21	43	15
Professional Services	90	90	0
Network Services	80	235	24
Systems Operations	35	85	19
Systems Integration	55	129	19

☐ 1994
◩ 1999

Market Size (£ Millions)

Source: INPUT
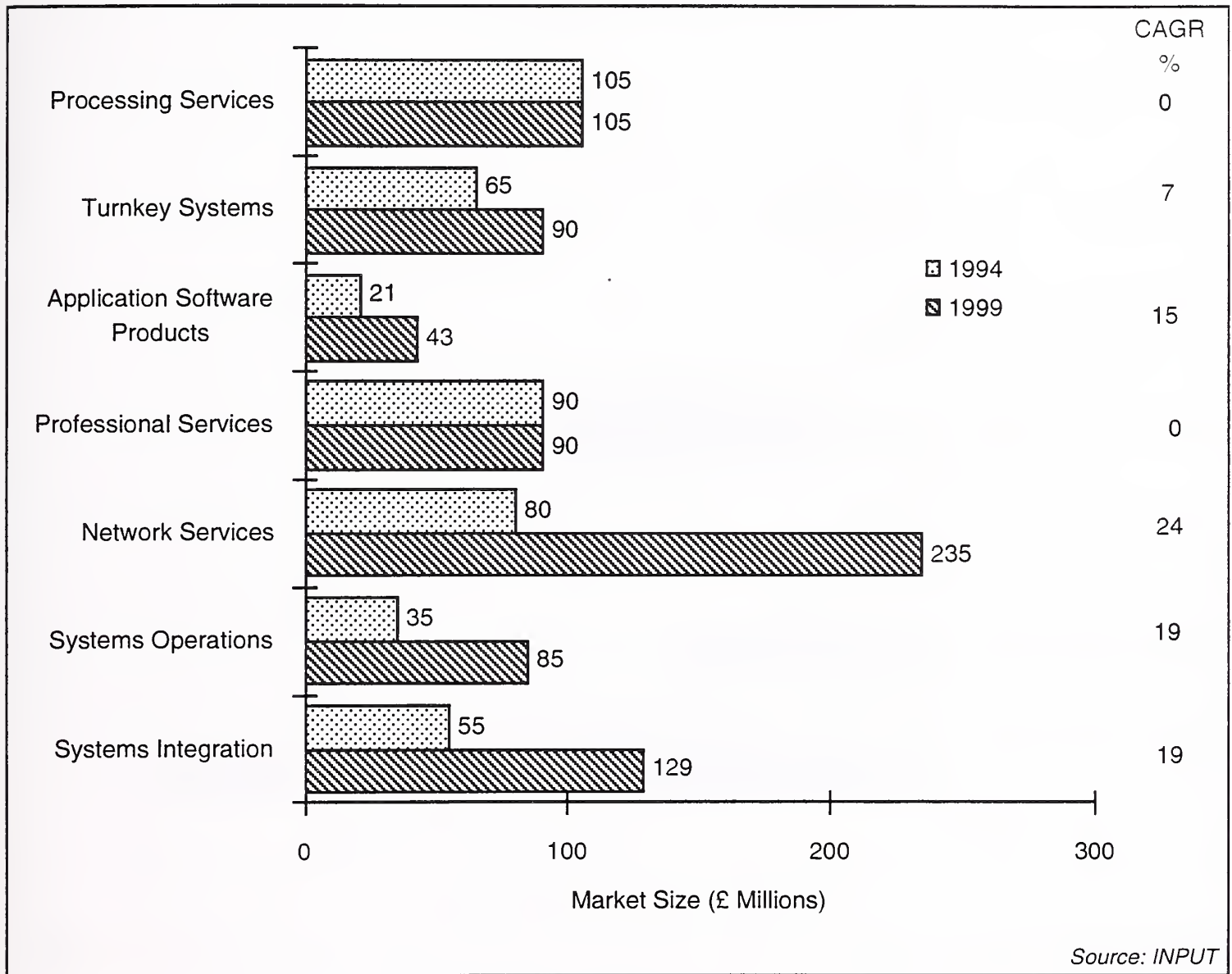
Exhibit II-10

Utilities Sectors, Software and Services Market — United Kingdom, 1994-1999

CAGR
%

Sector	1994	1999	CAGR %
Processing Services	6	11	13
Turnkey Systems	27	39	8
Application Software Products	10	24	19
Professional Services	95	150	10
Network Services	12	30	20
Systems Operations	41	64	9
Systems Integration	83	195	19

☐ 1994
▨ 1999

Market Size (£ Millions)

Source: INPUT
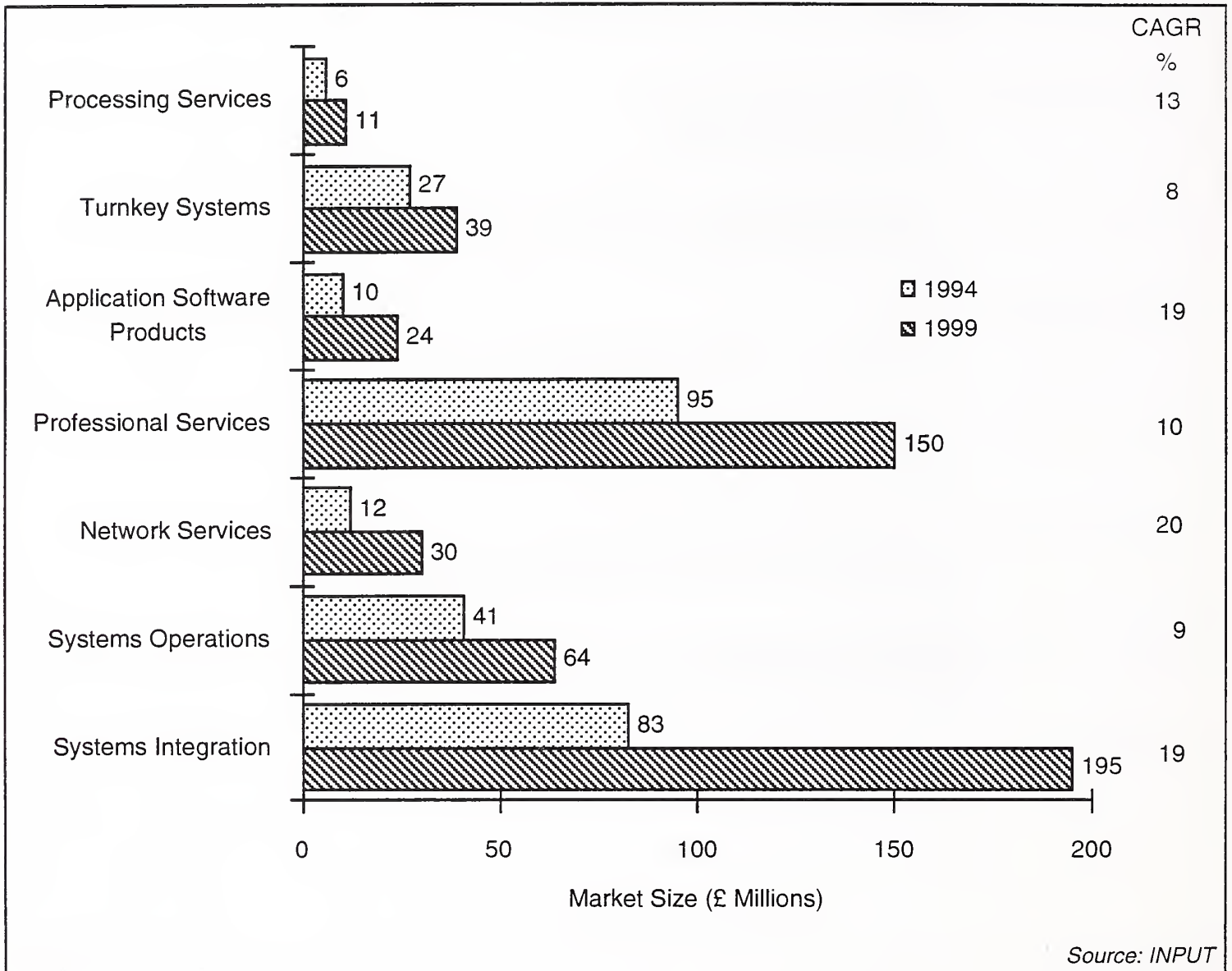
Exhibit II-11

Telecommunications Sectors, Software and Services Market —
United Kingdom, 1994-1999

CAGR
%

Processing Services — 2, 2 — 0

Turnkey Systems — 15, 15 — 0

□ 1994
▨ 1999

Application Software Products — 6, 11 — 13

Professional Services — 66, 90 — 6

Network Services — 14, 41 — 24

Systems Operations — 5, 5 — 0

Systems Integration — 36, 70 — 14

Market Size (£ Millions)

Source: INPUT
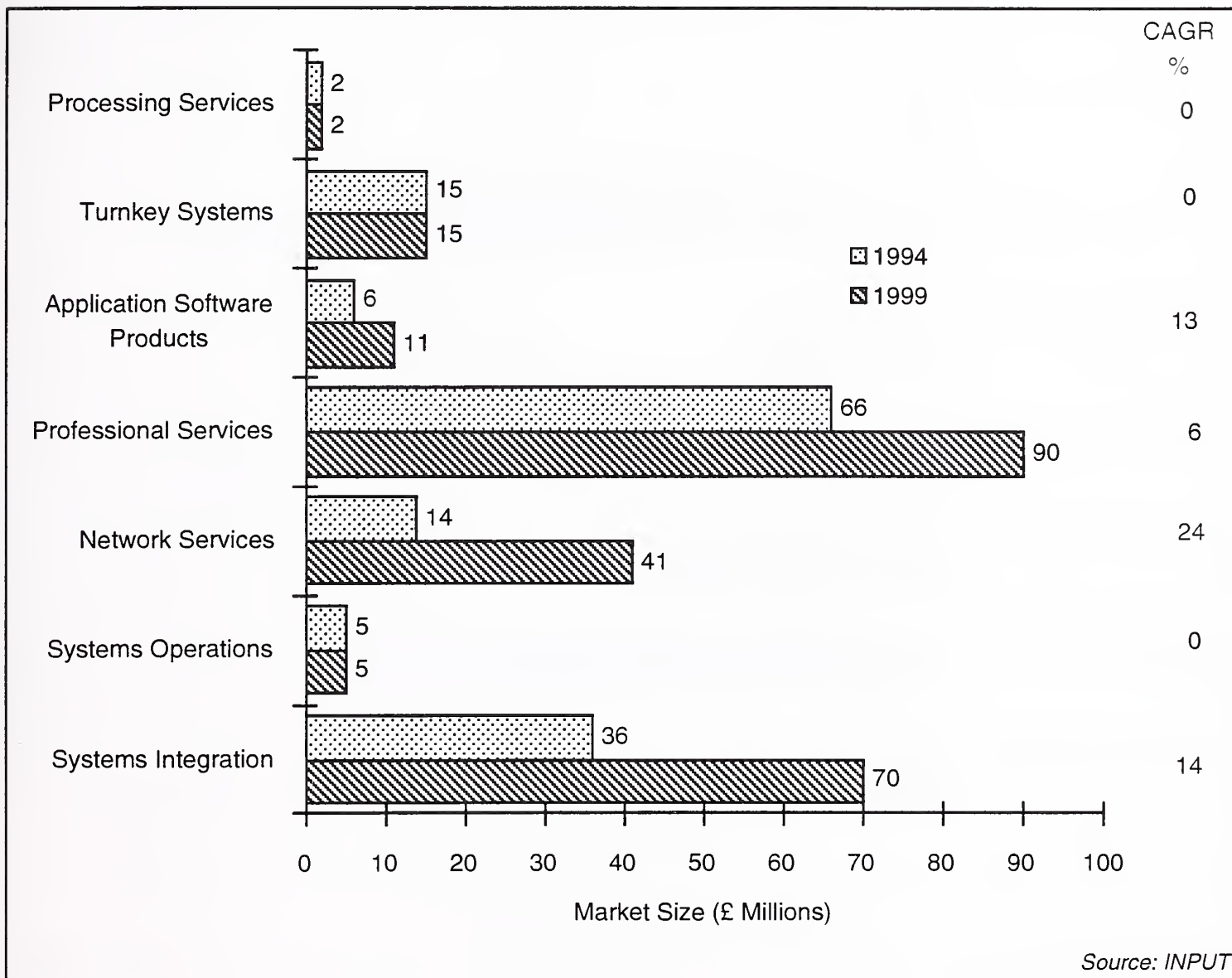
Exhibit II-12

Retail Distribution Sectors,
Software and Services Market — United Kingdom, 1994-1999

CAGR
%

Sector	1994	1999	CAGR %
Processing Services	8	8	0
Turnkey Systems	101	137	6
Application Software Products	25	37	8
Professional Services	105	85	-4
Network Services	32	55	11
Systems Operations	34	81	19
Systems Integration	21	42	15

☐ 1994
▨ 1999

Market Size (£ Millions)

0   50   100   150

Source: INPUT
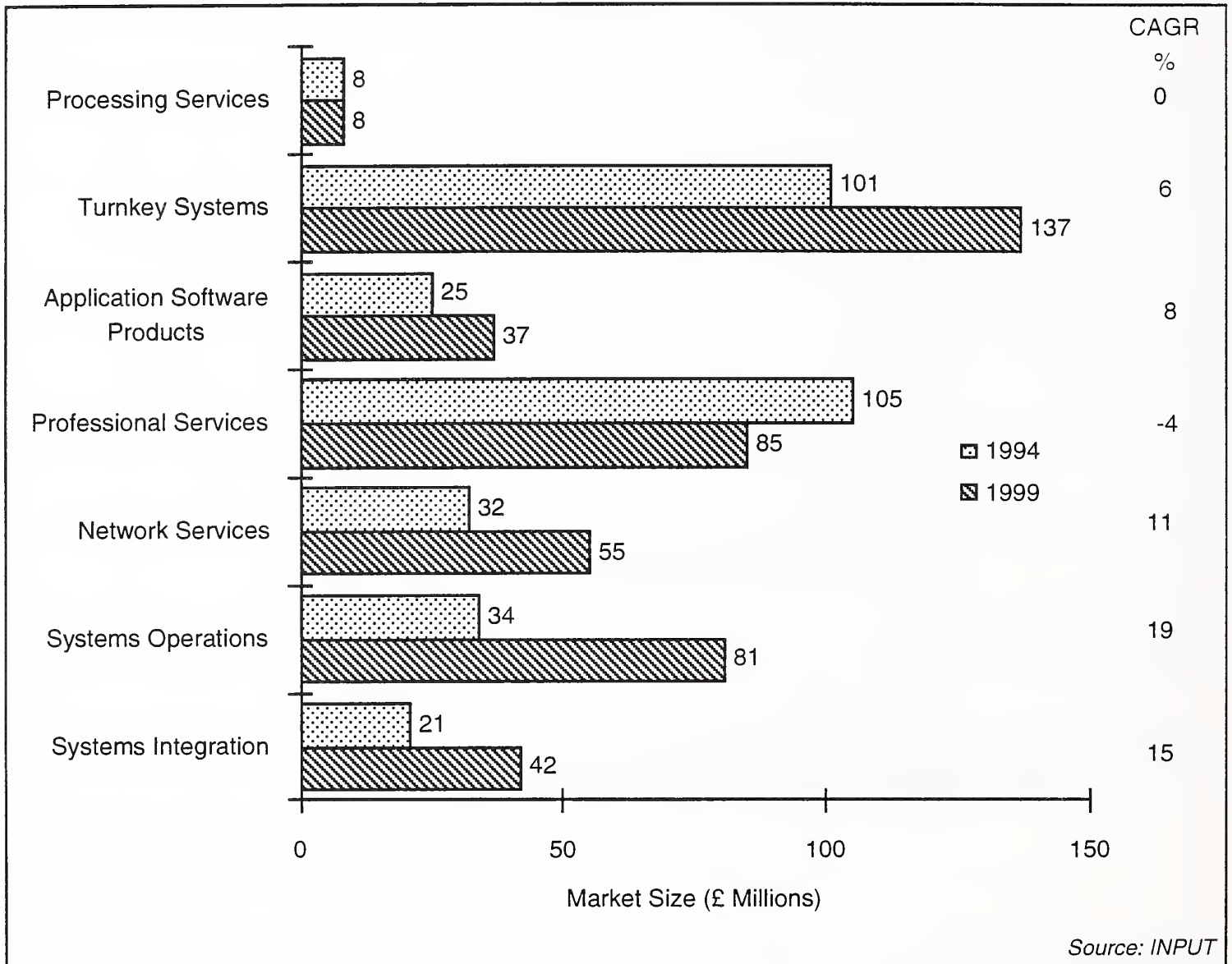
Exhibit II-13

Wholesale Distribution Sectors,
Software and Services Market — United Kingdom, 1994-1999

CAGR
%

Sector	1994	1999	CAGR %
Processing Services	6	6	0
Turnkey Systems	52	41	-5
Application Software Products	19	29	9
Professional Services	68	41	-10
Network Services	17	18	1
Systems Operations	16	34	16
Systems Integration	5	5	0

☐ 1994
▨ 1999

Market Size (£ Millions)

Source: INPUT
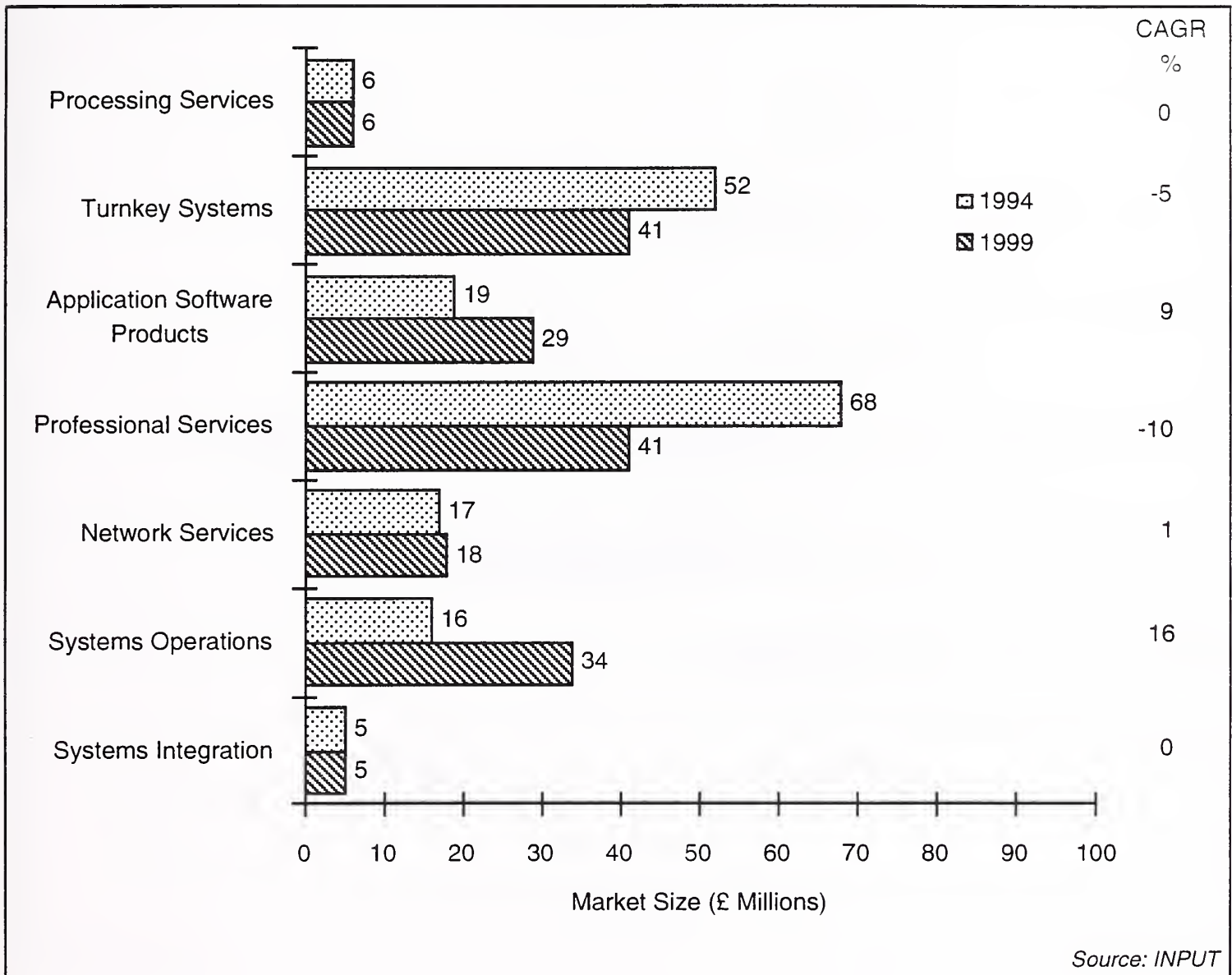
Exhibit II-14

Banking & Finance Sector, Software and Services Market — United Kingdom, 1994-1999

CAGR
%

Category	Value	CAGR %
Processing Services	140 (1994), 175 (1999)	5
Turnkey Systems	180 (1994), 280 (1999)	9
Application Software Products	110 (1994), 225 (1999)	15
Professional Services	640 (1994), 720 (1999)	2
Network Services	260 (1994), 610 (1999)	19
Systems Operations	100 (1994), 220 (1999)	17
Systems Integration	130 (1994), 190 (1999)	8

☐ 1994
▨ 1999

0   100   200   300   400   500   600   700   800

Market Size (£ Millions)

Source: INPUT

MAMI
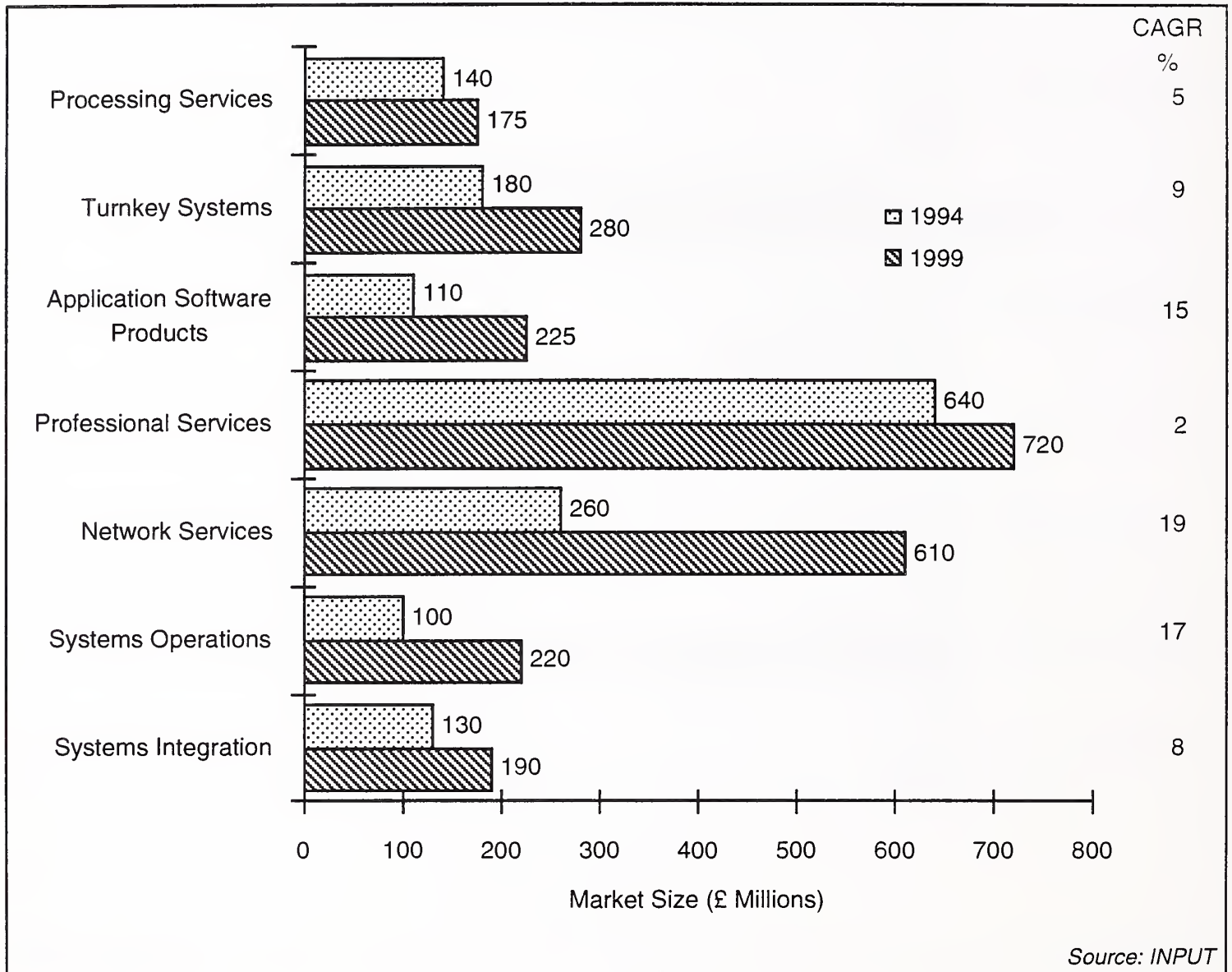
Exhibit II-15

Insurance Sectors,
Software and Services Market — United Kingdom, 1994-1999

Sector	1994	1999	CAGR %
Processing Services	22	28	5
Turnkey Systems	81	122	9
Application Software Products	43	105	20
Professional Services	210	290	7
Network Services	35	72	16
Systems Operations	28	62	17
Systems Integration	44	57	5

Legend: □ 1994   ▨ 1999

Market Size (£ Millions)

Source: INPUT
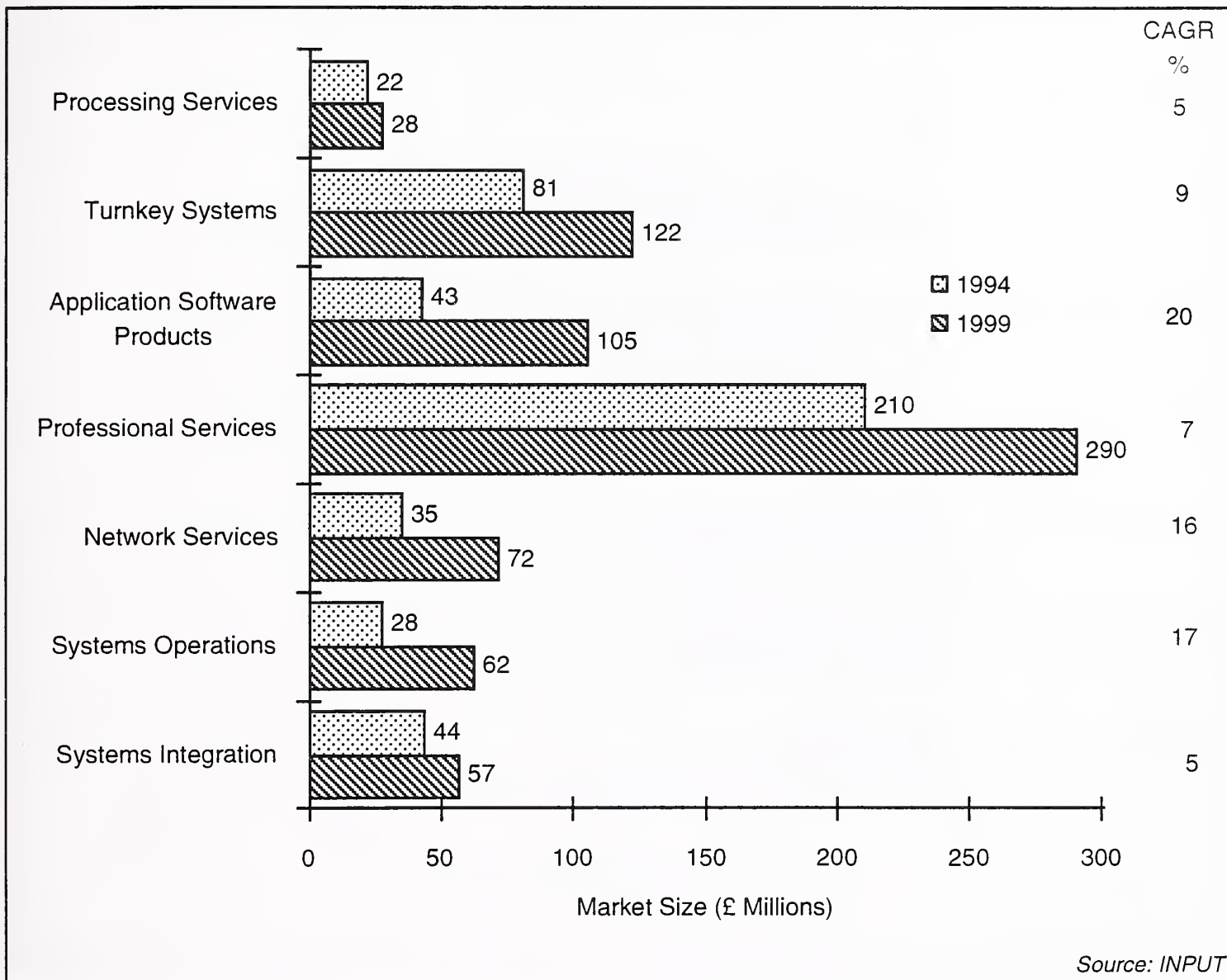
Exhibit II-16

Healthcare Sectors,
Software and Services Market — United Kingdom 1994-1999

Sector	Market Size (£ Millions)	CAGR %
Processing Services	12 / 17	7
Turnkey Systems	102 / 164	10
Application Software Products	32 / 59	13
Professional Services	81 / 87	1
Network Services	33 / 69	16
Systems Operations	60 / 62	1
Systems Integration	32 / 42	6

☐ 1994
▨ 1999

Market Size (£ Millions)

0   50   100   150   200

Source: INPUT
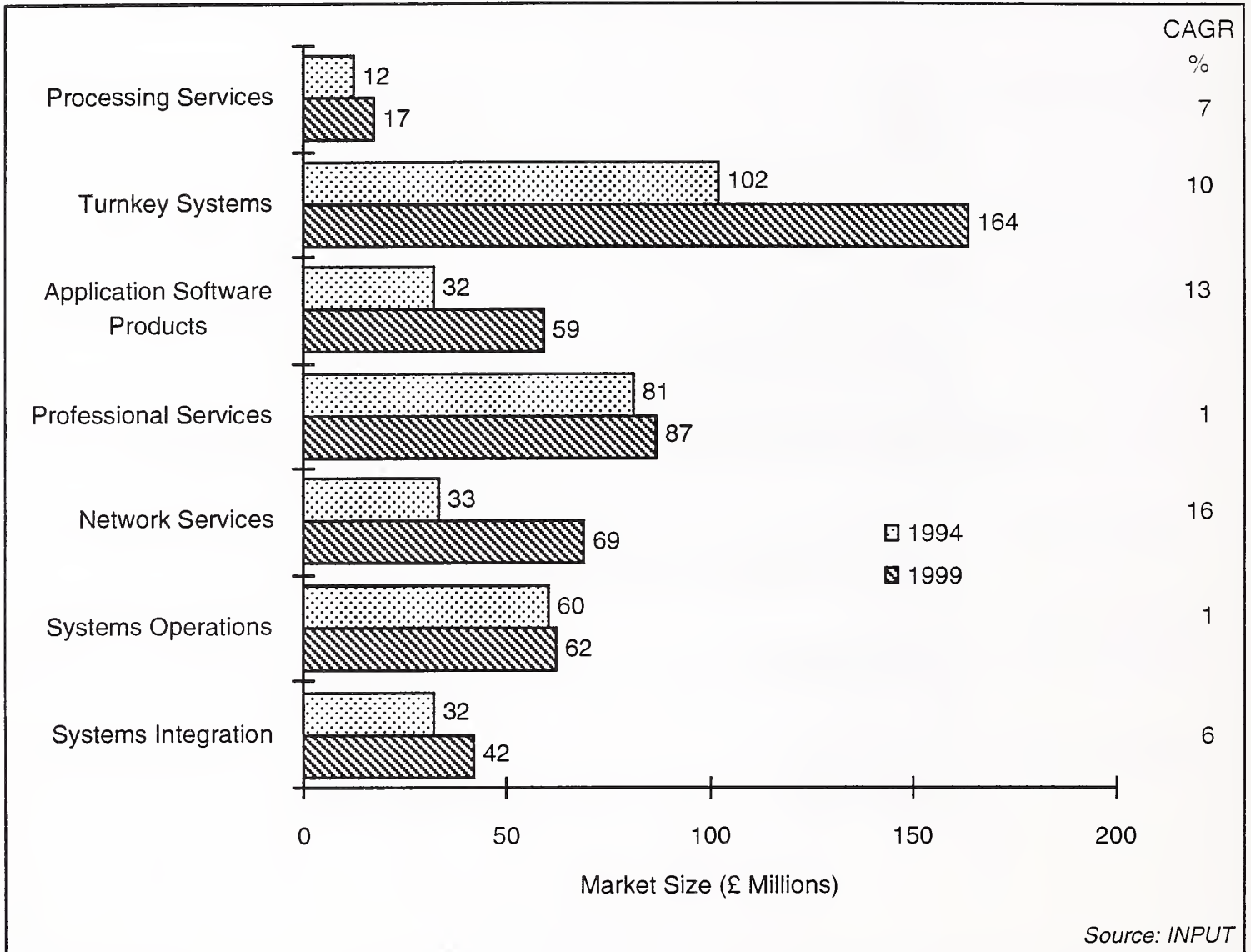
Exhibit II-17

Education Sectors,
Software and Services Market — United Kingdom, 1994-1999

CAGR
%

Sector	1994	1999	CAGR %
Processing Services	1	1	0
Turnkey Systems	22	17	-5
Application Software Products	25	31	4
Professional Services	26	21	-4
Network Services	4	4	0
Systems Operations	1	1	0
Systems Integration	1	1	0

□ 1994
▧ 1999

Market Size (£ Millions)

0   10   20   30   40   50

Source: INPUT
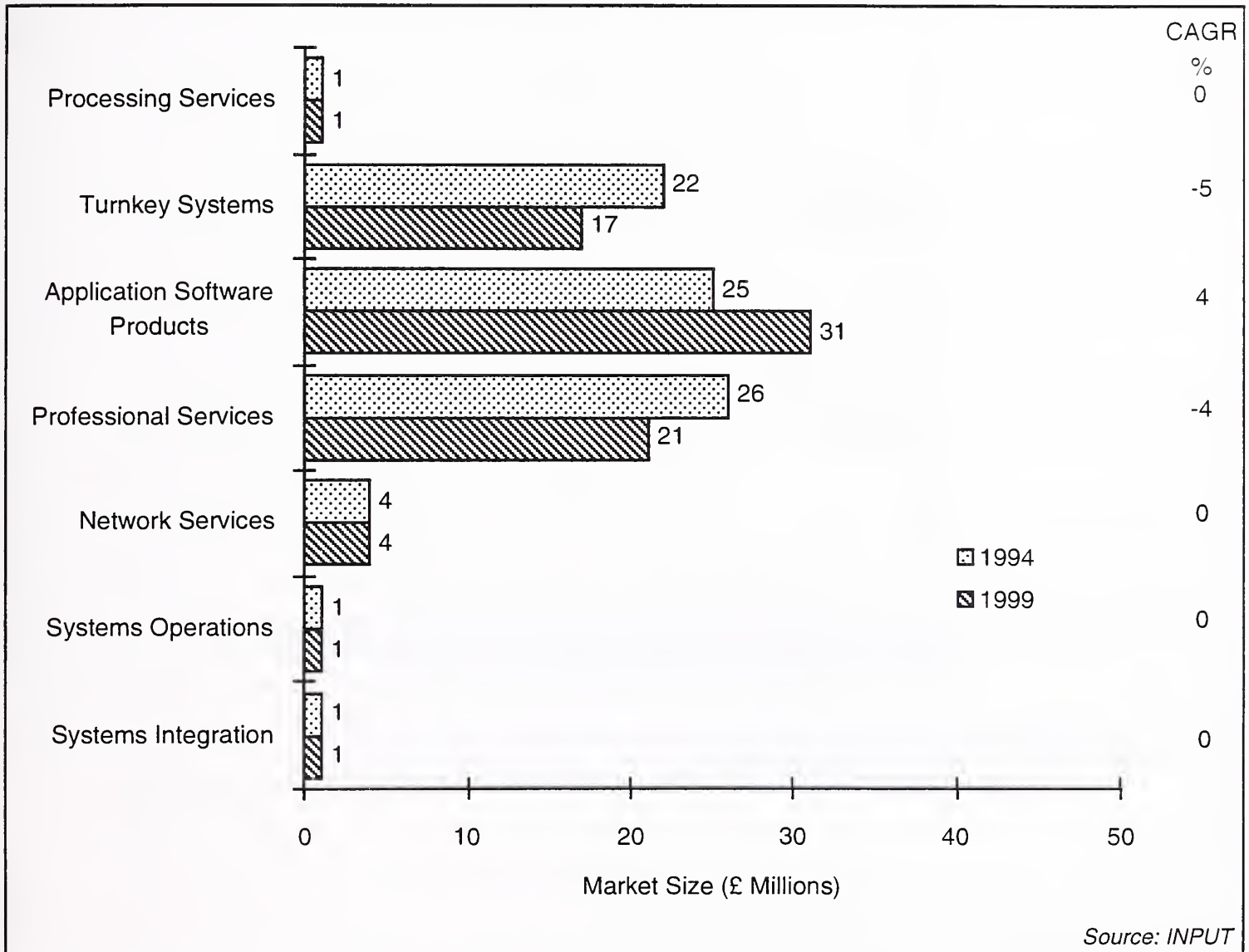
Exhibit II-18

Local Government Sectors,
Software and Services Market — United Kingdom, 1994-1999

Sector	CAGR %
Processing Services	0
	6 (1994)
	6 (1999)
Turnkey Systems	4
	57 (1994)
	69 (1999)
Application Software Products	14
	20 (1994)
	38 (1999)
Professional Services	-6
	90 (1994)
	65 (1999)
Network Services	0
	12 (1994)
	12 (1999)
Systems Operations	26
	129 (1994)
	404 (1999)
Systems Integration	10
	81 (1994)
	128 (1999)

□ 1994
◪ 1999

Market Size (£ Millions)

0   100   200   300   400   500

Source: INPUT
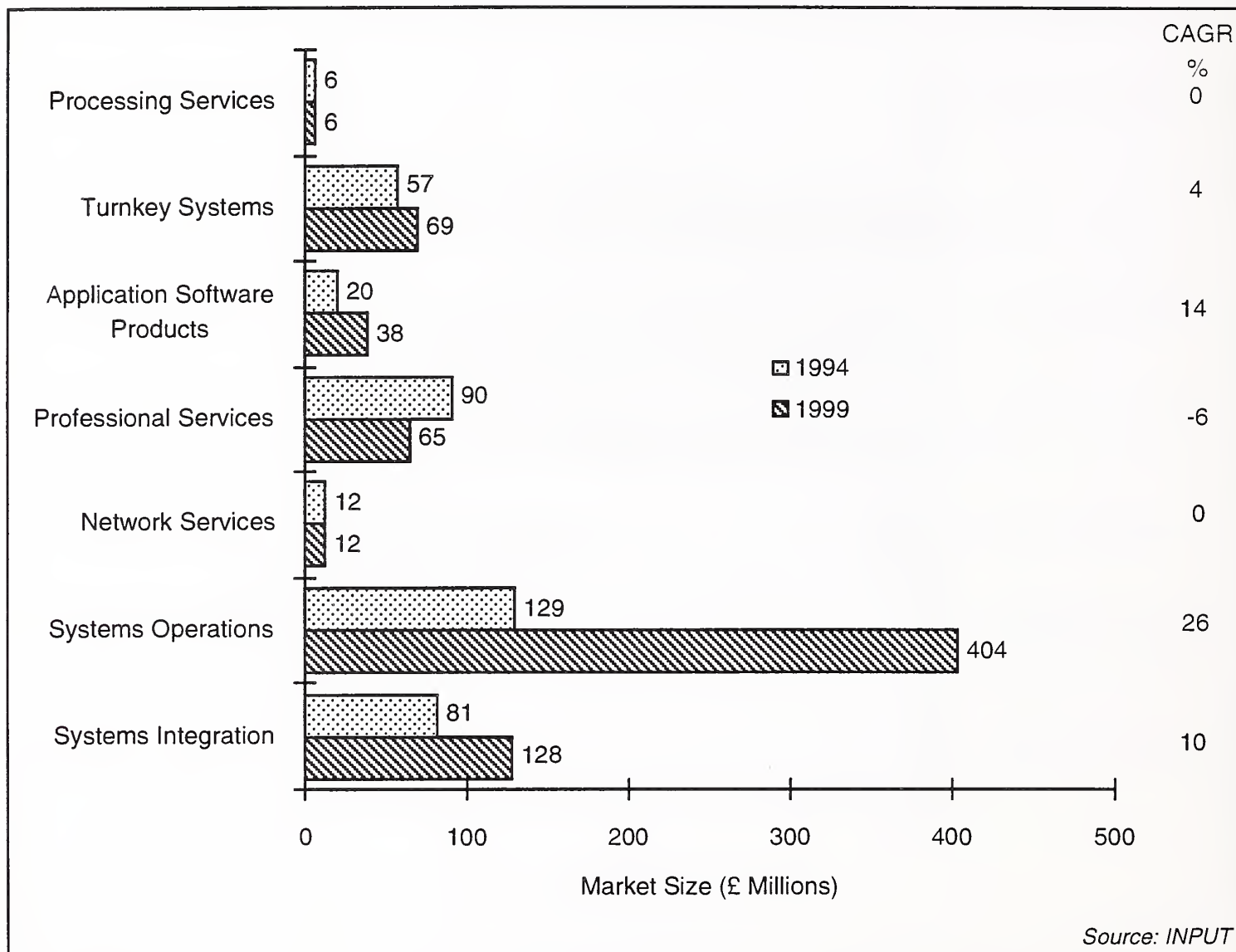
Exhibit II-19

Central Government Sectors, Software and Services Market — United Kingdom, 1994-1999

Market Size (£ Millions)

Source: INPUT
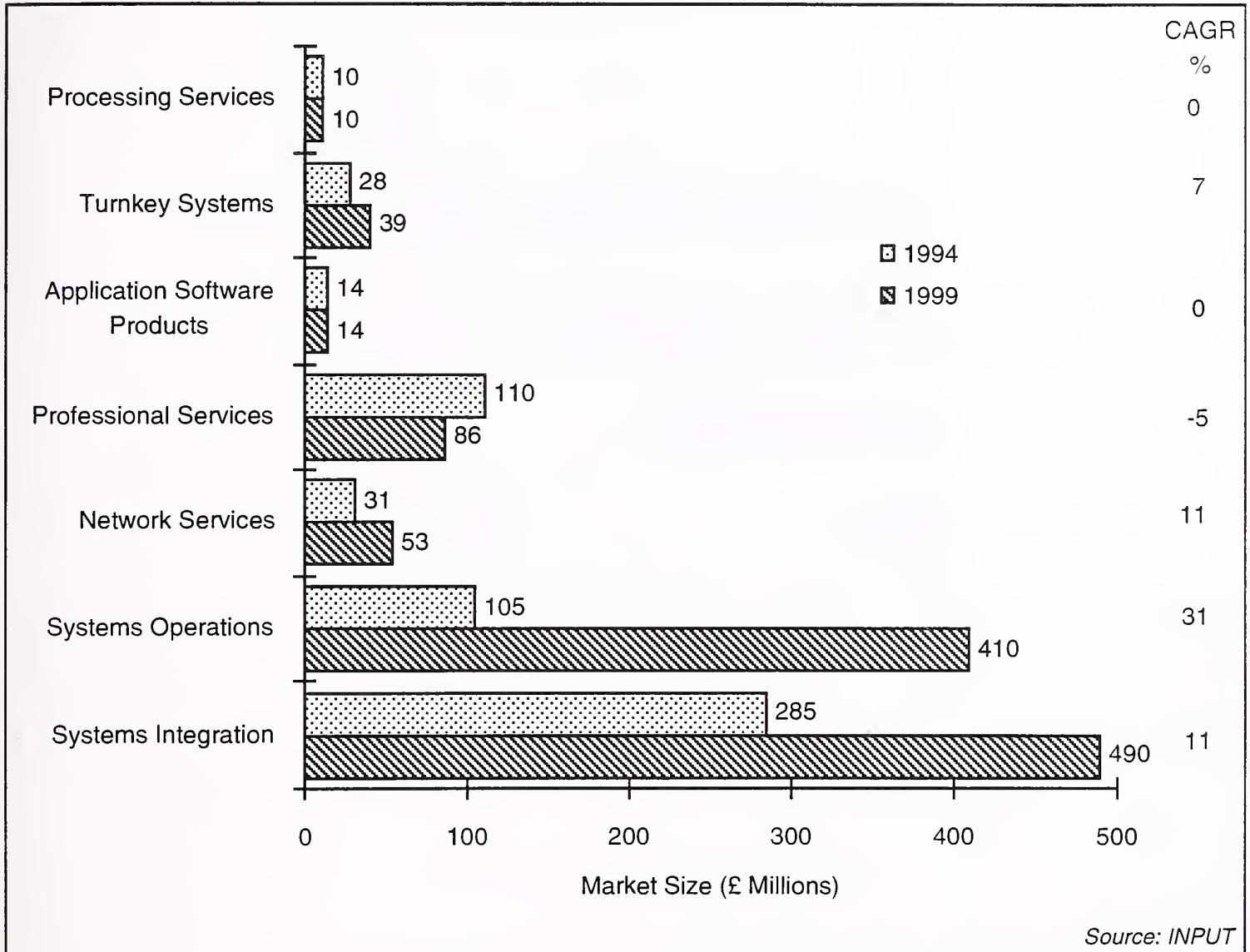
Exhibit II-20

Business Services Sectors, Software and Services Market — United Kingdom, 1994-1999

CAGR
%

Sector	1994	1999	CAGR %
Processing Services	3	3	0
Turnkey Systems	102	205	15
Application Software Products	25	40	10
Professional Services	87	88	0
Network Services	13	29	17
Systems Operations	7	9	5
Systems Integration	5	5	0

□ 1994
⊠ 1999

Market Size (£ Millions)

0   50   100   150   200   250

Source: INPUT

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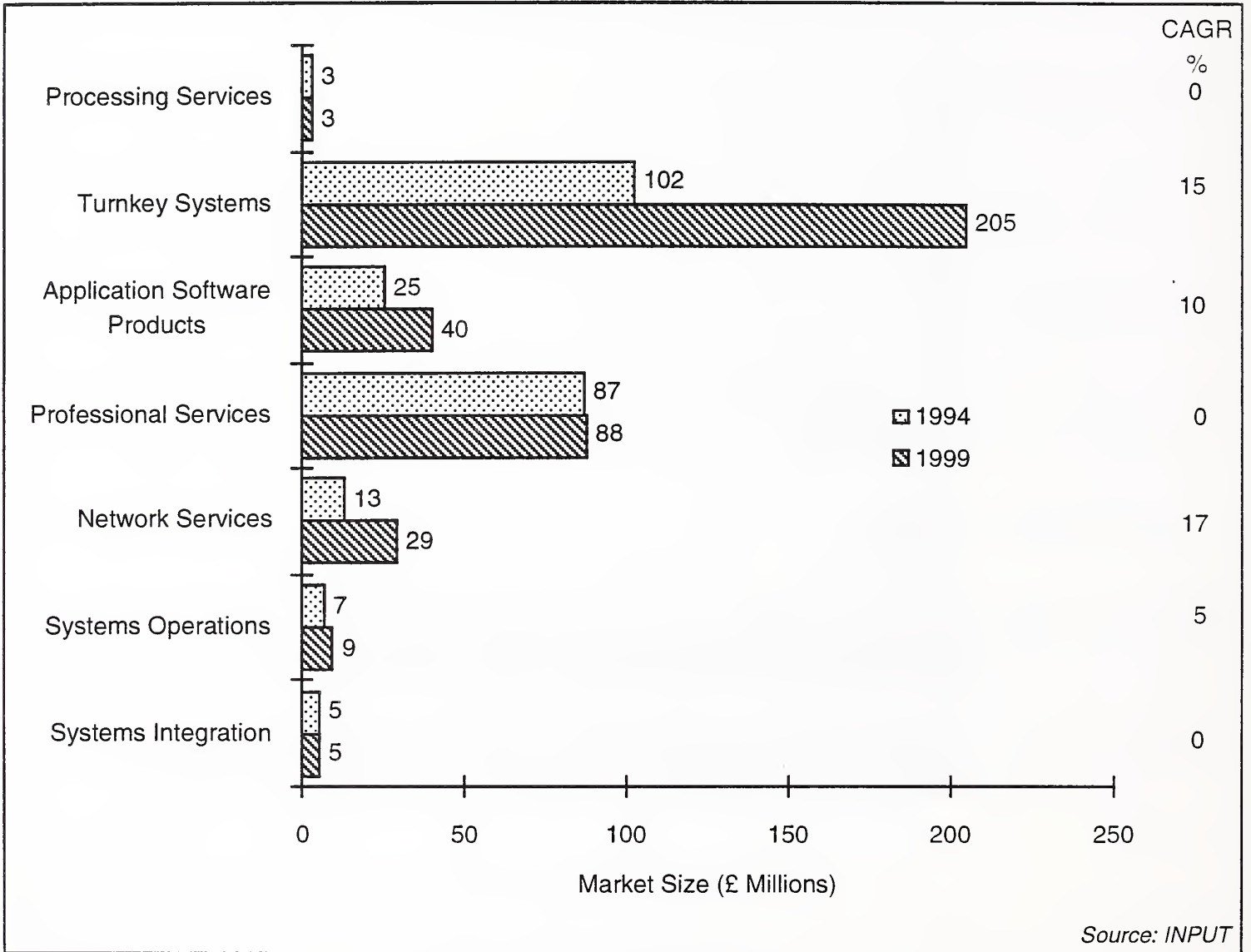
Exhibit II-21

Other Industry Sectors, Software and Services Market —
United Kingdom, 1994-1999

Horizontal bar chart comparing 1994 and 1999 market sizes (£ Millions) with CAGR %:

Sector	1994	1999	CAGR %
Processing Services	5	5	0
Turnkey Systems	10	9	-2
Application Software Products	37	46	4
Professional Services	3	3	0
Network Services	10	10	0
Systems Operations	5	10	15
Systems Integration	1	1	0

Legend: ▣ 1994   ▧ 1999

Market Size (£ Millions)

Source: INPUT

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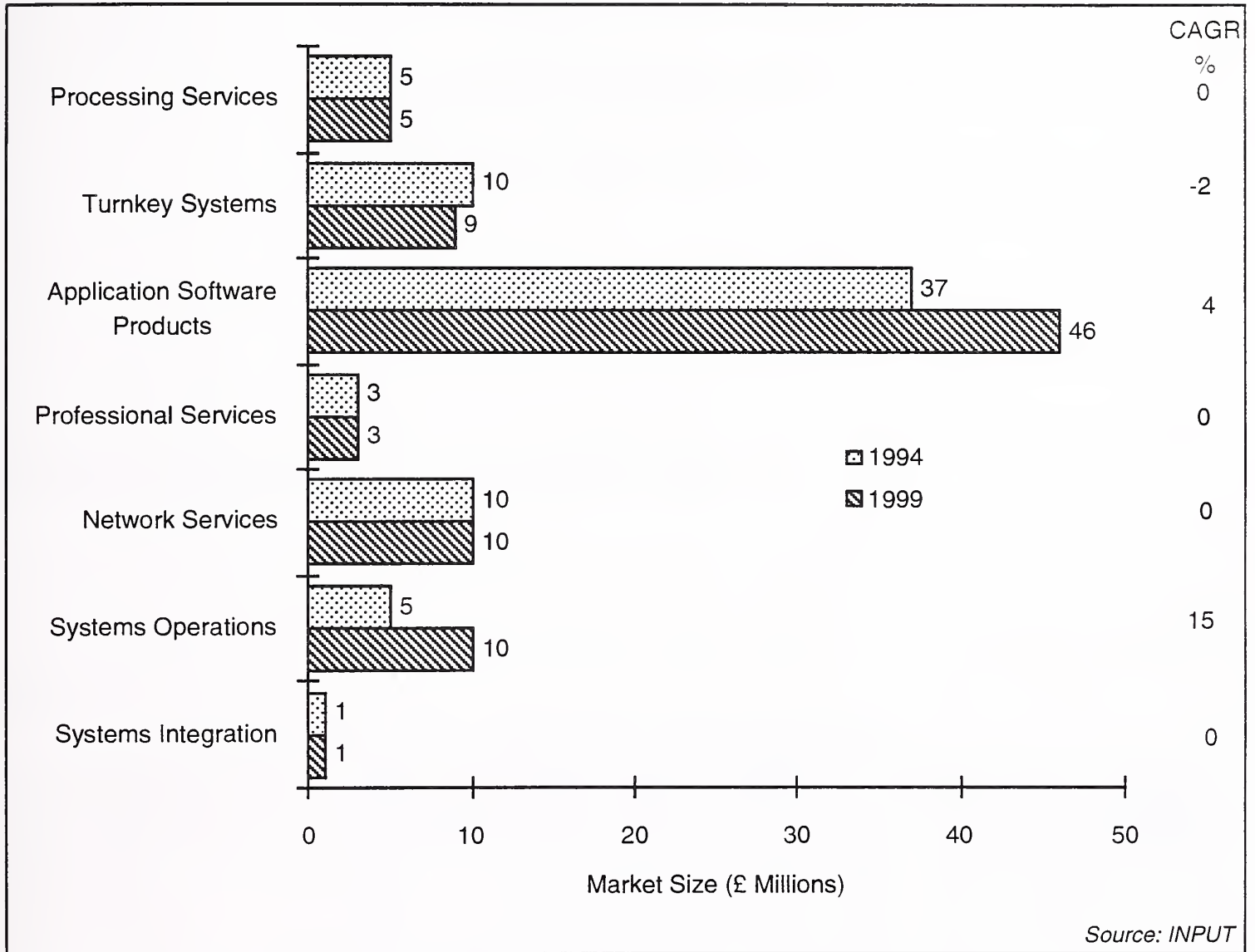
Information Services Industry Forecast Database, 1994-1999 United Kingdom

A

Forecast Database in Local Currency (PS Millions)

Exhibit A-1

Top Level IT Expenditure, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	4,500	-4	4,300	4,150	4,050	3,900	3,800	3,650	-3
Equipment Services	2,390	-1	2,370	2,360	2,340	2,270	2,240	2,210	-1
Software Products	2,080	8	2,240	2,420	2,620	2,850	3,100	3,370	9
Other Information Services	4,960	10	5,480	5,980	6,520	7,130	7,680	8,360	9
Data Communications	1,560	7	1,670	1,750	1,850	1,940	2,000	2,080	4
Facilities/ Administration	2,760	-5	2,620	2,500	2,420	2,380	2,320	2,270	-3
In-house Staff	6,700	-6	6,300	5,900	5,550	5,100	4,800	4,550	-6
IT Budget Total	22,500	2	23,000	23,000	23,500	23,500	24,000	24,500	1

Exhibit A-2

Information Services Market
Forecast by Delivery Mode and Submode
United Kingdom, 1994-1999

Delivery Modes	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR(%)
Software and Services Total (ex. Equipment Services)	7,900	9	8,600	9,400	10,200	11,000	12,000	12,900	8
Professional Services	1,930	2	1,960	2,010	2,040	2,070	2,080	2,100	1
- IS Consulting	410	10	450	500	545	600	660	725	10
- Education & Training	195	3	200	205	205	210	215	220	2
- Custom Software	1,290	-2	1,270	1,250	1,220	1,170	1,080	1,000	-5
- Application Management	35	29	45	60	75	95	125	160	29
Systems Integration	775	13	875	980	1,090	1,205	1,335	1,480	11
- Equipment	200	10	220	240	260	285	310	325	8
- Application Software	130	27	165	205	255	320	395	480	24
- System Software	60	8	65	70	75	80	85	90	7
- Professional Services	370	11	410	445	480	495	515	555	6
- Other	15	13	17	19	22	25	28	31	13
Systems Operations	590	34	790	975	1,190	1,410	1,635	1,880	19
- Platform Operations	150	43	215	265	300	325	340	360	11
- Application Operations	375	31	490	600	750	910	1,080	1,260	21
- Desktop Services	65	31	85	110	140	175	215	260	25
Processing Services	530	8	570	590	620	640	680	710	4
- Transaction Processing	410	5	430	430	440	450	460	470	2
- Utility Processing	15	0	15	15	15	15	15	15	0
- Other Processing	110	14	125	140	160	180	205	230	13
Network Services	870	16	1,010	1,170	1,340	1,540	1,760	1,990	15
- Electronic Info Svcs	580	12	650	730	810	890	980	1,050	10
- Network Applications	215	26	270	340	420	520	630	770	23
- Network Management	75	20	90	100	110	130	150	170	14
System Software Product	1,190	5	1,250	1,300	1,350	1,400	1,450	1,500	4
- Mainframe	525	-5	500	470	455	430	410	375	-6
- Minicomputer	365	10	400	435	455	480	500	525	6
- Workstation /PC	300	17	350	395	440	490	540	600	11
Application Software Product	730	12	820	910	1,020	1,150	1,270	1,400	11
- Mainframe	65	-5	62	58	55	52	50	48	-5
- Minicomputer	205	7	220	235	250	270	290	315	7
- Workstation /PC	460	17	538	617	715	828	930	1,037	14
Turnkey Systems	1,290	5	1,360	1,420	1,510	1,630	1,740	1,870	7
- Equipment	650	5	680	710	750	800	840	880	5
- Application Software	210	10	230	240	250	280	300	340	8
- System Software	110	5	115	125	135	145	155	165	7
- Professional Services	320	6	340	360	380	420	450	500	8
Equipment Services	2,390	-1	2,370	2,360	2,340	2,270	2,240	2,210	-1
- Equipment Maintenance	1,540	-5	1,460	1,400	1,330	1,200	1,120	1,030	-7
- Environmental Services	850	7	910	960	1,010	1,070	1,120	1,180	5
Grand Total Information Service Market	10,300	7	11,000	11,700	12,500	13,300	14,200	15,100	7

PS Millions

B

Sector Summary in Local Currency

Exhibit A-3   A-3

Information Services Market by Sector Summary, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					PS Millions				
Processing Services	360	6	380	390	400	405	415	425	2
Turnkey Systems	1,100	5	1,160	1,220	1,300	1,400	1,500	1,610	7
Application Software Products	485	13	550	620	700	790	885	985	12
Professional Services	1,930	2	1,960	2,010	2,040	2,070	2,080	2,100	1
Network Services	575	18	680	800	935	1,095	1,270	1,460	17
Systems Operations	590	34	790	975	1,190	1,410	1,635	1,880	19
Systems Integration	775	13	875	980	1,090	1,205	1,335	1,480	11
Industry Sectors Total	5,800	10	6,400	7,000	7,650	8,400	9,100	9,950	9
Transaction Processing	45	0	45	40	40	40	40	40	-2
Turnkey Systems	190	3	195	200	205	225	240	255	6
Application Software Products	245	8	265	290	320	355	385	415	9
Cross-Industry Sectors Total	480	5	505	530	565	620	665	710	7
Equipment Services	2,390	-1	2,370	2,360	2,340	2,270	2,240	2,210	-1
System Software Products	1,190	5	1,250	1,300	1,350	1,400	1,450	1,500	4
Utility and Other Processing	125	12	140	155	175	195	220	245	12
Other Electronic Info Services	290	12	325	365	405	445	490	525	10
Generic Sectors Total	3,995	2	4,085	4,180	4,270	4,310	4,400	4,480	2
Total Information Services	10,300	7	11,000	11,700	12,500	13,300	14,200	15,100	7

C

Industry Sectors in Local Currency

Exhibit A-4

Information Services Market by Industry Sectors, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Discrete Manufacturing	710	-4	680	680	675	700	725	750	2
Process Manufacturing	510	16	590	635	700	800	905	1,020	12
Transportation	385	17	450	500	555	620	690	775	11
Utilities	240	15	275	315	370	420	465	515	13
Telecommunications	125	16	145	165	180	195	215	235	10
Retail Distribution	300	8	325	355	375	400	420	445	6
Wholesale Distribution	185	0	185	180	180	175	175	175	-1
Banking & Finance	1,380	13	1,560	1,750	1,950	2,115	2,260	2,420	9
Insurance	425	9	465	510	575	630	680	735	10
Healthcare	305	15	350	380	410	440	470	500	7
Education	80	0	80	80	80	80	75	75	-1
Local Government	350	13	395	445	500	565	640	720	13
Central Government	510	15	585	660	745	845	965	1,100	13
Business Services	220	9	240	265	290	315	345	380	10
Other Industries	75	-7	70	70	75	80	80	85	4
Industry Sectors Total	5,800	10	6,400	7,000	7,650	8,400	9,100	9,950	9

Exhibit A-5

Industry Sectors, Discrete Manufacturing, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	450	-20	360	310	270	250	230	210	-10
Equipment Services	320	-16	270	240	210	190	180	170	-9
Software Products	260	-8	240	240	230	230	230	240	0
Other Information Services	550	-2	540	530	530	550	580	600	2
Data Communications	100	0	100	100	100	105	110	115	3
Facilities/ Administration	250	-20	200	170	150	140	130	120	-10
In-house Staff	900	-11	800	750	700	700	700	700	-3
IT Budget Total	2,830	-11	2,510	2,340	2,190	2,165	2,160	2,155	-3
Processing Services	40	-13	35	32	29	28	27	26	-6
Turnkey Systems	200	-10	180	170	160	160	160	160	-2
Application Software Products	90	0	90	95	95	100	105	110	4
Professional Services	180	-14	155	140	125	120	115	110	-7
Network Services	71	3	73	79	84	93	103	113	9
Systems Operations	90	22	110	125	140	155	170	185	11
Systems Integration	40	-3	39	40	40	42	45	48	4
Industry Sectors Total	710	-4	680	680	675	700	725	750	2

Exhibit A-6

Industry Sectors, Process Manufacturing, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					PS Millions				
Equipment Sales	330	-3	320	295	280	275	270	265	-4
Equipment Services	165	0	165	155	150	150	150	150	-2
Software Products	160	16	185	195	215	245	280	325	12
Other Information Services	385	14	440	475	515	590	660	730	11
Data Communications	130	4	135	130	130	135	140	145	1
Facilities/Administration	190	-5	180	165	155	155	155	155	-3
In-house Staff	500	-6	470	410	370	340	320	300	-9
IT Budget Total	1,860	2	1,895	1,825	1,815	1,890	1,975	2,070	2
Processing Services	16	6	17	17	17	18	19	20	3
Turnkey Systems	125	12	140	145	155	175	195	220	9
Application Software Products	60	25	75	85	100	120	145	175	18
Professional Services	130	4	135	135	140	150	160	170	5
Network Services	46	17	54	60	68	80	94	109	15
Systems Operations	85	35	115	135	160	190	220	250	17
Systems Integration	50	10	55	57	60	65	71	77	7
Industry Sectors Total	510	16	590	635	700	800	905	1,020	12

Exhibit A-7

Industry Sectors, Transportation, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					PS Millions				
Equipment Sales	190	-3	185	170	160	150	140	130	-7
Equipment Services	65	5	68	68	67	65	64	63	-2
Software Products	66	15	76	87	97	110	125	143	13
Other Information Services	320	17	375	415	455	505	560	625	11
Data Communications	41	34	55	69	86	108	135	169	25
Facilities/Administration	95	0	95	90	85	80	80	80	-3
In-house Staff	185	-5	175	155	140	120	105	95	-12
IT Budget Total	962	7	1,029	1,054	1,090	1,138	1,209	1,305	5
Processing Services	95	11	105	105	105	105	105	105	0
Turnkey Systems	60	8	65	70	75	80	85	90	7
Application Software Products	17	24	21	25	29	33	38	43	15
Professional Services	85	6	90	90	90	90	90	90	0
Network Services	60	33	80	100	125	155	190	235	24
Systems Operations	25	40	35	45	55	65	75	85	19
Systems Integration	44	25	55	66	78	92	109	129	19
Industry Sectors Total	385	17	450	500	555	620	690	775	11

Exhibit A-8

Industry Sectors, Utilities, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	105	5	110	115	125	135	140	145	6
Equipment Services	65	8	70	77	85	91	96	102	8
Software Products	54	19	64	76	92	111	129	151	19
Other Information Services	200	13	225	260	305	340	370	410	13
Data Communications	33	12	37	41	47	52	56	60	10
Facilities/ Administration	95	0	95	100	105	110	115	120	5
In-house Staff	200	0	200	200	200	200	200	200	0
IT Budget Total	752	7	801	869	959	1,039	1,106	1,188	8
Processing Services	5	20	6	7	8	9	10	11	13
Turnkey Systems	25	8	27	29	32	35	37	39	8
Application Software Products	8	25	10	12	15	18	21	24	19
Professional Services	90	6	95	105	120	130	140	150	10
Network Services	10	20	12	15	18	22	26	30	20
Systems Operations	33	24	41	48	56	61	63	64	9
Systems Integration	70	19	83	100	122	145	168	195	19
Industry Sectors Total	240	15	275	315	370	420	465	515	13

Exhibit A-9

Industry Sectors, Telecommunications, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	110	14	125	140	155	165	180	195	9
Equipment Services	55	7	59	64	67	68	70	72	4
Software Products	35	17	41	47	52	58	64	71	12
Other Information Services	112	16	130	149	164	178	197	216	11
Data Communications	35	14	40	45	50	54	58	63	10
Facilities/ Administration	54	9	59	64	69	75	81	87	8
In-house Staff	150	3	155	160	160	155	155	155	0
IT Budget Total	551	11	609	669	717	753	805	859	7
Processing Services	2	0	2	2	2	2	2	2	0
Turnkey Systems	15	0	15	15	15	15	15	15	0
Application Software Products	5	20	6	7	8	9	10	11	13
Professional Services	60	10	66	73	78	82	86	90	6
Network Services	11	27	14	18	23	28	34	41	24
Systems Operations	4	25	5	5	5	5	5	5	0
Systems Integration	30	20	36	43	49	55	62	70	14
Industry Sectors Total	125	16	145	165	180	195	215	235	10

Exhibit A-10

Industry Sectors, Retail Distribution, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	355	-3	345	335	325	315	300	285	-4
Equipment Services	175	0	175	175	170	165	160	155	-2
Software Products	110	9	120	125	135	140	145	155	5
Other Information Services	255	8	275	305	315	340	360	375	6
Data Communications	55	5	58	60	62	64	65	66	3
Facilities/ Administration	270	-6	255	240	230	225	215	205	-4
In-house Staff	370	-5	350	330	310	280	260	240	-7
IT Budget Total	1,590	-1	1,578	1,570	1,547	1,529	1,505	1,481	-1
Processing Services	8	0	8	8	8	8	8	8	0
Turnkey Systems	94	7	101	108	116	124	130	137	6
Application Software Products	22	14	25	28	31	33	35	37	8
Professional Services	105	0	105	105	100	95	90	85	-4
Network Services	28	14	32	36	40	45	50	55	11
Systems Operations	25	36	34	43	53	63	72	81	19
Systems Integration	18	17	21	25	29	33	37	42	15
Industry Sectors Total	300	8	325	355	375	400	420	445	6

Exhibit A-11

Industry Sectors, Wholesale Distribution, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	195	-8	180	165	150	140	130	120	-8
Equipment Services	115	-4	110	105	100	90	85	80	-6
Software Products	70	7	75	75	75	75	75	75	0
Other Information Services	165	-3	160	160	165	160	160	160	0
Data Communications	32	3	33	33	33	33	33	33	0
Facilities/ Administration	165	-9	150	135	125	115	105	100	-8
In-house Staff	220	-9	200	180	160	140	120	110	-11
IT Budget Total	962	-6	908	853	808	753	708	678	-6
Processing Services	6	0	6	6	6	6	6	6	0
Turnkey Systems	55	-5	52	49	47	45	43	41	-5
Application Software Products	17	12	19	21	23	25	27	29	9
Professional Services	75	-9	68	62	56	50	45	41	-10
Network Services	16	6	17	18	18	18	18	18	1
Systems Operations	12	33	16	20	24	28	31	34	16
Systems Integration	5	0	5	5	5	5	5	5	0
Industry Sectors Total	185	0	185	180	180	175	175	175	-1

Exhibit A-12

Industry Sectors, Banking & Finance, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	1,400	0	1,400	1,400	1,400	1,350	1,300	1,250	-2
Equipment Services	685	5	720	755	780	770	760	750	1
Software Products	400	13	450	500	555	600	635	680	9
Other Information Services	1,350	11	1,500	1,700	1,900	2,050	2,200	2,350	9
Data Communications	575	10	635	685	735	765	780	795	5
Facilities/Administration	785	0	785	785	795	795	780	765	-1
In-house Staff	1,950	-3	1,900	1,850	1,800	1,650	1,550	1,450	-5
IT Budget Total	7,145	3	7,390	7,675	7,965	7,980	8,005	8,040	2
Processing Services	130	8	140	150	160	165	170	175	5
Turnkey Systems	160	13	180	200	225	245	260	280	9
Application Software Products	90	22	110	130	155	180	200	225	15
Professional Services	600	7	640	680	710	720	720	720	2
Network Services	210	24	260	320	385	455	530	610	19
Systems Operations	75	33	100	125	155	180	200	220	17
Systems Integration	115	13	130	145	160	170	180	190	8
Industry Sectors Total	1,380	13	1,560	1,750	1,950	2,115	2,260	2,420	9

Exhibit A-13

Industry Sectors, Insurance, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	405	-1	400	405	415	420	415	410	0
Equipment Services	195	3	200	210	220	225	230	235	3
Software Products	135	7	145	165	185	210	230	255	12
Other Information Services	370	12	415	450	510	555	605	650	9
Data Communications	165	9	180	195	215	230	240	250	7
Facilities/Administration	230	-4	220	215	215	215	215	215	0
In-house Staff	550	-4	530	520	520	495	475	455	-3
IT Budget Total	2,050	2	2,090	2,160	2,280	2,350	2,410	2,470	3
Processing Services	21	5	22	23	25	26	27	28	5
Turnkey Systems	76	7	81	88	98	107	114	122	9
Application Software Products	35	23	43	52	64	77	90	105	20
Professional Services	200	5	210	225	245	260	275	290	7
Network Services	30	17	35	41	48	56	64	72	16
Systems Operations	21	33	28	35	43	50	56	62	17
Systems Integration	42	5	44	47	50	53	55	57	5
Industry Sectors Total	425	9	465	510	575	630	680	735	10

Exhibit A-14

Industry Sectors, Healthcare, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	210	2	215	210	205	200	195	190	-2
Equipment Services	110	5	115	115	115	110	110	110	-1
Software Products	95	16	110	120	130	140	150	165	8
Other Information Services	230	15	265	285	305	325	345	360	6
Data Communications	80	13	90	95	100	105	110	115	5
Facilities/ Administration	145	-3	140	130	120	115	110	105	-6
In-house Staff	335	-1	330	305	285	255	235	220	-8
IT Budget Total	1,205	5	1,265	1,260	1,260	1,250	1,255	1,265	0
Processing Services	11	9	12	13	14	15	16	17	7
Turnkey Systems	89	15	102	112	123	135	149	164	10
Application Software Products	26	23	32	37	42	47	53	59	13
Professional Services	76	7	81	83	84	85	86	87	1
Network Services	27	22	33	39	45	52	60	69	16
Systems Operations	49	22	60	64	67	67	65	62	1
Systems Integration	29	10	32	34	36	38	40	42	6
Industry Sectors Total	305	15	350	380	410	440	470	500	7

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Exhibit A-15

Industry Sectors, Education, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	90	-11	80	70	60	60	60	60	-6
Equipment Services	60	0	60	60	55	50	50	50	-4
Software Products	50	0	50	55	55	55	55	55	2
Other Information Services	60	0	60	60	60	60	60	65	2
Data Communications	40	0	40	40	40	40	40	40	0
Facilities/ Administration	45	0	45	45	45	45	45	45	0
In-house Staff	210	-14	180	160	140	120	100	90	-13
IT Budget Total	555	-7	515	490	455	430	410	405	-5
Processing Services	1	0	1	1	1	1	1	1	0
Turnkey Systems	23	-4	22	21	20	19	18	17	-5
Application Software Products	23	9	25	27	28	29	30	31	4
Professional Services	27	-4	26	25	24	23	22	21	-4
Network Services	4	0	4	4	4	4	4	4	0
Systems Operations	1	0	1	1	1	1	1	1	0
Systems Integration	1	0	1	1	1	1	1	1	0
Industry Sectors Total	80	0	80	80	80	80	75	75	-1

Exhibit A-16

Industry Sectors, Local Government, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					PS Millions				
Equipment Sales	215	-7	200	185	170	155	145	135	-8
Equipment Services	128	-5	122	116	108	99	93	87	-7
Software Products	94	6	100	106	112	121	130	141	7
Other Information Services	295	13	334	377	423	477	541	608	13
Data Communications	92	-1	91	88	84	81	78	75	-4
Facilities/ Administration	135	-7	125	115	105	100	95	90	-6
In-house Staff	385	-12	340	300	265	225	200	175	-12
IT Budget Total	1,344	-2	1,312	1,287	1,267	1,258	1,282	1,311	0
Processing Services	6	0	6	6	6	6	6	6	0
Turnkey Systems	55	4	57	59	61	63	66	69	4
Application Software Products	17	18	20	23	26	30	34	38	14
Professional Services	95	-5	90	85	80	75	70	65	-6
Network Services	12	0	12	12	12	12	12	12	0
Systems Operations	90	43	129	170	219	274	334	404	26
Systems Integration	73	11	81	90	98	107	117	128	10
Industry Sectors Total	350	13	395	445	500	565	640	720	13

Exhibit A-17

Industry Sectors, Central Government, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					PS Millions				
Equipment Sales	300	-12	265	235	205	180	160	140	-12
Equipment Services	165	-6	155	145	135	125	120	115	-6
Software Products	140	7	150	165	180	205	230	260	12
Other Information Services	405	14	460	515	575	640	730	830	13
Data Communications	120	0	120	115	110	105	100	95	-5
Facilities/ Administration	180	-8	165	150	140	130	120	115	-7
In-house Staff	510	-13	445	385	335	280	245	215	-14
IT Budget Total	1,820	-3	1,760	1,710	1,680	1,665	1,705	1,770	0
Processing Services	10	0	10	10	10	10	10	10	0
Turnkey Systems	26	8	28	30	32	34	36	39	7
Application Software Products	14	0	14	14	14	14	14	14	0
Professional Services	115	-4	110	106	101	96	91	86	-5
Network Services	27	15	31	35	39	43	48	53	11
Systems Operations	70	50	105	145	195	255	325	410	31
Systems Integration	250	14	285	320	355	395	440	490	11
Industry Sectors Total	510	15	585	660	745	845	965	1,100	13

Exhibit A-18

Industry Sectors, Business Services, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	55	0	55	55	55	55	55	55	0
Equipment Services	32	3	33	34	35	35	36	37	2
Software Products	57	12	64	72	80	90	100	112	12
Other Information Services	140	7	150	160	170	180	195	210	7
Data Communications	22	9	24	25	26	27	28	29	4
Facilities/ Administration	48	-2	47	46	45	45	45	45	-1
In-house Staff	95	-5	90	85	80	75	75	75	-4
IT Budget Total	449	3	463	477	491	507	534	563	4
Processing Services	3	0	3	3	3	3	3	3	0
Turnkey Systems	89	15	102	117	135	155	178	205	15
Application Software Products	22	14	25	28	31	34	37	40	10
Professional Services	86	1	87	88	88	88	88	88	0
Network Services	11	18	13	15	18	21	25	29	17
Systems Operations	6	17	7	8	9	9	9	9	5
Systems Integration	5	0	5	5	5	5	5	5	0
Industry Sectors Total	220	9	240	265	290	315	345	380	10

Exhibit A-19

Industry Sectors, Other Industries, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	95	-16	80	70	65	60	55	50	-9
Equipment Services	51	-14	44	40	38	35	33	31	-7
Software Products	58	-3	56	55	57	58	60	61	2
Other Information Services	45	-9	41	41	45	49	47	51	4
Data Communications	36	-8	33	31	31	31	31	31	-1
Facilities/ Administration	70	-21	55	45	40	35	30	25	-15
In-house Staff	145	-21	115	95	85	75	65	60	-12
IT Budget Total	500	-15	424	377	361	343	321	309	-6
Processing Services	6	-17	5	5	5	5	5	5	0
Turnkey Systems	11	-9	10	9	9	9	9	9	-2
Application Software Products	37	0	37	38	40	42	44	46	4
Professional Services	3	0	3	3	3	3	3	3	0
Network Services	11	-9	10	10	10	10	10	10	0
Systems Operations	4	25	5	6	7	8	9	10	15
Systems Integration	1	0	1	1	1	1	1	1	0
Industry Sectors Total	75	-7	70	70	75	80	80	85	4

D

Cross-Industry Sectors in Local Currency

Exhibit A-20

Information Services Market by Cross-Industry Sectors, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Accounting	115	9	125	135	145	160	175	190	9
Education & Training	25	0	25	25	25	25	25	25	0
Engineering & Scientific	40	0	40	40	45	50	55	55	7
Human Resources	55	0	55	55	55	60	60	65	3
Office Systems	115	4	120	135	145	160	170	185	9
Planning & Analysis	65	0	65	70	75	85	90	95	8
Other Cross-Industry	70	0	70	75	75	80	90	95	6
Cross-Industry Sectors Total	480	5	505	530	565	620	665	710	7

Exhibit A-21

Cross-Industry Sectors, Accounting, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	2	0	2	2	2	2	2	2	0
Turnkey Systems	47	4	49	51	54	59	64	69	7
Application Software Products	65	11	72	80	88	99	107	117	10
Cross-Industry Sectors Total	115	9	125	135	145	160	175	190	9

Exhibit A-22

Cross-Industry Sectors, Education & Training, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	1	0	1	1	1	1	1	1	0
Turnkey Systems	19	-5	18	18	18	19	20	21	3
Application Software Products	6	-17	5	4	4	4	4	4	-4
Cross-Industry Sectors Total	25	0	25	25	25	25	25	25	0

Exhibit A-23

Cross-Industry Sectors, Engineering & Scientific, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	2	0	2	2	2	2	2	2	0
Turnkey Systems	18	0	18	19	20	22	23	24	6
Application Software Products	18	6	19	21	23	26	28	30	10
Cross-Industry Sectors Total	40	0	40	40	45	50	55	55	7

Exhibit A-24

Cross-Industry Sectors, Human Resources, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	26	-4	25	23	21	21	21	21	-3
Turnkey Systems	9	0	9	9	9	10	11	12	6
Application Software Products	18	11	20	22	24	27	29	32	10
Cross-Industry Sectors Total	55	0	55	55	55	60	60	65	3

Exhibit A-25

Cross-Industry Sectors, Office Systems, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	1	0	1	1	1	1	1	1	0
Turnkey Systems	47	4	49	51	53	57	60	64	5
Application Software Products	65	11	72	81	89	100	108	118	10
Cross-Industry Sectors Total	115	4	120	135	145	160	170	185	9

Exhibit A-26

Cross-Industry Sectors, Planning & Analysis, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	3	0	3	3	3	3	3	3	0
Turnkey Systems	4	0	4	4	4	4	4	4	0
Application Software Products	56	7	60	65	70	77	83	90	8
Cross-Industry Sectors Total	65	0	65	70	75	85	90	95	8

Exhibit A-27

Other Cross-Industry, United Kingdom

Sector	PS Millions								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	9	0	9	8	8	8	8	8	-2
Turnkey Systems	46	2	47	48	49	52	56	60	5
Application Software Products	15	7	16	18	20	22	24	26	10
Cross-Industry Sectors Total	70	0	70	75	75	80	90	95	6

Information Services Industry
Forecast Database, 1994-1999
United Kingdom
(US$ Million)

E

Forecast Database in US Dollars

Exhibit A-28

Top Level IT Expenditure, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	6,700	-4	6,400	6,100	6,000	5,800	5,600	5,400	-3
Equipment Services	3,500	-1	3,500	3,500	3,500	3,400	3,300	3,300	-1
Software Products	3,100	8	3,300	3,600	3,900	4,200	4,600	5,000	9
Other Information Services	7,300	10	8,100	8,800	9,600	10,500	11,400	12,400	9
Data Communications	2,310	7	2,470	2,590	2,740	2,870	2,960	3,100	4
Facilities/ Administration	4,100	-5	3,900	3,700	3,600	3,500	3,400	3,400	-3
In-house Staff	9,900	-6	9,300	8,700	8,200	7,500	7,100	6,700	-6
IT Budget Total	33,000	2	34,000	34,000	35,000	35,000	36,000	36,000	1

Exhibit A-29

Information Services Market
Forecast by Delivery Mode and Submode
United Kingdom, 1994-1999

Delivery Modes	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR(%)
Software and Services Total (ex. Equipment Services)	11,700	9	12,700	13,900	15,100	16,300	17,800	19,100	8
Professional Services	2,860	2	2,900	2,970	3,000	3,100	3,100	3,100	1
- IS Consulting	610	10	670	740	810	890	980	1,070	10
- Education & Training	288	3	296	300	300	310	320	330	2
- Custom Software	1,910	-2	1,880	1,850	1,810	1,730	1,600	1,480	-5
- Application Management	52	29	67	89	111	141	185	237	29
Systems Integration	1,150	13	1,290	1,450	1,610	1,780	1,980	2,190	11
- Equipment	296	10	330	360	390	420	460	480	8
- Application Software	192	27	244	300	380	470	580	710	24
- System Software	89	8	96	104	111	118	126	133	7
- Professional Services	550	11	610	660	710	730	760	820	6
- Other	22	13	25	28	33	37	41	46	13
Systems Operations	870	34	1,170	1,440	1,760	2,090	2,420	2,780	19
- Platform Operations	222	43	320	390	440	480	500	530	11
- Application Operations	560	31	730	890	1,110	1,350	1,600	1,860	21
- Desktop Services	96	31	126	163	207	259	320	390	25
Processing Services	780	8	840	870	920	950	1,010	1,050	4
- Transaction Processing	610	5	640	640	650	670	680	700	2
- Utility Processing	22	0	22	22	22	22	22	22	0
- Other Processing	163	14	185	207	237	266	300	340	13
Network Services	1,290	16	1,490	1,730	1,980	2,280	2,600	2,940	15
- Electronic Info Svcs	860	12	960	1,080	1,200	1,320	1,450	1,550	10
- Network Applications	320	26	400	500	620	770	930	1,140	23
- Network Management	111	20	133	148	163	192	222	251	14
System Software Product	1,760	5	1,850	1,920	2,000	2,070	2,150	2,220	4
- Mainframe	780	-5	740	700	670	640	610	560	-6
- Minicomputer	540	10	590	640	670	710	740	780	6
- Workstation /PC	440	17	520	580	650	730	800	890	11
Application Software Product	1,080	12	1,210	1,350	1,510	1,700	1,880	2,070	11
- Mainframe	96	-5	92	86	81	77	74	71	-5
- Minicomputer	300	7	330	350	370	400	430	470	7
- Workstation /PC	680	17	800	910	1,060	1,230	1,380	1,530	14
Turnkey Systems	1,910	5	2,010	2,100	2,230	2,410	2,570	2,770	7
- Equipment	960	5	1,010	1,050	1,110	1,180	1,240	1,300	5
- Application Software	310	10	340	360	370	410	440	500	8
- System Software	163	5	170	185	200	214	229	244	7
- Professional Services	470	6	500	530	560	620	670	740	8
Equipment Services	3,500	-1	3,500	3,500	3,500	3,400	3,300	3,300	-1
- Equipment Maintenance	2,280	-5	2,160	2,070	1,970	1,780	1,660	1,520	-7
- Environmental Services	1,260	7	1,350	1,420	1,490	1,580	1,660	1,750	5
Grand Total Information Service Market	15,200	7	16,300	17,300	18,500	19,700	21,000	22,300	7

F

Sector Summary in US Dollars

Exhibit A-30

Information Services Market by Sector Summary, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Processing Services	533	6	562	577	592	599	614	629	2
Turnkey Systems	1,627	5	1,716	1,805	1,923	2,071	2,219	2,382	7
Application Software Products	717	13	814	917	1,036	1,169	1,309	1,457	12
Professional Services	2,855	2	2,899	2,973	3,018	3,062	3,077	3,107	1
Network Services	851	18	1,006	1,183	1,383	1,620	1,879	2,160	17
Systems Operations	873	34	1,169	1,442	1,760	2,086	2,419	2,781	19
Systems Integration	1,146	13	1,294	1,450	1,612	1,783	1,975	2,189	11
Industry Sectors Total	8,580	10	9,467	10,355	11,317	12,426	13,462	14,719	9
Transaction Processing	67	0	67	59	59	59	59	59	-2
Turnkey Systems	281	3	288	296	303	333	355	377	6
Application Software Products	362	8	392	429	473	525	570	614	9
Cross-Industry Sectors Total	710	5	747	784	836	917	984	1,050	7
Equipment Services	3,536	-1	3,506	3,491	3,462	3,358	3,314	3,269	-1
System Software Products	1,760	5	1,849	1,923	1,997	2,071	2,145	2,219	4
Utility and Other Processing	185	12	207	229	259	288	325	362	12
Other Electronic Info Services	429	12	481	540	599	658	725	777	10
Generic Sectors Total	5,910	2	6,043	6,183	6,317	6,376	6,509	6,627	2
Total Information Services	15,237	7	16,272	17,308	18,491	19,675	21,006	22,337	7

G

Industry Sectors in US Dollars

Exhibit A-31

Information Services Market by Industry Sectors, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Discrete Manufacturing	1,050	-4	1,006	1,006	999	1,036	1,072	1,109	2
Process Manufacturing	754	16	873	939	1,036	1,183	1,339	1,509	12
Transportation	570	17	666	740	821	917	1,021	1,146	11
Utilities	355	15	407	466	547	621	688	762	13
Telecommunications	185	16	214	244	266	288	318	348	10
Retail Distribution	444	8	481	525	555	592	621	658	6
Wholesale Distribution	274	0	274	266	266	259	259	259	-1
Banking & Finance	2,041	13	2,308	2,589	2,885	3,129	3,343	3,580	9
Insurance	629	9	688	754	851	932	1,006	1,087	10
Healthcare	451	15	518	562	607	651	695	740	7
Education	118	0	118	118	118	118	111	111	-1
Local Government	518	13	584	658	740	836	947	1,065	13
Central Government	754	15	865	976	1,102	1,250	1,428	1,627	13
Business Services	325	9	355	392	429	466	510	562	10
Other Industries	111	-7	104	104	111	118	118	126	4
Industry Sectors Total	8,580	10	9,467	10,355	11,317	12,426	13,462	14,719	9

Exhibit A-32

Industry Sectors, Discrete Manufacturing, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	666	-20	533	459	399	370	340	311	-10
Equipment Services	473	-16	399	355	311	281	266	251	-9
Software Products	385	-8	355	355	340	340	340	355	0
Other Information Services	814	-2	799	784	784	814	858	888	2
Data Communications	148	0	148	148	148	155	163	170	3
Facilities/ Administration	370	-20	296	251	222	207	192	178	-10
In-house Staff	1,331	-11	1,183	1,109	1,036	1,036	1,036	1,036	-3
IT Budget Total	4,186	-11	3,713	3,462	3,240	3,203	3,195	3,188	-3
Processing Services	59	-13	52	47	43	41	40	38	-6
Turnkey Systems	296	-10	266	251	237	237	237	237	-2
Application Software Products	133	0	133	141	141	148	155	163	4
Professional Services	266	-14	229	207	185	178	170	163	-7
Network Services	105	3	108	117	124	138	152	167	9
Systems Operations	133	22	163	185	207	229	251	274	11
Systems Integration	59	-3	58	59	59	62	67	71	4
Industry Sectors Total	1,050	-4	1,006	1,006	999	1,036	1,072	1,109	2

Exhibit A-33

Industry Sectors, Process Manufacturing, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			US$ Million						
Equipment Sales	488	-3	473	436	414	407	399	392	-4
Equipment Services	244	0	244	229	222	222	222	222	-2
Software Products	237	16	274	288	318	362	414	481	12
Other Information Services	570	14	651	703	762	873	976	1,080	11
Data Communications	192	4	200	192	192	200	207	214	1
Facilities/ Administration	281	-5	266	244	229	229	229	229	-3
In-house Staff	740	-6	695	607	547	503	473	444	-9
IT Budget Total	2,751	2	2,803	2,700	2,685	2,796	2,922	3,062	2
Processing Services	24	6	25	25	25	27	28	30	3
Turnkey Systems	185	12	207	214	229	259	288	325	9
Application Software Products	89	25	111	126	148	178	214	259	18
Professional Services	192	4	200	200	207	222	237	251	5
Network Services	68	17	80	89	101	118	139	161	15
Systems Operations	126	35	170	200	237	281	325	370	17
Systems Integration	74	10	81	84	89	96	105	114	7
Industry Sectors Total	754	16	873	939	1,036	1,183	1,339	1,509	12

Exhibit A-34

Industry Sectors, Transportation, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			US$ Million						
Equipment Sales	281	-3	274	251	237	222	207	192	-7
Equipment Services	96	5	101	101	99	96	95	93	-2
Software Products	98	15	112	129	143	163	185	212	13
Other Information Services	473	17	555	614	673	747	828	925	11
Data Communications	61	34	81	102	127	160	200	250	25
Facilities/ Administration	141	0	141	133	126	118	118	118	-3
In-house Staff	274	-5	259	229	207	178	155	141	-12
IT Budget Total	1,423	7	1,522	1,559	1,612	1,683	1,788	1,930	5
Processing Services	141	11	155	155	155	155	155	155	0
Turnkey Systems	89	8	96	104	111	118	126	133	7
Application Software Products	25	24	31	37	43	49	56	64	15
Professional Services	126	6	133	133	133	133	133	133	0
Network Services	89	33	118	148	185	229	281	348	24
Systems Operations	37	40	52	67	81	96	111	126	19
Systems Integration	65	25	81	98	115	136	161	191	19
Industry Sectors Total	570	17	666	740	821	917	1,021	1,146	11

Exhibit A-35

Industry Sectors, Utilities, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	155	5	163	170	185	200	207	214	6
Equipment Services	96	8	104	114	126	135	142	151	8
Software Products	80	19	95	112	136	164	191	223	19
Other Information Services	296	13	333	385	451	503	547	607	13
Data Communications	49	12	55	61	70	77	83	89	10
Facilities/ Administration	141	0	141	148	155	163	170	178	5
In-house Staff	296	0	296	296	296	296	296	296	0
IT Budget Total	1,112	7	1,185	1,286	1,419	1,537	1,636	1,757	8
Processing Services	7	20	9	10	12	13	15	16	13
Turnkey Systems	37	8	40	43	47	52	55	58	8
Application Software Products	12	25	15	18	22	27	31	36	19
Professional Services	133	6	141	155	178	192	207	222	10
Network Services	15	20	18	22	27	33	38	44	20
Systems Operations	49	24	61	71	83	90	93	95	9
Systems Integration	104	19	123	148	180	214	249	288	19
Industry Sectors Total	355	15	407	466	547	621	688	762	13

Exhibit A-36

Industry Sectors, Telecommunications, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	163	14	185	207	229	244	266	288	9
Equipment Services	81	7	87	95	99	101	104	107	4
Software Products	52	17	61	70	77	86	95	105	12
Other Information Services	166	16	192	220	243	263	291	320	11
Data Communications	52	14	59	67	74	80	86	93	10
Facilities/ Administration	80	9	87	95	102	111	120	129	8
In-house Staff	222	3	229	237	237	229	229	229	0
IT Budget Total	815	11	901	990	1,061	1,114	1,191	1,271	7
Processing Services	3	0	3	3	3	3	3	3	0
Turnkey Systems	22	0	22	22	22	22	22	22	0
Application Software Products	7	20	9	10	12	13	15	16	13
Professional Services	89	10	98	108	115	121	127	133	6
Network Services	16	27	21	27	34	41	50	61	24
Systems Operations	6	25	7	7	7	7	7	7	0
Systems Integration	44	20	53	64	72	81	92	104	14
Industry Sectors Total	185	16	214	244	266	288	318	348	10

Exhibit A-37

Industry Sectors, Retail Distribution, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	525	-3	510	496	481	466	444	422	-4
Equipment Services	259	0	259	259	251	244	237	229	-2
Software Products	163	9	178	185	200	207	214	229	5
Other Information Services	377	8	407	451	466	503	533	555	6
Data Communications	81	5	86	89	92	95	96	98	3
Facilities/ Administration	399	-6	377	355	340	333	318	303	-4
In-house Staff	547	-5	518	488	459	414	385	355	-7
IT Budget Total	2,352	-1	2,334	2,322	2,288	2,262	2,226	2,191	-1
Processing Services	12	0	12	12	12	12	12	12	0
Turnkey Systems	139	7	149	160	172	183	192	203	6
Application Software Products	33	14	37	41	46	49	52	55	8
Professional Services	155	0	155	155	148	141	133	126	-4
Network Services	41	14	47	53	59	67	74	81	11
Systems Operations	37	36	50	64	78	93	107	120	19
Systems Integration	27	17	31	37	43	49	55	62	15
Industry Sectors Total	444	8	481	525	555	592	621	658	6

Exhibit A-38

Industry Sectors, Wholesale Distribution, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	288	-8	266	244	222	207	192	178	-8
Equipment Services	170	-4	163	155	148	133	126	118	-6
Software Products	104	7	111	111	111	111	111	111	0
Other Information Services	244	-3	237	237	244	237	237	237	0
Data Communications	47	3	49	49	49	49	49	49	0
Facilities/ Administration	244	-9	222	200	185	170	155	148	-8
In-house Staff	325	-9	296	266	237	207	178	163	-11
IT Budget Total	1,423	-6	1,343	1,262	1,195	1,114	1,047	1,003	-6
Processing Services	9	0	9	9	9	9	9	9	0
Turnkey Systems	81	-5	77	72	70	67	64	61	-5
Application Software Products	25	12	28	31	34	37	40	43	9
Professional Services	111	-9	101	92	83	74	67	61	-10
Network Services	24	6	25	27	27	27	27	27	1
Systems Operations	18	33	24	30	36	41	46	50	16
Systems Integration	7	0	7	7	7	7	7	7	0
Industry Sectors Total	274	0	274	266	266	259	259	259	-1

Exhibit A-39

Industry Sectors, Banking & Finance, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	2,071	0	2,071	2,071	2,071	1,997	1,923	1,849	-2
Equipment Services	1,013	5	1,065	1,117	1,154	1,139	1,124	1,109	1
Software Products	592	13	666	740	821	888	939	1,006	9
Other Information Services	1,997	11	2,219	2,515	2,811	3,033	3,254	3,476	9
Data Communications	851	10	939	1,013	1,087	1,132	1,154	1,176	5
Facilities/ Administration	1,161	0	1,161	1,161	1,176	1,176	1,154	1,132	-1
In-house Staff	2,885	-3	2,811	2,737	2,663	2,441	2,293	2,145	-5
IT Budget Total	10,570	3	10,932	11,354	11,783	11,805	11,842	11,893	2
Processing Services	192	8	207	222	237	244	251	259	5
Turnkey Systems	237	13	266	296	333	362	385	414	9
Application Software Products	133	22	163	192	229	266	296	333	15
Professional Services	888	7	947	1,006	1,050	1,065	1,065	1,065	2
Network Services	311	24	385	473	570	673	784	902	19
Systems Operations	111	33	148	185	229	266	296	325	17
Systems Integration	170	13	192	214	237	251	266	281	8
Industry Sectors Total	2,041	13	2,308	2,589	2,885	3,129	3,343	3,580	9

Exhibit A-40

Industry Sectors, Insurance, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	599	-1	592	599	614	621	614	607	0
Equipment Services	288	3	296	311	325	333	340	348	3
Software Products	200	7	214	244	274	311	340	377	12
Other Information Services	547	12	614	666	754	821	895	962	9
Data Communications	244	9	266	288	318	340	355	370	7
Facilities/ Administration	340	-4	325	318	318	318	318	318	0
In-house Staff	814	-4	784	769	769	732	703	673	-3
IT Budget Total	3,033	2	3,092	3,195	3,373	3,476	3,565	3,654	3
Processing Services	31	5	33	34	37	38	40	41	5
Turnkey Systems	112	7	120	130	145	158	169	180	9
Application Software Products	52	23	64	77	95	114	133	155	20
Professional Services	296	5	311	333	362	385	407	429	7
Network Services	44	17	52	61	71	83	95	107	16
Systems Operations	31	33	41	52	64	74	83	92	17
Systems Integration	62	5	65	70	74	78	81	84	5
Industry Sectors Total	629	9	688	754	851	932	1,006	1,087	10

Exhibit A-41

Industry Sectors, Healthcare, United Kingdom

Sector	US$ Million								94-99
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	CAGR (%)
Equipment Sales	311	2	318	311	303	296	288	281	-2
Equipment Services	163	5	170	170	170	163	163	163	-1
Software Products	141	16	163	178	192	207	222	244	8
Other Information Services	340	15	392	422	451	481	510	533	6
Data Communications	118	13	133	141	148	155	163	170	5
Facilities/ Administration	214	-3	207	192	178	170	163	155	-6
In-house Staff	496	-1	488	451	422	377	348	325	-8
IT Budget Total	1,783	5	1,871	1,864	1,864	1,849	1,857	1,871	0
Processing Services	16	9	18	19	21	22	24	25	7
Turnkey Systems	132	15	151	166	182	200	220	243	10
Application Software Products	38	23	47	55	62	70	78	87	13
Professional Services	112	7	120	123	124	126	127	129	1
Network Services	40	22	49	58	67	77	89	102	16
Systems Operations	72	22	89	95	99	99	96	92	1
Systems Integration	43	10	47	50	53	56	59	62	6
Industry Sectors Total	451	15	518	562	607	651	695	740	7

Exhibit A-42

Industry Sectors, Education, United Kingdom

Sector	US$ Million								94-99
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	CAGR (%)
Equipment Sales	133	-11	118	104	89	89	89	89	-6
Equipment Services	89	0	89	89	81	74	74	74	-4
Software Products	74	0	74	81	81	81	81	81	2
Other Information Services	89	0	89	89	89	89	89	96	2
Data Communications	59	0	59	59	59	59	59	59	0
Facilities/ Administration	67	0	67	67	67	67	67	67	0
In-house Staff	311	-14	266	237	207	178	148	133	-13
IT Budget Total	821	-7	762	725	673	636	607	599	-5
Processing Services	1	0	1	1	1	1	1	1	0
Turnkey Systems	34	-4	33	31	30	28	27	25	-5
Application Software Products	34	9	37	40	41	43	44	46	4
Professional Services	40	-4	38	37	36	34	33	31	-4
Network Services	6	0	6	6	6	6	6	6	0
Systems Operations	1	0	1	1	1	1	1	1	0
Systems Integration	1	0	1	1	1	1	1	1	0
Industry Sectors Total	118	0	118	118	118	118	111	111	-1

Exhibit A-43

Industry Sectors, Local Government, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
				US$ Million					
Equipment Sales	318	-7	296	274	251	229	214	200	-8
Equipment Services	189	-5	180	172	160	146	138	129	-7
Software Products	139	6	148	157	166	179	192	209	7
Other Information Services	436	13	494	558	626	706	800	899	13
Data Communications	136	-1	135	130	124	120	115	111	-4
Facilities/ Administration	200	-7	185	170	155	148	141	133	-6
In-house Staff	570	-12	503	444	392	333	296	259	-12
IT Budget Total	1,988	-2	1,941	1,904	1,874	1,861	1,896	1,939	0
Processing Services	9	0	9	9	9	9	9	9	0
Turnkey Systems	81	4	84	87	90	93	98	102	4
Application Software Products	25	18	30	34	38	44	50	56	14
Professional Services	141	-5	133	126	118	111	104	96	-6
Network Services	18	0	18	18	18	18	18	18	0
Systems Operations	133	43	191	251	324	405	494	598	26
Systems Integration	108	11	120	133	145	158	173	189	10
Industry Sectors Total	518	13	584	658	740	836	947	1,065	13

Exhibit A-44

Industry Sectors, Central Government, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
				US$ Million					
Equipment Sales	444	-12	392	348	303	266	237	207	-12
Equipment Services	244	-6	229	214	200	185	178	170	-6
Software Products	207	7	222	244	266	303	340	385	12
Other Information Services	599	14	680	762	851	947	1,080	1,228	13
Data Communications	178	0	178	170	163	155	148	141	-5
Facilities/ Administration	266	-8	244	222	207	192	178	170	-7
In-house Staff	754	-13	658	570	496	414	362	318	-14
IT Budget Total	2,692	-3	2,604	2,530	2,485	2,463	2,522	2,618	0
Processing Services	15	0	15	15	15	15	15	15	0
Turnkey Systems	38	8	41	44	47	50	53	58	7
Application Software Products	21	0	21	21	21	21	21	21	0
Professional Services	170	-4	163	157	149	142	135	127	-5
Network Services	40	15	46	52	58	64	71	78	11
Systems Operations	104	50	155	214	288	377	481	607	31
Systems Integration	370	14	422	473	525	584	651	725	11
Industry Sectors Total	754	15	865	976	1,102	1,250	1,428	1,627	13

Exhibit A-45

Industry Sectors, Business Services, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	81	0	81	81	81	81	81	81	0
Equipment Services	47	3	49	50	52	52	53	55	2
Software Products	84	12	95	107	118	133	148	166	12
Other Information Services	207	7	222	237	251	266	288	311	7
Data Communications	33	9	36	37	38	40	41	43	4
Facilities/ Administration	71	-2	70	68	67	67	67	67	-1
In-house Staff	141	-5	133	126	118	111	111	111	-4
IT Budget Total	664	3	685	706	726	750	790	833	4
Processing Services	4	0	4	4	4	4	4	4	0
Turnkey Systems	132	15	151	173	200	229	263	303	15
Application Software Products	33	14	37	41	46	50	55	59	10
Professional Services	127	1	129	130	130	130	130	130	0
Network Services	16	18	19	22	27	31	37	43	17
Systems Operations	9	17	10	12	13	13	13	13	5
Systems Integration	7	0	7	7	7	7	7	7	0
Industry Sectors Total	325	9	355	392	429	466	510	562	10

Exhibit A-46

Industry Sectors, Other Industries, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	141	-16	118	104	96	89	81	74	-9
Equipment Services	75	-14	65	59	56	52	49	46	-7
Software Products	86	-3	83	81	84	86	89	90	2
Other Information Services	67	-9	61	61	67	72	70	75	4
Data Communications	53	-8	49	46	46	46	46	46	-1
Facilities/ Administration	104	-21	81	67	59	52	44	37	-15
In-house Staff	214	-21	170	141	126	111	96	89	-12
IT Budget Total	740	-15	627	558	534	507	475	457	-6
Processing Services	9	-17	7	7	7	7	7	7	0
Turnkey Systems	16	-9	15	13	13	13	13	13	-2
Application Software Products	55	0	55	56	59	62	65	68	4
Professional Services	4	0	4	4	4	4	4	4	0
Network Services	16	-9	15	15	15	15	15	15	0
Systems Operations	6	25	7	9	10	12	13	15	15
Systems Integration	1	0	1	1	1	1	1	1	0
Industry Sectors Total	111	-7	104	104	111	118	118	126	4

H
Cross-Industry Sectors in US Dollars

Exhibit A-47

Information Services Market by Cross-Industry Sectors, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Accounting	170	9	185	200	214	237	259	281	9
Education & Training	37	0	37	37	37	37	37	37	0
Engineering & Scientific	59	0	59	59	67	74	81	81	7
Human Resources	81	0	81	81	81	89	89	96	3
Office Systems	170	4	178	200	214	237	251	274	9
Planning & Analysis	96	0	96	104	111	126	133	141	8
Other Cross-Industry	104	0	104	111	111	118	133	141	6
Cross-Industry Sectors Total	710	5	747	784	836	917	984	1,050	7

Exhibit A-27

Cross-Industry Sectors, Accounting, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	3	0	3	3	3	3	3	3	0
Turnkey Systems	70	4	72	75	80	87	95	102	7
Application Software Products	96	11	107	118	130	146	158	173	10
Cross-Industry Sectors Total	170	9	185	200	214	237	259	281	9

Exhibit A-49

Cross-Industry Sectors, Education & Training, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	1	0	1	1	1	1	1	1	0
Turnkey Systems	28	-5	27	27	27	28	30	31	3
Application Software Products	9	-17	7	6	6	6	6	6	-4
Cross-Industry Sectors Total	37	0	37	37	37	37	37	37	0

Exhibit A-50

Cross-Industry Sectors, Engineering & Scientific, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	3	0	3	3	3	3	3	3	0
Turnkey Systems	27	0	27	28	30	33	34	36	6
Application Software Products	27	6	28	31	34	38	41	44	10
Cross-Industry Sectors Total	59	0	59	59	67	74	81	81	7

Exhibit A-51

Cross-Industry Sectors, Human Resources, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	38	-4	37	34	31	31	31	31	-3
Turnkey Systems	13	0	13	13	13	15	16	18	6
Application Software Products	27	11	30	33	36	40	43	47	10
Cross-Industry Sectors Total	81	0	81	81	81	89	89	96	3

Exhibit A-52

Cross-Industry Sectors, Office Systems, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	1	0	1	1	1	1	1	1	0
Turnkey Systems	70	4	72	75	78	84	89	95	5
Application Software Products	96	11	107	120	132	148	160	175	10
Cross-Industry Sectors Total	170	4	178	200	214	237	251	274	9

Exhibit A-53

Cross-Industry Sectors, Planning & Analysis, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	4	0	4	4	4	4	4	4	0
Turnkey Systems	6	0	6	6	6	6	6	6	0
Application Software Products	83	7	89	96	104	114	123	133	8
Cross-Industry Sectors Total	96	0	96	104	111	126	133	141	8

Exhibit A-54

Other Cross-Industry, United Kingdom

Sector	US$ Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	13	0	13	12	12	12	12	12	-2
Turnkey Systems	68	2	70	71	72	77	83	89	5
Application Software Products	22	7	24	27	30	33	36	38	10
Cross-Industry Sectors Total	104	0	104	111	111	118	133	141	6

Information Services Industry Forecast Database, 1994-1999 United Kingdom (ECU Million)

I

Forecast Database in ECUs

Exhibit A-55

Top Level IT Expenditure, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	6,000	-4	5,700	5,500	5,400	5,200	5,000	4,800	-3
Equipment Services	3,200	-1	3,100	3,100	3,100	3,000	2,980	2,940	-1
Software Products	2,760	8	2,980	3,200	3,500	3,800	4,100	4,500	9
Other Information Services	6,600	10	7,300	7,900	8,700	9,500	10,200	11,100	9
Data Communications	2,070	7	2,220	2,320	2,460	2,580	2,660	2,760	4
Facilities/ Administration	3,700	-5	3,500	3,300	3,200	3,200	3,100	3,000	-3
In-house Staff	8,900	-6	8,400	7,800	7,400	6,800	6,400	6,000	-6
IT Budget Total	29,900	2	31,000	31,000	31,000	31,000	32,000	33,000	1

Exhibit A-56

Information Services Market
Forecast by Delivery Mode and Submode
United Kingdom, 1994-1999

		ECU Million							
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR(%)
Software and Services Total (ex. Equipment Services)	10,500	9	11,400	12,500	13,500	14,600	15,900	17,100	8
Professional Services	2,560	2	2,600	2,670	2,710	2,750	2,760	2,790	1
- IS Consulting	540	10	600	660	720	800	880	960	10
- Education & Training	259	3	266	272	272	279	286	292	2
- Custom Software	1,710	-2	1,690	1,660	1,620	1,550	1,430	1,330	-5
- Application Management	46	29	60	80	100	126	166	212	29
Systems Integration	1,030	13	1,160	1,300	1,450	1,600	1,770	1,970	11
- Equipment	266	10	292	320	350	380	410	430	8
- Application Software	173	27	219	272	340	430	530	640	24
- System Software	80	8	86	93	100	106	113	120	7
- Professional Services	490	11	540	590	640	660	680	740	6
- Other	20	13	23	25	29	33	37	41	13
Systems Operations	780	34	1,050	1,300	1,580	1,870	2,170	2,500	19
- Platform Operations	199	43	286	350	400	430	450	480	11
- Application Operations	500	31	650	800	1,000	1,210	1,430	1,670	21
- Desktop Services	86	31	113	146	186	232	286	350	25
Processing Services	700	8	760	780	820	850	900	940	4
- Transaction Processing	540	5	570	570	580	600	610	620	2
- Utility Processing	20	0	20	20	20	20	20	20	0
- Other Processing	146	14	166	186	212	239	272	310	13
Network Services	1,160	16	1,340	1,550	1,780	2,050	2,340	2,640	15
- Electronic Info Svcs	770	12	860	970	1,080	1,180	1,300	1,390	10
- Network Applications	286	26	360	450	560	690	840	1,020	23
- Network Management	100	20	120	133	146	173	199	226	14
System Software Product	1,580	5	1,660	1,730	1,790	1,860	1,930	1,990	4
- Mainframe	700	-5	660	620	600	570	540	500	-6
- Minicomputer	490	10	530	580	600	640	660	700	6
- Workstation /PC	400	17	470	530	580	650	720	800	11
Application Software Product	970	12	1,090	1,210	1,360	1,530	1,690	1,860	11
- Mainframe	86	-5	82	77	73	69	66	64	-5
- Minicomputer	272	7	292	310	330	360	390	420	7
- Workstation /PC	610	17	710	820	950	1,100	1,240	1,380	14
Turnkey Systems	1,710	5	1,810	1,890	2,010	2,170	2,310	2,480	7
- Equipment	860	5	900	940	1,000	1,060	1,120	1,170	5
- Application Software	279	10	310	320	330	370	400	450	8
- System Software	146	5	153	166	179	193	206	219	7
- Professional Services	430	6	450	480	510	560	600	660	8
Equipment Services	3,200	-1	3,100	3,100	3,100	3,000	2,980	2,940	-1
- Equipment Maintenance	2,050	-5	1,940	1,860	1,770	1,590	1,490	1,370	-7
- Environmental Services	1,130	7	1,210	1,280	1,340	1,420	1,490	1,570	5
Grand Total Information Service Market	13,700	7	14,600	15,500	16,600	17,700	18,900	20,100	7

J

Sector Summary in ECUs

Exhibit A-57

Information Services Market by Sector Summary, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
				ECU Million					
Processing Services	478	6	505	518	531	538	551	564	2
Turnkey Systems	1,461	5	1,541	1,620	1,726	1,859	1,992	2,138	7
Application Software Products	644	13	730	823	930	1,049	1,175	1,308	12
Professional Services	2,563	2	2,603	2,669	2,709	2,749	2,762	2,789	1
Network Services	764	18	903	1,062	1,242	1,454	1,687	1,939	17
Systems Operations	784	34	1,049	1,295	1,580	1,873	2,171	2,497	19
Systems Integration	1,029	13	1,162	1,301	1,448	1,600	1,773	1,965	11
Industry Sectors Total	7,703	10	8,499	9,296	10,159	11,155	12,085	13,214	9
Transaction Processing	60	0	60	53	53	53	53	53	-2
Turnkey Systems	252	3	259	266	272	299	319	339	6
Application Software Products	325	8	352	385	425	471	511	551	9
Cross-Industry Sectors Total	637	5	671	704	750	823	883	943	7
Equipment Services	3,174	-1	3,147	3,134	3,108	3,015	2,975	2,935	-1
System Software Products	1,580	5	1,660	1,726	1,793	1,859	1,926	1,992	4
Utility and Other Processing	166	12	186	206	232	259	292	325	12
Other Electronic Info Services	385	12	432	485	538	591	651	697	10
Generic Sectors Total	5,305	2	5,425	5,551	5,671	5,724	5,843	5,950	2
Total Information Services	13,679	7	14,608	15,538	16,600	17,663	18,858	20,053	7

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Industry Sectors in ECUs

Exhibit A-58

Information Services Market by Industry Sectors, United Kingdom

	ECU Million							
Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Discrete Manufacturing	943	-4	903	903	896	930	963	996	2
Process Manufacturing	677	16	784	843	930	1,062	1,202	1,355	12
Transportation	511	17	598	664	737	823	916	1,029	11
Utilities	319	15	365	418	491	558	618	684	13
Telecommunications	166	16	193	219	239	259	286	312	10
Retail Distribution	398	8	432	471	498	531	558	591	6
Wholesale Distribution	246	0	246	239	239	232	232	232	-1
Banking & Finance	1,833	13	2,072	2,324	2,590	2,809	3,001	3,214	9
Insurance	564	9	618	677	764	837	903	976	10
Healthcare	405	15	465	505	544	584	624	664	7
Education	106	0	106	106	106	106	100	100	-1
Local Government	465	13	525	591	664	750	850	956	13
Central Government	677	15	777	876	989	1,122	1,282	1,461	13
Business Services	292	9	319	352	385	418	458	505	10
Other Industries	100	-7	93	93	100	106	106	113	4
Industry Sectors Total	7,703	10	8,499	9,296	10,159	11,155	12,085	13,214	9

Exhibit A-59

Industry Sectors, Discrete Manufacturing, United Kingdom

	ECU Million							
Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	598	-20	478	412	359	332	305	279	-10
Equipment Services	425	-16	359	319	279	252	239	226	-9
Software Products	345	-8	319	319	305	305	305	319	0
Other Information Services	730	-2	717	704	704	730	770	797	2
Data Communications	133	0	133	133	133	139	146	153	3
Facilities/ Administration	332	-20	266	226	199	186	173	159	-10
In-house Staff	1,195	-11	1,062	996	930	930	930	930	-3
IT Budget Total	3,758	-11	3,333	3,108	2,908	2,875	2,869	2,862	-3
Processing Services	53	-13	46	42	39	37	36	35	-6
Turnkey Systems	266	-10	239	226	212	212	212	212	-2
Application Software Products	120	0	120	126	126	133	139	146	4
Professional Services	239	-14	206	186	166	159	153	146	-7
Network Services	94	3	97	105	112	124	137	150	9
Systems Operations	120	22	146	166	186	206	226	246	11
Systems Integration	53	-3	52	53	53	56	60	64	4
Industry Sectors Total	943	-4	903	903	896	930	963	996	2

Exhibit A-60

Industry Sectors, Process Manufacturing, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			ECU Million						
Equipment Sales	438	-3	425	392	372	365	359	352	-4
Equipment Services	219	0	219	206	199	199	199	199	-2
Software Products	212	16	246	259	286	325	372	432	12
Other Information Services	511	14	584	631	684	784	876	969	11
Data Communications	173	4	179	173	173	179	186	193	1
Facilities/ Administration	252	-5	239	219	206	206	206	206	-3
In-house Staff	664	-6	624	544	491	452	425	398	-9
IT Budget Total	2,470	2	2,517	2,424	2,410	2,510	2,623	2,749	2
Processing Services	21	6	23	23	23	24	25	27	3
Turnkey Systems	166	12	186	193	206	232	259	292	9
Application Software Products	80	25	100	113	133	159	193	232	18
Professional Services	173	4	179	179	186	199	212	226	5
Network Services	61	17	72	80	90	106	125	145	15
Systems Operations	113	35	153	179	212	252	292	332	17
Systems Integration	66	10	73	76	80	86	94	102	7
Industry Sectors Total	677	16	784	843	930	1,062	1,202	1,355	12

Exhibit A-61

Industry Sectors, Transportation, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			ECU Million						
Equipment Sales	252	-3	246	226	212	199	186	173	-7
Equipment Services	86	5	90	90	89	86	85	84	-2
Software Products	88	15	101	116	129	146	166	190	13
Other Information Services	425	17	498	551	604	671	744	830	11
Data Communications	54	34	73	92	114	143	179	224	25
Facilities/ Administration	126	0	126	120	113	106	106	106	-3
In-house Staff	246	-5	232	206	186	159	139	126	-12
IT Budget Total	1,278	7	1,367	1,400	1,448	1,511	1,606	1,733	5
Processing Services	126	11	139	139	139	139	139	139	0
Turnkey Systems	80	8	86	93	100	106	113	120	7
Application Software Products	23	24	28	33	39	44	50	57	15
Professional Services	113	6	120	120	120	120	120	120	0
Network Services	80	33	106	133	166	206	252	312	24
Systems Operations	33	40	46	60	73	86	100	113	19
Systems Integration	58	25	73	88	104	122	145	171	19
Industry Sectors Total	511	17	598	664	737	823	916	1,029	11

Exhibit A-62

Industry Sectors, Utilities, United Kingdom

	ECU Million							
Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	139	5	146	153	166	179	186	193	6
Equipment Services	86	8	93	102	113	121	127	135	8
Software Products	72	19	85	101	122	147	171	201	19
Other Information Services	266	13	299	345	405	452	491	544	13
Data Communications	44	12	49	54	62	69	74	80	10
Facilities/ Administration	126	0	126	133	139	146	153	159	5
In-house Staff	266	0	266	266	266	266	266	266	0
IT Budget Total	999	7	1,064	1,154	1,274	1,380	1,469	1,578	8
Processing Services	7	20	8	9	11	12	13	15	13
Turnkey Systems	33	8	36	39	42	46	49	52	8
Application Software Products	11	25	13	16	20	24	28	32	19
Professional Services	120	6	126	139	159	173	186	199	10
Network Services	13	20	16	20	24	29	35	40	20
Systems Operations	44	24	54	64	74	81	84	85	9
Systems Integration	93	19	110	133	162	193	223	259	19
Industry Sectors Total	319	15	365	418	491	558	618	684	13

Exhibit A-63

Industry Sectors, Telecommunications, United Kingdom

	ECU Million							
Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	146	14	166	186	206	219	239	259	9
Equipment Services	73	7	78	85	89	90	93	96	4
Software Products	46	17	54	62	69	77	85	94	12
Other Information Services	149	16	173	198	218	236	262	287	11
Data Communications	46	14	53	60	66	72	77	84	10
Facilities/ Administration	72	9	78	85	92	100	108	116	8
In-house Staff	199	3	206	212	212	206	206	206	0
IT Budget Total	732	11	809	888	952	1,000	1,069	1,141	7
Processing Services	3	0	3	3	3	3	3	3	0
Turnkey Systems	20	0	20	20	20	20	20	20	0
Application Software Products	7	20	8	9	11	12	13	15	13
Professional Services	80	10	88	97	104	109	114	120	6
Network Services	15	27	19	24	31	37	45	54	24
Systems Operations	5	25	7	7	7	7	7	7	0
Systems Integration	40	20	48	57	65	73	82	93	14
Industry Sectors Total	166	16	193	219	239	259	286	312	10

Exhibit A-64

Industry Sectors, Retail Distribution, United Kingdom

Sector	ECU Million							
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	471	-3	458	445	432	418	398	378	-4
Equipment Services	232	0	232	232	226	219	212	206	-2
Software Products	146	9	159	166	179	186	193	206	5
Other Information Services	339	8	365	405	418	452	478	498	6
Data Communications	73	5	77	80	82	85	86	88	3
Facilities/ Administration	359	-6	339	319	305	299	286	272	-4
In-house Staff	491	-5	465	438	412	372	345	319	-7
IT Budget Total	2,112	-1	2,096	2,085	2,054	2,031	1,999	1,967	-1
Processing Services	11	0	11	11	11	11	11	11	0
Turnkey Systems	125	7	134	143	154	165	173	182	6
Application Software Products	29	14	33	37	41	44	46	49	8
Professional Services	139	0	139	139	133	126	120	113	-4
Network Services	37	14	42	48	53	60	66	73	11
Systems Operations	33	36	45	57	70	84	96	108	19
Systems Integration	24	17	28	33	39	44	49	56	15
Industry Sectors Total	398	8	432	471	498	531	558	591	6

Exhibit A-65

Industry Sectors, Wholesale Distribution, United Kingdom

Sector	ECU Million							
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	259	-8	239	219	199	186	173	159	-8
Equipment Services	153	-4	146	139	133	120	113	106	-6
Software Products	93	7	100	100	100	100	100	100	0
Other Information Services	219	-3	212	212	219	212	212	212	0
Data Communications	42	3	44	44	44	44	44	44	0
Facilities/ Administration	219	-9	199	179	166	153	139	133	-8
In-house Staff	292	-9	266	239	212	186	159	146	-11
IT Budget Total	1,278	-6	1,206	1,133	1,073	1,000	940	900	-6
Processing Services	8	0	8	8	8	8	8	8	0
Turnkey Systems	73	-5	69	65	62	60	57	54	-5
Application Software Products	23	12	25	28	31	33	36	39	9
Professional Services	100	-9	90	82	74	66	60	54	-10
Network Services	21	6	23	24	24	24	24	24	1
Systems Operations	16	33	21	27	32	37	41	45	16
Systems Integration	7	0	7	7	7	7	7	7	0
Industry Sectors Total	246	0	246	239	239	232	232	232	-1

Exhibit A-66

Industry Sectors, Banking & Finance, United Kingdom

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	1,859	0	1,859	1,859	1,859	1,793	1,726	1,660	-2
Equipment Services	910	5	956	1,003	1,036	1,023	1,009	996	1
Software Products	531	13	598	664	737	797	843	903	9
Other Information Services	1,793	11	1,992	2,258	2,523	2,722	2,922	3,121	9
Data Communications	764	10	843	910	976	1,016	1,036	1,056	5
Facilities/ Administration	1,042	0	1,042	1,042	1,056	1,056	1,036	1,016	-1
In-house Staff	2,590	-3	2,523	2,457	2,390	2,191	2,058	1,926	-5
IT Budget Total	9,489	3	9,814	10,193	10,578	10,598	10,631	10,677	2
Processing Services	173	8	186	199	212	219	226	232	5
Turnkey Systems	212	13	239	266	299	325	345	372	9
Application Software Products	120	22	146	173	206	239	266	299	15
Professional Services	797	7	850	903	943	956	956	956	2
Network Services	279	24	345	425	511	604	704	810	19
Systems Operations	100	33	133	166	206	239	266	292	17
Systems Integration	153	13	173	193	212	226	239	252	8
Industry Sectors Total	1,833	13	2,072	2,324	2,590	2,809	3,001	3,214	9

Exhibit A-67

Industry Sectors, Insurance, United Kingdom

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Equipment Sales	538	-1	531	538	551	558	551	544	0
Equipment Services	259	3	266	279	292	299	305	312	3
Software Products	179	7	193	219	246	279	305	339	12
Other Information Services	491	12	551	598	677	737	803	863	9
Data Communications	219	9	239	259	286	305	319	332	7
Facilities/ Administration	305	-4	292	286	286	286	286	286	0
In-house Staff	730	-4	704	691	691	657	631	604	-3
IT Budget Total	2,722	2	2,776	2,869	3,028	3,121	3,201	3,280	3
Processing Services	28	5	29	31	33	35	36	37	5
Turnkey Systems	101	7	108	117	130	142	151	162	9
Application Software Products	46	23	57	69	85	102	120	139	20
Professional Services	266	5	279	299	325	345	365	385	7
Network Services	40	17	46	54	64	74	85	96	16
Systems Operations	28	33	37	46	57	66	74	82	17
Systems Integration	56	5	58	62	66	70	73	76	5
Industry Sectors Total	564	9	618	677	764	837	903	976	10

Exhibit A-68

Industry Sectors, Healthcare, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			ECU Million						
Equipment Sales	279	2	286	279	272	266	259	252	-2
Equipment Services	146	5	153	153	153	146	146	146	-1
Software Products	126	16	146	159	173	186	199	219	8
Other Information Services	305	15	352	378	405	432	458	478	6
Data Communications	106	13	120	126	133	139	146	153	5
Facilities/ Administration	193	-3	186	173	159	153	146	139	-6
In-house Staff	445	-1	438	405	378	339	312	292	-8
IT Budget Total	1,600	5	1,680	1,673	1,673	1,660	1,667	1,680	0
Processing Services	15	9	16	17	19	20	21	23	7
Turnkey Systems	118	15	135	149	163	179	198	218	10
Application Software Products	35	23	42	49	56	62	70	78	13
Professional Services	101	7	108	110	112	113	114	116	1
Network Services	36	22	44	52	60	69	80	92	16
Systems Operations	65	22	80	85	89	89	86	82	1
Systems Integration	39	10	42	45	48	50	53	56	6
Industry Sectors Total	405	15	465	505	544	584	624	664	7

Exhibit A-69

Industry Sectors, Education, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
			ECU Million						
Equipment Sales	120	-11	106	93	80	80	80	80	-6
Equipment Services	80	0	80	80	73	66	66	66	-4
Software Products	66	0	66	73	73	73	73	73	2
Other Information Services	80	0	80	80	80	80	80	86	2
Data Communications	53	0	53	53	53	53	53	53	0
Facilities/ Administration	60	0	60	60	60	60	60	60	0
In-house Staff	279	-14	239	212	186	159	133	120	-13
IT Budget Total	737	-7	684	651	604	571	544	538	-5
Processing Services	1	0	1	1	1	1	1	1	0
Turnkey Systems	31	-4	29	28	27	25	24	23	-5
Application Software Products	31	9	33	36	37	39	40	41	4
Professional Services	36	-4	35	33	32	31	29	28	-4
Network Services	5	0	5	5	5	5	5	5	0
Systems Operations	1	0	1	1	1	1	1	1	0
Systems Integration	1	0	1	1	1	1	1	1	0
Industry Sectors Total	106	0	106	106	106	106	100	100	-1

Exhibit A-70

Industry Sectors, Local Government, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					ECU Million				
Equipment Sales	286	-7	266	246	226	206	193	179	-8
Equipment Services	170	-5	162	154	143	131	124	116	-7
Software Products	125	6	133	141	149	161	173	187	7
Other Information Services	392	13	444	501	562	633	718	807	13
Data Communications	122	-1	121	117	112	108	104	100	-4
Facilities/ Administration	179	-7	166	153	139	133	126	120	-6
In-house Staff	511	-12	452	398	352	299	266	232	-12
IT Budget Total	1,785	-2	1,742	1,709	1,683	1,671	1,703	1,741	0
Processing Services	8	0	8	8	8	8	8	8	0
Turnkey Systems	73	4	76	78	81	84	88	92	4
Application Software Products	23	18	27	31	35	40	45	50	14
Professional Services	126	-5	120	113	106	100	93	86	-6
Network Services	16	0	16	16	16	16	16	16	0
Systems Operations	120	43	171	226	291	364	444	537	26
Systems Integration	97	11	108	120	130	142	155	170	10
Industry Sectors Total	465	13	525	591	664	750	850	956	13

Exhibit A-71

Industry Sectors, Central Government, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					ECU Million				
Equipment Sales	398	-12	352	312	272	239	212	186	-12
Equipment Services	219	-6	206	193	179	166	159	153	-6
Software Products	186	7	199	219	239	272	305	345	12
Other Information Services	538	14	611	684	764	850	969	1,102	13
Data Communications	159	0	159	153	146	139	133	126	-5
Facilities/ Administration	239	-8	219	199	186	173	159	153	-7
In-house Staff	677	-13	591	511	445	372	325	286	-14
IT Budget Total	2,417	-3	2,337	2,271	2,231	2,211	2,264	2,351	0
Processing Services	13	0	13	13	13	13	13	13	0
Turnkey Systems	35	8	37	40	42	45	48	52	7
Application Software Products	19	0	19	19	19	19	19	19	0
Professional Services	153	-4	146	141	134	127	121	114	-5
Network Services	36	15	41	46	52	57	64	70	11
Systems Operations	93	50	139	193	259	339	432	544	31
Systems Integration	332	14	378	425	471	525	584	651	11
Industry Sectors Total	677	15	777	876	989	1,122	1,282	1,461	13

Exhibit A-72

Industry Sectors, Business Services, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					ECU Million				
Equipment Sales	73	0	73	73	73	73	73	73	0
Equipment Services	42	3	44	45	46	46	48	49	2
Software Products	76	12	85	96	106	120	133	149	12
Other Information Services	186	7	199	212	226	239	259	279	7
Data Communications	29	9	32	33	35	36	37	39	4
Facilities/ Administration	64	-2	62	61	60	60	60	60	-1
In-house Staff	126	-5	120	113	106	100	100	100	-4
IT Budget Total	596	3	615	633	652	673	709	748	4
Processing Services	4	0	4	4	4	4	4	4	0
Turnkey Systems	118	15	135	155	179	206	236	272	15
Application Software Products	29	14	33	37	41	45	49	53	10
Professional Services	114	1	116	117	117	117	117	117	0
Network Services	15	18	17	20	24	28	33	39	17
Systems Operations	8	17	9	11	12	12	12	12	5
Systems Integration	7	0	7	7	7	7	7	7	0
Industry Sectors Total	292	9	319	352	385	418	458	505	10

Exhibit A-73

Industry Sectors, Other Industries, United Kingdom

Sector	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
					ECU Million				
Equipment Sales	126	-16	106	93	86	80	73	66	-9
Equipment Services	68	-14	58	53	50	46	44	41	-7
Software Products	77	-3	74	73	76	77	80	81	2
Other Information Services	60	-9	54	54	60	65	62	68	4
Data Communications	48	-8	44	41	41	41	41	41	-1
Facilities/ Administration	93	-21	73	60	53	46	40	33	-15
In-house Staff	193	-21	153	126	113	100	86	80	-12
IT Budget Total	664	-15	563	501	479	456	426	410	-6
Processing Services	8	-17	7	7	7	7	7	7	0
Turnkey Systems	15	-9	13	12	12	12	12	12	-2
Application Software Products	49	0	49	50	53	56	58	61	4
Professional Services	4	0	4	4	4	4	4	4	0
Network Services	15	-9	13	13	13	13	13	13	0
Systems Operations	5	25	7	8	9	11	12	13	15
Systems Integration	1	0	1	1	1	1	1	1	0
Industry Sectors Total	100	-7	93	93	100	106	106	113	4

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Cross-Industry Sectors in ECUs

Exhibit A-74

Information Services Market by Cross-Industry Sectors, United Kingdom

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Accounting	153	9	166	179	193	212	232	252	9
Education & Training	33	0	33	33	33	33	33	33	0
Engineering & Scientific	53	0	53	53	60	66	73	73	7
Human Resources	73	0	73	73	73	80	80	86	3
Office Systems	153	4	159	179	193	212	226	246	9
Planning & Analysis	86	0	86	93	100	113	120	126	8
Other Cross-Industry	93	0	93	100	100	106	120	126	6
Cross-Industry Sectors Total	637	5	671	704	750	823	883	943	7

Exhibit A-54

Cross-Industry Sectors, Accounting, United Kingdom

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	3	0	3	3	3	3	3	3	0
Turnkey Systems	62	4	65	68	72	78	85	92	7
Application Software Products	86	11	96	106	117	131	142	155	10
Cross-Industry Sectors Total	153	9	166	179	193	212	232	252	9

Exhibit A-76

Cross-Industry Sectors, Education & Training, United Kingdom

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	1	0	1	1	1	1	1	1	0
Turnkey Systems	25	-5	24	24	24	25	27	28	3
Application Software Products	8	-17	7	5	5	5	5	5	-4
Cross-Industry Sectors Total	33	0	33	33	33	33	33	33	0

Exhibit A-77

Cross-Industry Sectors, Engineering & Scientific, United Kingdom

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	3	0	3	3	3	3	3	3	0
Turnkey Systems	24	0	24	25	27	29	31	32	6
Application Software Products	24	6	25	28	31	35	37	40	10
Cross-Industry Sectors Total	53	0	53	53	60	66	73	73	7

Exhibit A-78

Cross-Industry Sectors, Human Resources, United Kingdom

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	35	-4	33	31	28	28	28	28	-3
Turnkey Systems	12	0	12	12	12	13	15	16	6
Application Software Products	24	11	27	29	32	36	39	42	10
Cross-Industry Sectors Total	73	0	73	73	73	80	80	86	3

Exhibit A-79

Cross-Industry Sectors, Office Systems, United Kingdom

Sector	ECU Million								
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	1	0	1	1	1	1	1	1	0
Turnkey Systems	62	4	65	68	70	76	80	85	5
Application Software Products	86	11	96	108	118	133	143	157	10
Cross-Industry Sectors Total	153	4	159	179	193	212	226	246	9

Exhibit A-80

Cross-Industry Sectors, Planning & Analysis, United Kingdom

Sector	ECU Million							
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	4	0	4	4	4	4	4	4	0
Turnkey Systems	5	0	5	5	5	5	5	5	0
Application Software Products	74	7	80	86	93	102	110	120	8
Cross-Industry Sectors Total	86	0	86	93	100	113	120	126	8

Exhibit A-81

Other Cross-Industry, United Kingdom

Sector	ECU Million							
	1993	93-94 (%)	1994	1995	1996	1997	1998	1999	94-99 CAGR (%)
Transaction Processing	12	0	12	11	11	11	11	11	-2
Turnkey Systems	61	2	62	64	65	69	74	80	5
Application Software Products	20	7	21	24	27	29	32	35	10
Cross-Industry Sectors Total	93	0	93	100	100	106	120	126	6

M
Information Services Forecast Reconciliation in Local Currency

Exhibit A-82

Forecast Reconciliation, United Kingdom, 1993-1998

Currency: PS Millions	1993 Market				1998 Market				1993	1994
	1993 Report	1994 Report	1993-1994 Variance		1993 Report	1994 Report	1993-1994 Variance		Report %CAGR	Report %CAGR
Delivery Mode	(Fcst)	(Act)	(Amount)	(%)	(Fcst)	(Fcst)	(Amount)	(%)	(Fcst)	(Fcst)
Software and Services Total (ex Equipment Services)	7,650	7,900	250	3	12,550	12,000	-550	-4	10	9
Professional Services	1,850	1,930	80	4	1,780	2,080	300	17	-1	2
- IS Consulting	435	410	-25	-6	630	660	30	5	8	10
- Education & Training	195	195	0	0	240	215	-25	-10	4	2
- Custom Software	1,190	1,290	100	8	720	1,080	360	50	-10	-3
- Application Management	35	35	0	0	195	125	-70	-36	41	29
Systems Integration	735	775	40	5	1,990	1,335	-655	-33	22	11
- Equipment	200	200	0	0	410	310	-100	-24	15	9
- Application Software	130	130	0	0	715	395	-320	-45	41	25
- System Software	60	60	0	0	140	85	-55	-39	18	7
- Professional Services	330	370	40	12	665	515	-150	-23	15	7
- Other	15	15	0	0	58	28	-30	-52	31	13
Systems Operations	585	590	5	1	1,565	1,635	70	4	22	23
- Platform Operations	310	150	-160	-52	700	340	-360	-51	18	18
- Application Operations	210	375	165	79	680	1,080	400	59	26	24
- Desktop Services	65	65	0	0	190	215	25	13	24	27
Processing Services	530	530	0	0	785	680	-105	-13	8	5
- Transaction Processing	405	410	5	1	475	460	-15	-3	3	2
- Utility Processing	15	15	0	0	15	15	0	0	0	0
- Other Processing	110	110	0	0	295	205	-90	-31	22	13
Network Services	850	870	20	2	1,830	1,760	-70	-4	17	15
- Electronic Info Svcs	550	580	30	5	670	980	310	46	4	11
- Network Applications	225	215	-10	-4	915	630	-285	-31	32	24
- Network Management	75	75	0	0	245	150	-95	-39	27	15
System Software	1,150	1,190	40	3	1,650	1,450	-200	-12	7	4
- Mainframe	485	525	40	8	345	410	65	19	-7	-5
- Minicomputer	360	365	5	1	510	500	-10	-2	7	6
- Workstation/PC	305	300	-5	-2	795	540	-255	-32	21	12
Application Software	690	730	40	6	1,150	1,270	120	10	11	12
- Mainframe	60	65	5	8	45	50	5	11	-6	-5
- Minicomputer	180	205	25	14	250	290	40	16	7	7
- Workstation/PC	450	460	10	2	855	930	75	9	14	15
Turnkey Systems	1,270	1,290	20	2	1,780	1,740	-40	-2	7	6
- Equipment	660	650	-10	-2	845	840	-5	-1	5	5
- Application Software	290	210	-80	-28	450	300	-150	-33	9	7
- System Software	16	110	94	588	21	155	134	638	6	7
- Professional Services	305	320	15	5	470	450	-20	-4	9	7
Equipment Services	2,450	2,390	-60	-2	2,560	2,240	-320	-13	1	-1
- Equipment Maintenance	1,600	1,540	-60	-4	1,480	1,120	-360	-24	-2	-6
- Environmental Services	850	850	0	0	1,080	1,120	40	4	5	6
Grand Total Information Services	10,100	10,300	200	2	15,100	14,200	-900	-6	8	7

B
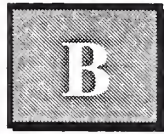
Economic Assumptions

A
European Exchange Rates

The following table, Exhibit B-1, shows the standard exchange rates used throughout the 1994 programme to consolidate country market data for overall European forecasts and vendor market shares.

Exhibit B-1

US Dollar and ECU Exchange Rates 1994

Country	Currency	US Dollar	ECU
Europe	$	1	1.266
France	FF	5.90	6.59
Germany	DM	1.74	1.94
United Kingdom	PS	0.676	0.753
Italy	Lira (K)	1.71	1.90
Sweden	Sek	8.34	9.32
Denmark	DK	6.79	7.56
Norway	NK	7.52	8.39
Finland	FM	5.79	6.35
Netherlands	Dfl	1.94	2.17
Belgium	BF	36.15	40.41
Switzerland	SF	1.39	1.65
Austria	Sch	12.19	13.82
Spain	Ptas	142.92	159.30
Ireland	IP	0.71	0.791
Portugal	Esc	176.7	197.10
Greece	Dra	249.35	280.00

Source: Financial Times January 1994

B

European Inflation Rates

Exhibit B-2 shows the average five-year inflation assumptions for each reported country and the changes from those used in reports produced in the previous year. All INPUT forecasts include the effects of inflation as well as natural market growth rates. For consistency, the same inflation rates are used throughout all the different market sector research and analysis during a calendar year, unless specified otherwise.

Exhibit B-2

Inflation Assumptions 1993 and 1994

Country	Assumption 1993-1998	Assumption 1994-1999	Change
France	2.3	1.9	-0.4
Germany	4.0	2.9	-1.1
United Kingdom	2.0	3.0	1.0
Italy	3.8	3.2	-0.6
Sweden	2.3	2.0	-0.3
Denmark	1.6	2.6	1.0
Norway	2.2	1.5	-0.7
Finland	0.2	2.0	1.8
Netherlands	1.9	2.0	0.1
Belgium	3.0	2.2	-0.8
Switzerland	2.3	1.7	-0.6
Austria	3.8	2.8	-1.0
Spain	4.5	3.4	-1.1
Portugal	5.8	4.8	-1.0
Greece	13.2	11.2	-2.0
Ireland	2.7	3.3	0.6
Eastern Europe	-	-	-
European Average	3.1	2.8	-0.3

Source: OECD December 1993

The economic growth measurements and predictions from the OECD, referred to in the text for each country, are listed in Exhibit B-3.

Exhibit B-3

GDP Growth Rate Assumptions;

Country	1992 (%)	1993 (%)	1994 (%) Forecast	1995 (%) Forecast
Austria	1.6	-0.3	1.8	2.7
Belgium	1.4	-1.3	1.5	2.6
Denmark	1.2	1.2	4.0	3.5
Finland	-3.8	-2.6	1.9	4.7
France	1.2	-0.9	1.8	2.9
Germany	2.1	-1.3	1.8	2.6
Greece	0.9	-0.1	1.0	1.6
Ireland	4.9	2.3	4.1	4.5
Italy	0.7	-0.7	1.5	2.6
Netherlands	1.4	0.2	1.4	2.8
Norway	3.4	2.2	4.3	2.9
Portugal	1.1	-0.5	1.2	2.3
Spain	0.8	-1.0	1.2	2.7
Sweden	-1.9	-2.1	2.7	2.9
Switzerland	-0.1	-0.6	1.5	2.5
United Kingdom	-0.6	1.9	2.8	3.2
EC	1.0	-0.4	1.9	2.8

Source: OECD 1994
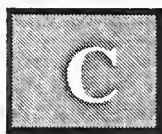
Definition of Terms

A
Introduction

INPUT's *Definition of Terms* provides the framework for all of INPUT's market analyses and forecasts of the information services industry. The structure is defined in Exhibit C-1.

One of the strengths of INPUT's market analysis services is the consistency of the underlying market sizing and forecast data. Each year INPUT reviews its industry structure and makes changes if they are required. When changes are made they are carefully documented and the new definitions and forecasts reconciled to the prior definitions and forecasts. INPUT clients have the benefit of being able to track market forecast data from year to year against a proven and consistent foundation of definitions.

B
Overall Definitions and Analytical Framework

1. Information Services

Information Services are computer/telecommunications-related products and services that are oriented toward the development or use of information systems. Information services typically involve one or more of the following:

- Use of vendor-provided computer processing services to develop or run applications or provide services such as disaster recovery or data entry (called *Processing Services*)

- A combination of computer equipment, packaged software and associated support services which will meet an application systems need (called *Turnkey Systems*)

- Packaged software products, including systems software or applications software products (called *Software Products*)

- People services that support users in developing and operating their own information systems (called *Professional Services*)

- The combination of products (software and equipment) and services where the vendor assumes total responsibility for the development of a custom integrated solution to an information systems need (called *Systems Integration*)

- Services that provide operation and management of all or a significant part of a user's information systems functions under a long-term contract (called *Systems Operations*)

- Services that support the delivery of information in electronic form — typically network-oriented services such as value-added networks, electronic mail and document interchange (called *Network Applications*)

- Services that support the access and use of public and proprietary information such as on-line databases and news services (called *Electronic Information Services*)

- Services that support the operation of computer and digital communication equipment (called *Equipment Services*).

In general, the market for information services does not involve providing equipment to users. The exception is where the equipment is part of an overall service offering such as a turnkey system, a systems operations contract or a systems integration project.

The information services market also excludes pure data transport services (i.e., data or voice communications circuits). However, where information transport is associated with a network-based service (e.g., electronic data interchange services), or cannot be feasibly separated from other bundled services (e.g., some systems operations contracts), the transport costs are included as part of the services market.

The analytical framework of the information services industry consists of the following interacting factors: overall and industry-specific business environment (trends, events and issues); technology environment; user information system requirements; size and structure of information services markets; vendors and their products, services and revenues; distribution channels; and competitive issues.

2. Market Forecasts/User Expenditures

All information services market forecasts are estimates of *User Expenditures* for information services. When questions arise about the proper place to count these expenditures, INPUT addresses them from the user's viewpoint: expenditures are categorised according to what users perceive they are buying.

By focusing on user expenditures, INPUT avoids two problems which are related to the distribution channels for various categories of services:

- Double-counting, which can occur by estimating total vendor revenues when there is significant reselling within the industry (e.g., software sales to turnkey vendors for repackaging and resale to end users)

- Missed counting, which can occur when sales to end users go through indirect channels such as mail order retailers.

Captive Information Services User Expenditures are expenditures for products and services provided by a vendor that is part of the same parent corporation as the user. These expenditures are not included in INPUT forecasts.

Noncaptive Information Services User Expenditures are expenditures that go to vendors that have a different parent corporation than the user. It is these expenditures which constitute the information services market analysed by INPUT and that are included in INPUT forecasts.

3. Delivery Modes

Delivery Modes are defined as specific products and services that satisfy a given user need. While *Market Sectors* specify *who* the buyer is, *Delivery Modes* specify *what* the user is buying.

Of the nine delivery modes defined by INPUT, six are considered primary products or services:

- Processing Services

- Network Services

- Professional Services

- Applications Software Products

- Systems Software Products

- Equipment Services.

The remaining three delivery modes represent combinations of these products and services, combined with equipment, management and/or other services:

- Turnkey Systems

- Systems Operations

- Systems Integration.

Section C describes the delivery modes and their structure in more detail.

4. Market Sectors

Market Sectors or markets are groupings or categories of the buyers of information services. There are three types of user markets:

- *Vertical Industry* markets, such as Banking, Transportation, Utilities, etc. These are called "industry-specific" markets.

- *Functional Application* markets, such as Human Resources, Accounting, etc. These are called "cross-industry" markets.

- *Other* markets, which are neither industry- nor application-specific, such as the market for systems software products and much of the on-line database market.

Specific market sectors used by INPUT are defined in Section E, below.

5. Trading Communities

Information technology is playing a major role in re-engineering, not just companies but the value chain or *Trading Communities* in which these companies operate. This reengineering is resulting in electronic commerce emerging where interorganisational electronic systems facilitate the business processes of the trading community.

- A trading community is the group or organisations — commercial and noncommercial — involved in producing goods or services

- Electronic commerce and trading communities are addressed in INPUT's EDI and Electronic Commerce Program.

6.   Outsourcing

Over the past few years a major change has occurred in the way clients are buying some information services. The shift has been labelled *outsourcing*.
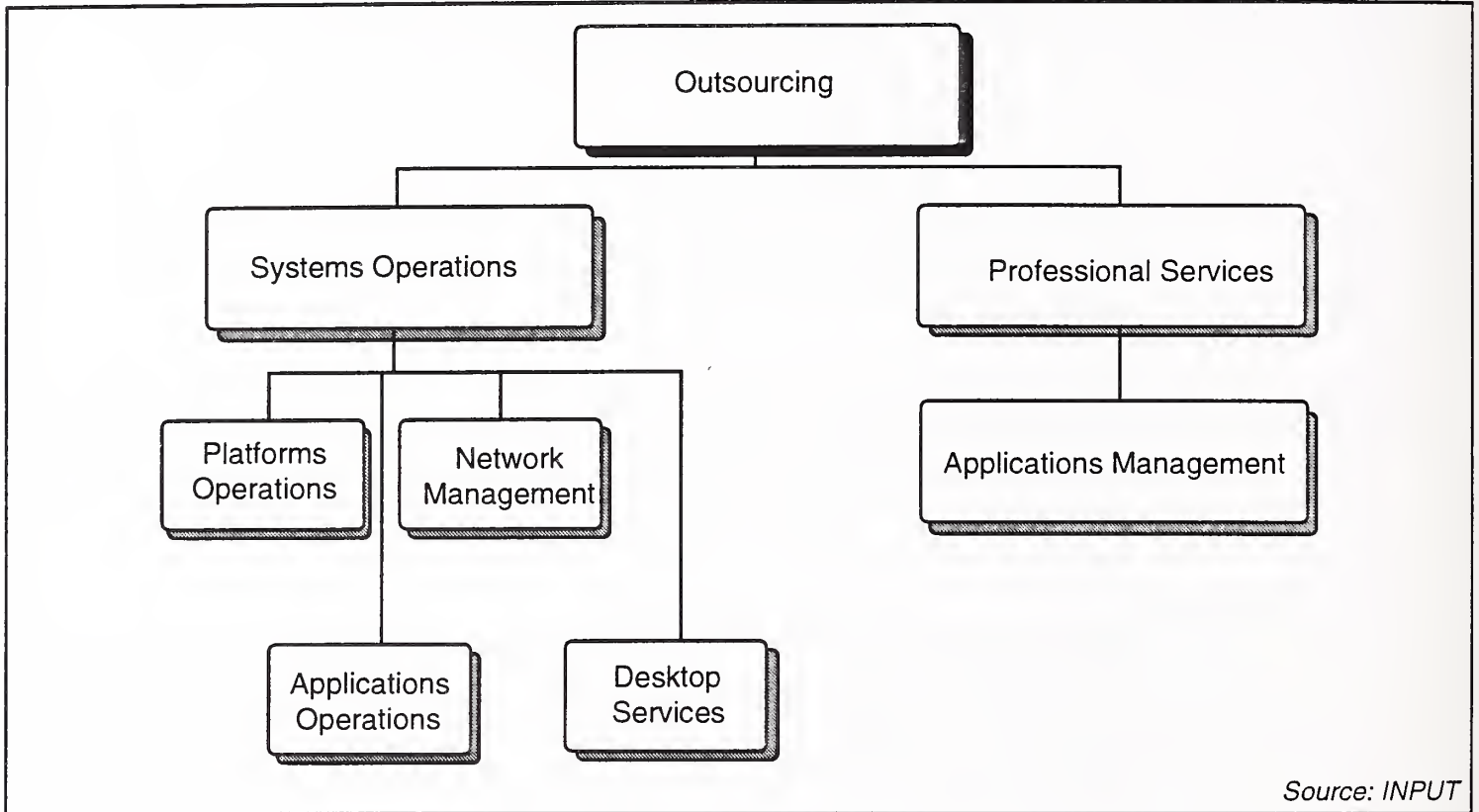
INPUT views outsourcing as a change in the form of the client/vendor relationship. Under an outsourcing relationship, all or a major portion of the information systems function is contracted to a vendor in a long-term relationship. The vendor is responsible for the performance of the function.

INPUT considers the following submodes to be outsourcing-type relationships and in aggregate to represent the outsourcing market. See Exhibit C-1. Complete definitions are provided in Section C of this document. INPUT provides these forecasts as part of the corresponding delivery modes.

- *Platform Systems Operations* — The vendor is responsible for managing and operating the client's computer systems.

- *Applications System Operations* — The vendor is responsible for developing and/or maintaining a client's applications as well as operating the computer systems.

- *Network Management* — The vendor assumes full responsibility for operating and managing the client's data communications systems. This may also include the voice communications of the client.

Exhibit C-1

Outsourcing Components INPUT's View

```
                        ┌─────────────────────┐
                        │     Outsourcing     │
                        └─────────────────────┘
              ┌───────────────────┴───────────────────┐
   ┌─────────────────────┐              ┌─────────────────────┐
   │  Systems Operations │              │ Professional Services│
   └─────────────────────┘              └─────────────────────┘
      ┌───────┼───────┐                            │
┌───────────┐ ┌───────────┐           ┌─────────────────────────┐
│ Platforms │ │  Network  │           │ Applications Management │
│ Operations│ │ Management│           └─────────────────────────┘
└───────────┘ └───────────┘
  ┌───────────┐   ┌───────────┐
  │Applications│  │  Desktop  │
  │ Operations │  │  Services │
  └───────────┘   └───────────┘
```

Source: INPUT

- *Applications Management/Maintenance* — The professional services vendor has full responsibility for developing and/or maintaining some or all of the applications systems that a client uses to support business operations. The services are provided on a long-term contractual basis.

- *Desktop Services* — The vendor assumes responsibility for the deployment, maintenance and connectivity between the personal computers and/or intelligent workstations in the client organisation. The services may also include performing the help-desk function. The services are provided on a long-term contractual basis.

C
Delivery Modes and Submodes

Exhibit C-2 provides the overall structure of the information services industry as defined and used by INPUT. This section of *Definition of Terms* provides definitions for each of the delivery modes and their submodes or components.

1. Software Products

INPUT divides the software products market into two delivery modes: systems software and applications software.

The two delivery modes have many similarities. Both involve purchases of software packages for in-house computer systems. Included are both lease and purchase expenditures, as well as expenditures for work performed by the vendor to implement or maintain the package at the user's sites. Vendor-provided training or support in operation and use of the package, if part of the software pricing, is also included here.

Expenditures for work performed by organisations other than the package vendor are counted in the professional services delivery mode. Fees for work related to education, consulting, and/or custom modification of software products are also counted as professional services, provided such fees are charged separately from the price of the software product itself.

a. Systems Software Products

Systems software products enable the computer/communications system to perform basic machine-oriented or user interface functions. INPUT divides systems software products into three submodes. See Exhibit C-3.

- *Systems Control Products* — Software programs that manage computer system resources and control the execution of programs. These products include operating systems, emulators, network control, library control, windowing, access control and spoolers.

- *Operations Management Tools* — Software programs used by operations personnel to manage the computer system and/or network resources and personnel more effectively. Included are performance measurement, job accounting, computer operation scheduling, disk management utilities and capacity management.

- *Applications Development Tools* — Software programs used to prepare applications for execution by assisting in designing, programming, testing, and related functions. Included are traditional programming languages, 4GLs, data dictionaries, database management systems, report writers, project control systems, CASE systems and other development productivity aids.

Exhibit C-2

Information Services Industry Structure

System Software Products	Applications Software Products	Turnkey Systems	Equipment Services	Professional Services
- Mainframe	- Mainframe	- Equipment	- Equipment Maintenance	- Consulting
- Minicomputer	-Minicomputer	- Software Products	- Environmental Services	- Education & Training
- Workstation/PC	- Workstation/PC	- Professional Services		- Software Development/ Maintenance
				- Application Management/ Maintenance

Systems Integration	Systems Operations	Processing Services	Network Services
- Equipment	- Platform Operation	- Transaction	- Electronic Information Services
- Software Products	- Application Operations	- Utility	
- Professional Services		- Other	- Network Applications
- Other	- Desktop Services		
	- Network Management		

Source: INPUT

Exhibit C-3

Systems Software Products Market Structure

```
                        ┌──────────────────────┐
                        │      Systems         │
                        │      Software        │
                        └──────────────────────┘
```

Systems Control	Data Center Management	Applications Development Tools

Systems Control
- Access Control
- Communications Monitors
- Micro-Mainframe Links
- Network Control
- Operating Systems
- Security Systems
- System Library Control
- Windowing Systems
- Other

Data Center Management
- Capacity Management
- Computer Operations Scheduling
- Data Center Management
- Disk Management
- Downtime/Repair Monitoring Management
- Job Accounting
- Performance Monitors
- Tape Management
- Utilities
- Other

Applications Development Tools

Program Development and Production Tools
- Applications Generators
- Assemblers
- Automatic Documentation
- Configuration Management
- Debugging Aids
- Languages (All Generations)
- Systems Development Control
- Retrieval Systems
- Translators
- 4GL
- I-CASE
- Other

Database Management Systems
- Database Management Systems
- Data Dictionaries
- Other

Source: INPUT

INPUT also forecasts the systems software products delivery mode by platform level: mainframe, minicomputer and workstation/PC.
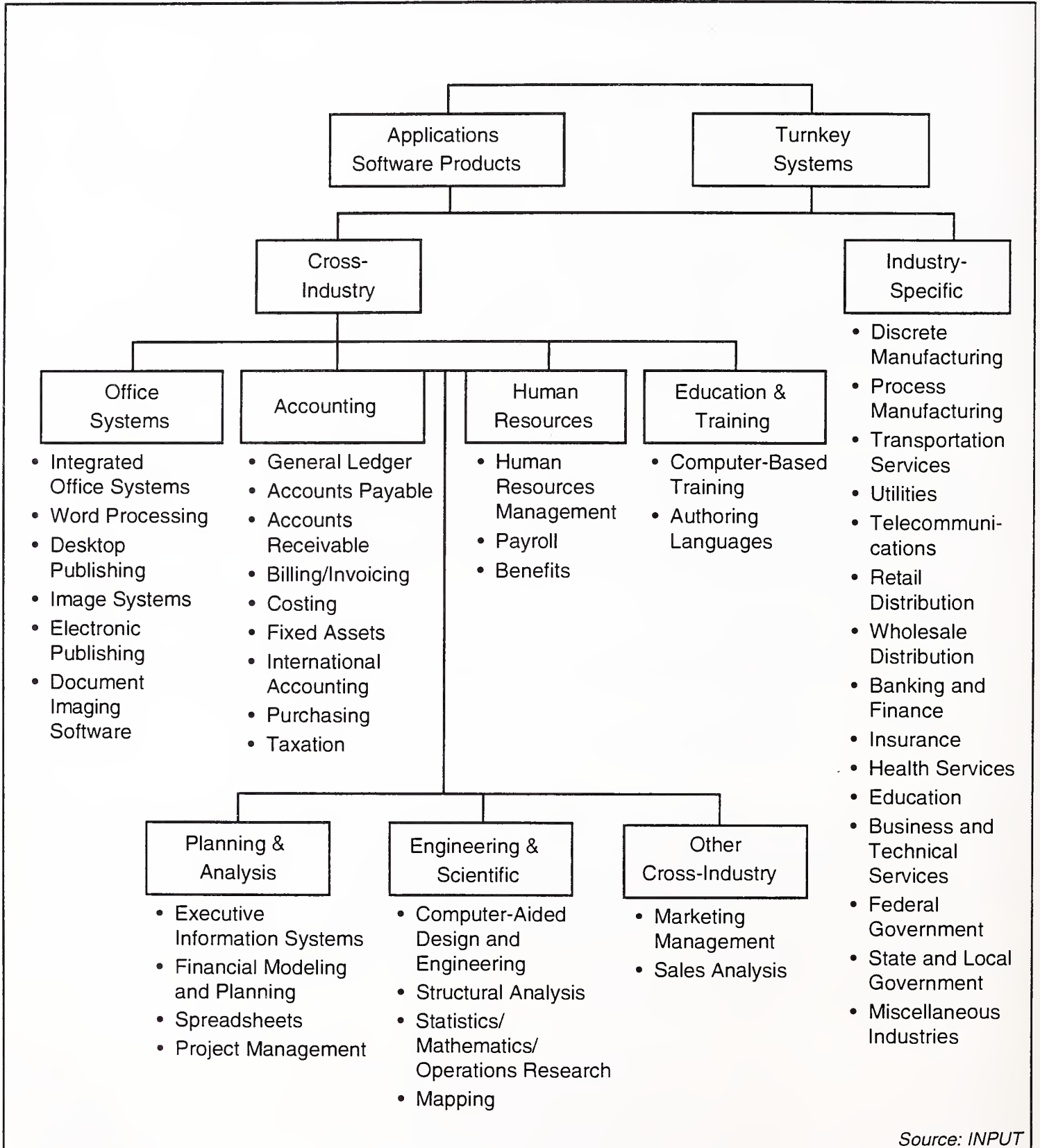
b. Applications Software Products

Applications software products enable a user or group of users to support an operational or administrative process within an organisation. Examples include accounts payable, order entry, project management and office systems. INPUT categorises applications software products into two groups of market sectors. (See Exhibit C-4)

- *Industry Applications Software Products* — Software products that perform functions related to fulfilling business or organisational needs unique to a specific industry (vertical) market and sold to that market only. Examples include demand deposit accounting, MRPII, medical record keeping, automobile dealer parts inventory, etc.

- *Cross-Industry Applications Software Products* — Software products that perform a specific function that is applicable to a wide range of industry sectors. Examples include payroll and human resource systems, accounting systems, word processing and graphics systems, spreadsheets, etc.

INPUT also forecasts the applications software products delivery mode by platform level: mainframe, minicomputer and workstation/PC.

2. Turnkey Systems

A turnkey system is an integration of equipment (CPU, peripherals, etc.), systems software, and packaged applications software into a single product developed to meet a specific set of user requirements. Value added by the turnkey system vendor is primarily in the software and professional services provided. INPUT categorises turnkey systems into two groups of market sectors as it does for applications software products. (See Exhibit C-4)

Most CAD/CAM systems and many small business systems are turnkey systems. Turnkey systems utilise standard computers and do not include specialised hardware such as word processors, cash registers, process control systems or embedded computer systems for military applications.

Exhibit C-4

Application Products and Turnkey Systems

```
                    ┌──────────────────┐      ┌──────────────────┐
                    │   Applications   │      │     Turnkey      │
                    │ Software Products│      │     Systems      │
                    └──────────────────┘      └──────────────────┘
                            │                          │
                    ┌──────────────┐          ┌──────────────┐
                    │    Cross-    │          │   Industry-  │
                    │   Industry   │          │   Specific   │
                    └──────────────┘          └──────────────┘
```

Office Systems	Accounting	Human Resources	Education & Training	Industry-Specific
• Integrated Office Systems	• General Ledger	• Human Resources Management	• Computer-Based Training	• Discrete Manufacturing
• Word Processing	• Accounts Payable	• Payroll	• Authoring Languages	• Process Manufacturing
• Desktop Publishing	• Accounts Receivable	• Benefits		• Transportation Services
• Image Systems	• Billing/Invoicing			• Utilities
• Electronic Publishing	• Costing			• Telecommuni- cations
• Document Imaging Software	• Fixed Assets			• Retail Distribution
	• International Accounting			• Wholesale Distribution
	• Purchasing			• Banking and Finance
	• Taxation			• Insurance
				• Health Services
				• Education
				• Business and Technical Services
				• Federal Government
				• State and Local Government
				• Miscellaneous Industries

Planning & Analysis	Engineering & Scientific	Other Cross-Industry
• Executive Information Systems	• Computer-Aided Design and Engineering	• Marketing Management
• Financial Modeling and Planning	• Structural Analysis	• Sales Analysis
• Spreadsheets	• Statistics/ Mathematics/ Operations Research	
• Project Management	• Mapping	

Source: INPUT

Computer manufacturers (e.g., IBM or DEC) that combine software with their own general-purpose hardware are not classified by INPUT as turnkey vendors. Their software revenues are included in the appropriate software category.

Most turnkey systems are sold through channels known as value-added resellers.

- *Value-Added Reseller (VAR):* A VAR adds value to computer hardware and/or software and then resells it to an end user. The major value added is usually applications software for a vertical or cross-industry market, but also includes many of the other components of a turnkey systems solution, such as professional services, software support, and applications upgrades.

Turnkey systems have three components:

- Equipment — computer hardware supplied as part of the turnkey system

- Software products — pre-packaged systems and applications software products

- Professional services — services to install or customise the system or train the user, provided as part of the turnkey system sale.

Exhibit C-5 contrasts turnkey systems with systems integration. Turnkey systems are based on available software products that a vendor may modify to a modest degree.

Exhibit C-5

The Customisation Spectrum

Systems Integration	Custom Turnkey	Turnkey
Degree of Customisation		

100%   50%   25%   0%

Source: INPUT
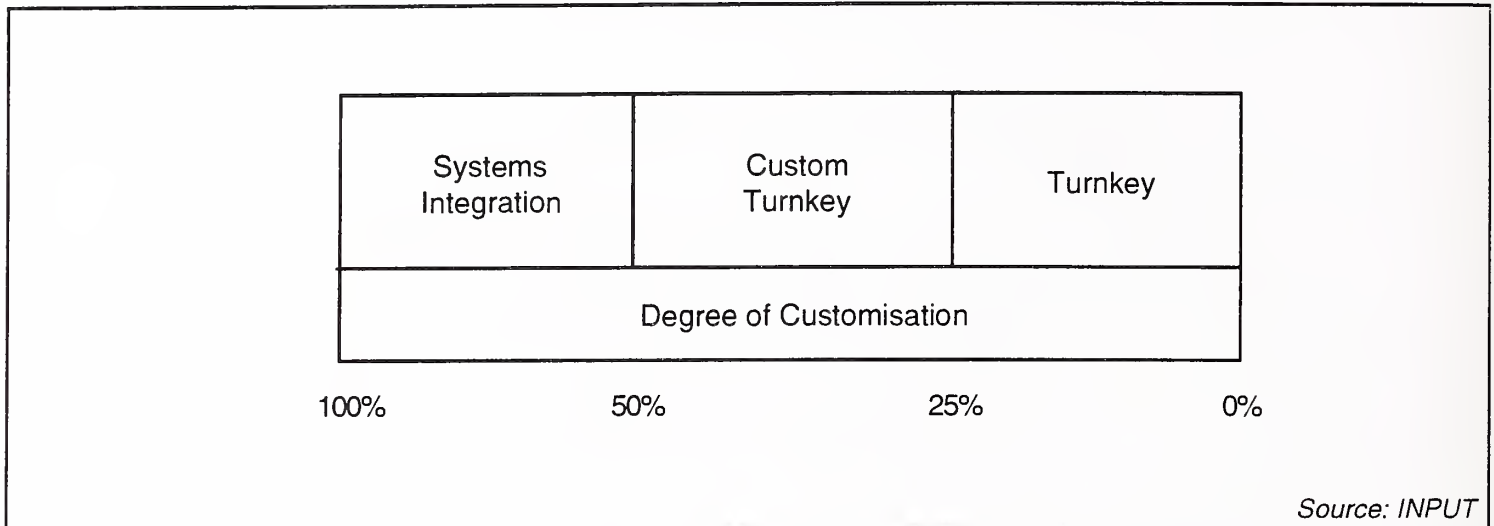
Exhibit C-6

Processing Services Market Structure

Processing Services

Transaction Processing

Utility Processing

Other Processing Services

Source: INPUT
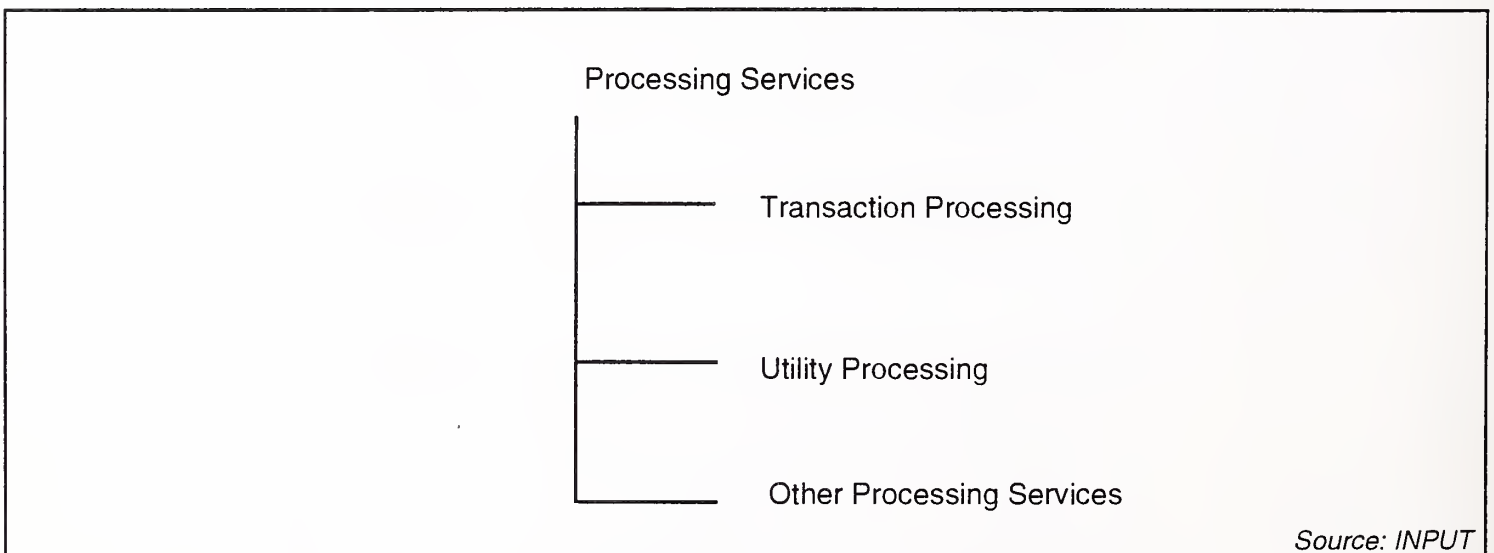
3. Processing Services

This delivery mode includes three submodes: transaction processing, utility processing, and "other" processing services. (See Exhibit C-6)

- *Transaction Processing* — Client uses vendor-provided information systems — including hardware, software and/or data networks — at the vendor site or customer site to process specific applications and update client databases. The application software is typically provided by the vendor.

- *Utility Processing* — Vendor provides basic software tools (language compilers, assemblers, DBMSs, graphics packages, mathematical models, scientific library routines, etc.), enabling clients to develop and/or operate their own programs or process data on the vendor's system.

- *Other Processing Services* — Vendor provides service — usually at the vendor site — such as scanning and other data entry services, laser printing, computer output microfilm (COM), CD preparation and other data output services, backup and disaster recovery, etc.

4. Systems Operations

Systems operations as a delivery mode was introduced in the 1990 Market Analysis and Systems Operations programs. Previously called Facilities Management, this delivery mode was created by taking the Systems Operations submode out of both Processing Services and Professional Services. For 1992 the submodes have been defined as follows.

Systems operations involves the operation and management of all or a significant part of the client's information systems functions under a long-term contract. These services can be provided in either of four distinct submodes where the difference is whether the support of applications, as well as data center operations, is included.

- *Platform systems operations* — The vendor manages and operates the computer systems, to perform the client's business functions, without taking responsibility for the client's application systems.

- *Applications systems operations* — The vendor manages and operates the computer systems to perform the client's business functions, and is also responsible for maintaining, or developing and maintaining, the client's application systems.

- *Network Management* — The vendor assumes responsibility for operating and managing the client's data communications systems. This may also include the voice communications of the client. A network management outsourcing contract may include only the management services or the full costs of the communications services and equipment plus the management services.

- *Desktop Services* — The vendor assumes responsibility for the deployment, maintenance and connectivity among the personal computers and/or workstations in the client organisation. The services may also include performing the help-desk function. Equipment as well as services can be part of a desktop services outsourcing contract.

Note: This type of client service can also be provided through traditional professional services where the contractual criteria of outsourcing are not present.

Systems operations vendors now provide a wide variety of services in support of existing information systems. The vendor can plan, control, provide, operate, maintain and manage any or all components of the client's information systems environment (equipment, networks, applications systems), either at the client's site or the vendor's site.

Note: In the federal government market, systems operation services are also defined by equipment ownership with the terms "COCO" (Contractor-Owned, Contractor-Operated), and "GOCO" (Government-Owned, Contractor-Operated).

5. Systems Integration (SI)

Systems integration is a vendor service that provides a complete solution to an information system, networking or automation development requirement through the custom selection and implementation of a variety of information system products and services. A systems integrator is responsible for the overall management of a systems integration contract and is the single point of contact and responsibility to the buyer for the delivery of the specified system function, on schedule and at the contracted price. (Refer to Exhibit C-7)

The components of a systems integration project are the following:

- *Equipment* — information processing and communications equipment required to build the systems solution. This component may include custom as well as off-the-shelf equipment to meet the unique needs of the project. The systems integration equipment category excludes turnkey systems by definition

- *Software products* — pre-packaged applications and systems software products

- *Professional services* — the value-added component that adapts the equipment and develops, assembles, or modifies the software and hardware to meet the system's requirements. It includes all of the professional services activities required to develop, implement, and if included in the contract, operate an information system, including consulting, program/project management, design and integration, software development, education and training, documentation, and systems operations and maintenance

- *Other services* — most systems integration contracts include other services and product expenditures that are not classified elsewhere. This category includes miscellaneous items such as engineering services, automation equipment, computer supplies, business support services and supplies, and other items required for a smooth development effort.

Exhibit C-7

Products/Services in Systems Integration Projects

Equipment
- Information systems
- Communications

Software Products
- Systems software
- Applications software

Professional Services
- Consulting
  - Feasibility and trade-off studies
  - Selection of equipment, network and software
- Program/project management
- Design/integration
  - Systems design
  - Installation of equipment, network, and software
  - Demonstration and testing
- Software development
  - Modification of software packages
  - Modification of existing software
  - Custom development of software
- Education/training and documentation
- Systems operations/maintenance

Other Miscellaneous Products/Services
- Site preparation
- Data processing supplies
- Processing/network services
- Data/voice communication services

Source: INPUT

6. Professional Services

This category includes four submodes: consulting, education and training, software development and applications management. Exhibit C-8 provides additional detail.

- *Consulting:* Services include management consulting (related to information systems), information systems reengineering, information systems consulting, feasibility analysis and cost-effectiveness studies and project management assistance. Services may be related to any aspect of the information system, including equipment, software, networks and systems operations.

- *Education and Training:* Services that provide training and education or the development of training materials related to information systems and services for the information systems professional and the user, including computer-aided instruction, computer-based education and vendor instruction of user personnel in operations, design, programming, and documentation. Education and training provided by school systems is not included. General education and training products are included as a cross-industry market sector.

- *Software Development:* Services include user requirements definition, systems design, contract programming, documentation, and implementation of software performed on a custom basis. Conversion and maintenance services are also included.

- *Applications Management*: The vendor has full responsibility for maintaining and upgrading some or all of the application systems that a client uses to support business operations and may develop and implement new application systems for the client.

An applications management contract differs from traditional software development in the form of the client/vendor relationship. Under traditional software development services the relationship is project based. Under applications management it is time and function based.

These services may be provided in combination or separately from platform systems operations.

Exhibit C-8
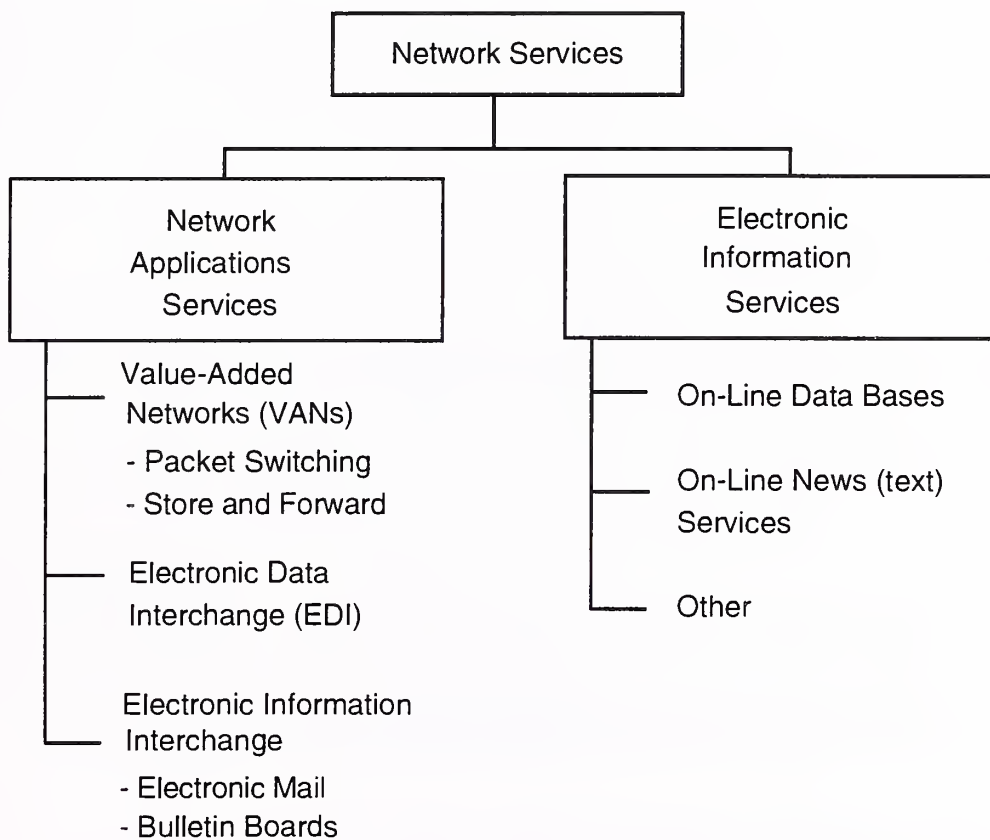
Professional Services Market Structure

Professional Services

Applications Management**

- Applications Maintenance
- Application Development
- Application Support

Software Development/ Maintenance

- User Requirements Definition
- Systems Design
- System Conversion
- Data Base Design
- Programming
- Testing
- System Modification
- Documentation/ Technical Writing
- Network Development
- Other

Consulting*

- Installation Planning
- Network Planning and Design
- Information Systems Audit
- IS Planning
- IS Security/Audit
- System Evaluation
- Systems Evaluation
- IS Personnel Planning
- Systems Analysis
- IS Policies and Procedures Development
- Project Management
- Other

Education & Training*

- Computer Operations Training
- IS Management Training
- Analyst/ Programmer Training
- Systems Use Training
- Video Instruction
- Other

*Related to computer systems, topics, or issues

**Vendor assumes full responsibility on contracted longer term basis

Source: INPUT

7. Network Services

Network services are a variety of telecommunications-based functions and operations. Network service includes two submodes, as shown in Exhibit C-9.

Exhibit C-9

Network Services Market Structure

```
                        ┌──────────────────┐
                        │ Network Services │
                        └──────────────────┘
                                 │
              ┌──────────────────┴──────────────────┐
     ┌────────────────┐                   ┌────────────────┐
     │    Network     │                   │   Electronic   │
     │  Applications  │                   │  Information   │
     │    Services    │                   │    Services    │
     └────────────────┘                   └────────────────┘
       │                                    │
       ├─ Value-Added                       ├─ On-Line Data Bases
       │  Networks (VANs)                   │
       │  - Packet Switching                ├─ On-Line News (text)
       │  - Store and Forward               │  Services
       │                                    │
       ├─ Electronic Data                   └─ Other
       │  Interchange (EDI)
       │
       └─ Electronic Information
          Interchange
          - Electronic Mail
          - Bulletin Boards
```

Source: INPUT

a. Electronic Information Services

Electronic information services are databases that provide specific information via terminal – or computer-based inquiry, including items such as stock prices, legal precedents, economic indicators, periodical literature, medical diagnosis, airline schedules, automobile valuations, etc. The terminals used may be computers themselves, such as communications servers or personal computers.

Users inquire into and extract information from the databases. They may load extracted data into their own computer systems; the vendor does not provide data processing or manipulation capability as part of the electronic information service and users cannot update the vendor's databases. However, the vendor may offer other services (network applications or processing services) that do offer processing or manipulation capability.

The two kinds of electronic information services are:

- *On-line Databases* — Structured, primarily numerical data on economic and demographic trends, financial instruments, companies, products, materials, etc

- Unstructured, primarily textual information on people, companies, events, etc. These are often news services.

While electronic information services have traditionally been delivered via networks, there is a growing trend toward the use of CD ROM optical disks to support or supplant on-line services, and these optical disk-based systems are included in the definition of this delivery mode.

b. Network Applications

Value-Added Network Services (VAN Services) — VAN services are enhanced transport services which involve adding such functions as automatic error detection and correction, protocol conversion, and store-and-forward message switching to the provision of basic network circuits.

While VAN services were originally provided only by specialised VAN carriers (Tymnet, Telenet, etc.), today these services are also offered by traditional common carriers (AT&T, Sprint, etc.). Meanwhile, the VAN carriers have also branched into the traditional common carriers' markets and are offering unenhanced basic network circuits as well.

Electronic Data Interchange (EDI) — Application-to-application electronic exchange of business data between trade partners or facilitators using a telecommunications network.

Electronic Information Interchange — The transmission of messages across an electronic network managed by a services vendor, including electronic mail, voice mail, voice messaging and access to Telex, TWX, and other messaging services. This also includes bulletin board services.

8. Equipment Services

The equipment services delivery mode includes two submodes. Both deal with the support and maintenance of computer equipment:

Equipment Maintenance — Services provided to repair, diagnose problems and provide preventive maintenance both on-site and off-site for computer equipment. The costs of parts, media and other supplies are excluded. These services are typically provided on a contract basis

Environmental Services — Composed of equipment and data center related special services such as cabling, air conditioning and power supply, equipment relocation and similar services.

D
Computer Equipment

These definitions have been included to provide the basis for market segmentation in the software products markets.

- *Computer Equipment* — Includes all computer and telecommunications equipment that can be separately acquired with or without installation by the vendor and not acquired as part of an integrated system. Unless otherwise noted in an INPUT forecast, computer equipment is only included where it is part of the purchase of services or software products (e.g., turnkey systems and systems integration).

- *Peripherals* — Includes all input, output, communications, and storage devices (other than main memory) that can be channel connected to a processor, and generally cannot be included in other categories such as terminals.

- *Input Devices* — Includes keyboards, numeric pads, card readers, light pens and track balls, tape readers, position and motion sensors, and analogue-to-digital converters.

- *Output Devices* — Includes printers, CRTs, projection television screens, micro graphics processors, digital graphics, and plotters.

- *Communication Devices* — Includes modem, encryption equipment, special interfaces, and error control.

- *Storage Devices* — Includes magnetic tape (reel, cartridge, and cassette), floppy and hard disks, solid state (integrated circuits), and bubble and optical memories.

- *Computer Systems* — Includes all processors from personal computers to supercomputers. Computer systems may require type- or model-unique operating software to be functional, but this category excludes applications software and peripheral devices and processors or CPUs not provided as part of an integrated (turnkey) system.

- *Personal computers* — Smaller computers using 8-, 16-, or 32-bit computer technology. Generally designed to sit on a desktop and are portable for individual use. Price generally less than $5,000.

- *Workstations* — High-performance, desktop, single-user computers often employing Reduced Instruction Set Computing (RISC). Workstations provide integrated, high-speed, local network-based services such as database access, file storage and back-up, remote communications, and peripheral support. These products usually cost from $5,000 to $15,000.

- *Minicomputer or midsize computers* — Minicomputers are generally priced from $15,000 to $350,000. Many of the emerging client/server computers are in this category.

- *Mainframe or large computers* — Traditional mainframe and supercomputers costing more than $350,000.

- *Client/server computing* — Client/server is an architecture that assembles applications software and databases, systems software, and computer and networking equipment into a usable form for the purpose of leveraging information technology investments.

Broadly defined, it can include any kind of server, such as file servers and network servers, that are accessed by any kind of client, including a non intelligent terminal. INPUT has elected to use the narrower and newer definition, by which application and data processing is shared between a client and a server. It is through the act of sharing that the greatest benefit is derived in terms of leveraging information technology investments. It is also the cause of the greatest change for vendors and users.

E
Sector Definitions

1. Industry Sector Definitions

INPUT structures the information services market into industry sectors such as process manufacturing, insurance, transportation, etc. The definitions of these sectors are based on the 1987 revision of the Standard Industrial Classification (SIC) code system. The specific industries (and their SIC codes) included under these industry sectors are detailed in Exhibit C-10.

INPUT includes all delivery modes except systems software products and equipment services in industry market sectors. See Exhibit C-9 and section E-3 (Delivery Mode Reporting by Sector).

Note: SIC code 88 is Personal Households. INPUT does not currently analyse or forecast information services in this market sector.

2. Cross-Industry Sector Definitions

INPUT has identified seven cross-industry market sectors. These sectors or markets involve multi-industry applications such as human resource systems, accounting systems, etc.

- In order to be included in an industry sector, the service or product delivered must be specific to that sector only. If a service or product is used in more than one industry sector, it is counted as cross-industry.

- INPUT only includes the turnkey systems, applications software products, and transaction processing services in the cross-industry sectors.

Exhibit C-10

Industry Sector Definitions

Industry Sector	SIC Code	Description
Discrete Manufacturing	23xx	Apparel and other finished products
	25xx	Furniture and fixtures
	27xx	Printing, publishing and allied industries
	31xx	Leather and leather products
	34xx	Fabricated metal products, except machinery and transportation equipment
	35xx	Industrial and commercial machinery and computer equipment
	36xx	Electronic and other electrical equipment and components, except computer equipment
	37xx	Transportation equipment
	38xx	Instruments; photo/med/optical goods; watches/clocks
	39xx	Miscellaneous manufacturing industry
Process Manufacturing	10xx	Metal mining
	12xx	Coal mining
	13xx	Oil and gas extraction
	14xx	Mining/quarrying nonmetalic minerals
	20xx	Food and kindred products
	21xx	Tobacco products
	22xx	Textile mill products
	24xx	Lumber and wood products, except furniture
	26xx	Paper and allied products
	28xx	Chemicals and allied products
	29xx	Petroleum refining and related industries
	30xx	Rubber and miscellaneous plastic products
	32xx	Stone, clay, glass and concrete products
	33xx	Primary metal industries
Transportation Services	40xx	Railroad transport
	41xx	Public transit/transport
	42xx	Motor freight transport/warehousing
	43xx	U.S. Postal Service
	44xx	Water transportation
	45xx	Air transportation (including airline reservation services in 4512)
	46xx	Pipelines, except natural gas
	47xx	Transportation services (including 472x, arrangement of passenger transportation)

Exhibit C-10 (Cont'd)

Industry Sector Definitions (Cont'd)

Industry Sector	SIC Code	Description
Telecommunications	48xx	Communications
Utilities	49xx	Electric, gas and sanitary services
Retail Distribution	52xx	Building materials
	53xx	General merchandise stores
	54xx	Food stores
	55xx	Automotive dealers, gas stations
	56xx	Apparel and accessory stores
	57xx	Home furniture, furnishings and accessory stores
	58xx	Eating and drinking places
	59xx	Miscellaneous retail
Wholesale Distribution	50xx	Wholesale trade - durable goods
	51xx	Wholesale trade - nondurable goods
Banking and Finance	60xx	Depository institutions
	61xx	Nondepository credit institutions
	62xx	Security and commodity brokers, dealers, exchanges and services
	67xx	Holding and other investment offices
Insurance	63xx	Insurance carriers
	64xx	Insurance agents, brokers and services
Health Services	80xx	Health services
Education	82xx	Educational services

Exhibit C-10 (Cont'd)

Industry Sector Definitions (Cont'd)

Industry Sector	SIC Code	Description
Business Services	65xx	Real estate
	70xx	Hotels, rooming houses, camps, and other lodging places
	72xx	Personal services
	73xx	Business services (except hotel reservation services in 7389)
	7389x	Hotel reservation services
	75xx	Automotive repair, services and parking
	76xx	Miscellaneous repair services
	78xx	Motion pictures
	79xx	Amusement and recreation services
	81xx	Legal services
	83xx	Social services
	84xx	Museums, art galleries, and botanical/zoological gardens
	86xx	Membership organizations
	87xx	Engineering, accounting, research, management, and related services
	89xx	Miscellaneous services
Federal Government	9xxx	
State and Local Government	9xxx	
Miscellaneous Industries	01xx	Agricultural production - crops
	02xx	Agricultural production - livestock/animals
	07xx	Agricultural services
	08xx	Forestry
	09xx	Fishing, hunting and trapping
	15xx	Building construction - general contractors, operative builders
	16xx	Heavy construction - contractors
	17xx	Construction - special trade contractors

Source: INPUT

The seven cross-industry markets are:

Accounting — consists of applications software products and information services that serve such functions as:

- General ledger
- Financial management
- Accounts payable
- Accounts receivable
- Billing/invoicing
- Fixed assets
- International accounting
- Purchasing
- Taxation
- Financial consolidation

Excluded are accounting products and services directed to a specific industry, such as tax processing services for CPAs and accountants within the business services industry sector.

Human Resources — consists of application solutions purchased by multiple industry sectors to serve the functions of human resources management and payroll. Examples of specific applications within these two major functions are:

- Employee relations
- Benefits administration
- Government compliance
- Manpower planning
- Compensation administration
- Applicant tracking
- Position control
- Payroll processing.

Education and Training — consists of education and training for information systems professionals and users of information systems delivered as a software product, turnkey system or through processing services. The market for computer-based training tools for the training of any employee on any subject is also included.

Office Systems consists of the following six categories:

Integrated Office Systems (IOSs) — IOSs integrate the applications that perform common office tasks. Typically these tasks include the following core applications, all of which are accessed from the same terminal, microcomputer or workstation:

- Electronic mail

- Decision support systems

- Time management

- Filing systems.

IOSs enable office workers to utilise applications that are resident on a number of hosts or servers, thus creating a corporate communication environment through integrating line-of-business software with personal software productivity tools. IOSs capitalise on the cross-platform architectures of major vendors. Major hardware vendors such as IBM, Data General, Digital, Hewlett-Packard and NCR all offer IOSs.

Work flow and groupware products are also included within the IOS definition.

Word Processing — Word processing is the most common microcomputer application and is a basic application within the office systems sector. Word processing addresses several levels of functionality, from the production of simple correspondence to large document generation where many people within different departments have input.

Desktop Publishing (DTP) — Desktop publishing refers to the page-design software programs that allow small and mid-sized organisations to publish printed documents (brochures, catalogues, newsletters, reports, etc.) from the desktop. The primary functions of DPT software include the manipulation of the following functions:

- Layout and design of columns

- Text manipulation (font type)

- Graphic manipulation

- Print Control (colour type, paper type).

Electronic Publishing — Electronic publishing includes composition, printing, and editing software for documents containing multiple typefaces and graphics including charts, diagrams, computer-aided design (CAD) drawings, line art, and photographs. Electronic publishing products may also have different data formats such as text, graphs, images, voice and video.

The fundamental difference between electronic publishing and desktop publishing is that electronic publishing encompasses a method of document management and control from a single point regardless of how many authors/locations work on a document. Desktop publishing (DTP) on the other hand, is considered a personal productivity tool and is generally a lower-end product residing on a personal computer.

Graphics — Graphics packages that are used for presentations or freehand drawings and/or are ancillary to desktop publishing are part of office systems. Thus, the graphics component of office systems sector includes the following elements:

Presentation graphics represent the bulk of office systems graphics. Most presentations involve a combination of graphs and text. They are used to communicate a series of messages to an audience rather than to analyse data.

Paint and line art drawing programs are used for illustrations while page layout programs are used to integrate text and graphics.

Electronic form programs allow users to create and print forms in-house. Some applications work with OCR scanners allowing users to scan pictures and logos directly on the forms.

Document Imaging Software — The software that allows users to manipulate (store, retrieve, print) images that have been scanned from paper documents. The applications that imaging software generates include: full text retrieval, document management, and database management. Document imaging software is a component of an imaging system. Hardware components of imaging systems include: scanners, image servers, workstations, optical drives, printers, and storage devices.

Engineering and Scientific encompasses the following
applications:

- Computer-aided design and engineering (CAD and CAE)

- Structural analysis

- Statistics/mathematics/operations research

- Mapping/GIS.

- Computer-aided manufacturing (CAM) or CAD that is integrated
  with CAM is excluded from the cross-industry sector as it is
  specific to the manufacturing industries. CAD or CAE that is
  dedicated to integrated circuit design is also excluded because it is
  specific to the semiconductor industry.

Planning and Analysis consists of software products and information
services in four application areas:

- Executive Information Systems (EIS)

- Financial modelling or planning systems

- Spreadsheets

- Project management.

Other encompasses marketing/sales and electronic publishing application
solutions.

- Sales and marketing includes:

- Sales analysis

- Marketing management

- Demographic market planning models.

3. Delivery Mode Reporting by Sector

This section describes how the delivery mode forecasts relate to the market sector forecasts. Exhibit C-11 summarises the relationships.

- *Processing services* — The transaction processing services submode is forecasted for each industry and cross-industry market sector. The utility and other processing services submodes are forecasted in total for the general market sector.

- *Turnkey systems* — Turnkey systems is forecasted for the 15 industry and 7 cross-industry sectors. Each component of turnkey systems is forecasted in each sector.

- *Applications software products* — The applications software products delivery mode is forecasted for the 15 industry and 7 cross-industry sectors. In addition, each forecast is broken down by platform level: mainframe, minicomputer and workstation/PC.

- *Systems operations* — Each of the systems operations submodes is forecasted for each of the 15 industry sectors.

- *Systems integration* — Systems integration and each of the components of systems integration are forecasted for each of the 15 industry sectors.

- *Professional services* — Professional services and each of the submodes is forecasted for each of the 15 industry sectors.

- *Network services* — The network applications submode of network services forecasted for each of the 15 industry sectors.

  Industry and cross-industry electronic information services are forecast in relevant market sectors. The remainder of electronic information services is forecasted in total for the general market sector.

- *Systems software products* — Systems software products and its submodes are forecasted in total for the general market sector. Each submode forecast is broken down by platform level: mainframe, minicomputer and workstation/PC.

- *Equipment services* — Equipment services and its submodes are forecasted in total in the general market sectors.

Exhibit C-11

Delivery Mode versus Market Sector Forecast Content

Delivery Mode	Submode	Market Sectors		
		Industry Sectors	Cross-Industry Sectors	General
Processing Services	Transaction Utility Other	X	X	 X X
Turnkey Systems		X	X	
Applications Software Products		X	X	
Systems Operations	Platform Applications	X X		
Systems Integration		X		
Professional Services		X		
Network Services	Network Applications Electronic Information Services	X X		 X
Systems Software Products				X
Equipment Services				X

Source: INPUT

F
Vendor Revenue and User Expenditure Conversion

The size of the information services market may be viewed from two perspectives: vendor (producer) revenues and user expenditures. INPUT defines and forecasts the information services market in terms of user expenditures. User expenditures reflect the markup in producer sales when a product such as software is delivered through indirect distribution channels (such as original equipment manufacturers (OEMs), retailers and distributors). The focus on user expenditure also eliminates the double counting of revenues that would occur if sales were tabulated for both producer (e.g., Lotus) and distributor (e.g., ComputerLand).

For most delivery modes, vendor revenues and user expenditures are fairly close. However, there are some areas of significant difference. Many microcomputer software products, for example, are marketed through distribution channels. To capture the valued added through these distribution channels, adjustment factors are used to convert estimated information services vendor revenues to user expenditures.

For some delivery modes, including software products, systems integration and turnkey systems, there is a significant volume of intra-industry sales. For example, systems integrators purchase software and subcontract the services of other professional services vendors. Turnkey vendors incorporate purchased software into the systems they sell to users.

To account for such intra-industry transactions, INPUT uses conversion ratios to derive the estimate of end-user expenditures.

Exhibit C-12 summarises the net effect of the various ratios used by INPUT to convert vendor revenues to user expenditure (market size) figures for each delivery mode.

Exhibit C-12

Vendor Revenue to User Expenditure Conversion

Delivery Mode	Vendor Revenue Multiplier
Applications Software Products	1.18
Systems Software Products	1.10
Systems Operations	0.95
Systems Integration	0.95
Professional Services	0.99
Network Services	0.99
Processing Services	0.99
Turnkey Systems	0.95
Equipment Services	0.99

Source: INPUT