JULY 1988

SYSTEMS INTEGRATION EUROPEAN MARKET ANALYSIS

A STUDY FOR UNISYS EUROPE-AFRICA LTD.

By

INPUT LTD.
41 Dover Street
London, W1X3RB

Abstract

This study provides an analysis of the Western European Systems Integration market. It provides an analysis by country market, industry sector, (user) company size and Systems Integration vendor. It additionally provides commentary on the competitive environment and key product and technology requirements for Systems Integration.

This study is derived from original research conducted by INPUT during 1987.

Table of Contents

Exhibits

Exhibits (Continued)

I

Introduction

1

Introduction

This study was specifically carried out for UNISYS EUROPE-AFRICA LTD in May 1988.

A Objective

The major objective of the study was to provide an analysis of the Western European Systems Integration market analysed by:

- Geographic area
- Industry sector
- Company size (user)
- Information Services vendor

In addition the study set out to provide a commentary on the Systems Integration environment in Europe in respect of two major aspects:

- The competitive environment
- Key product and technology requirements

B Scope and Methodology

The study scope was limited by the timescale set for its completion (one week) to a more comprehensive and detailed layout of basic research conducted by INPUT during 1987.

The market analysis was segmented by geographic area and industry sector. In addition an analysis of the market by user company size and by participating information services vendors was also carried out on a more limited basis.

C

Report Structure

The remaining chapters of this report are organised as follows:

- Chapter II provides an overview of the Western European Systems Integration market showing analyses by country, by vertical market sector and by organisation size. It also provides an analysis of the information services vendors active in this market and commentary on the competitive environment. A commentary on the key product and technology requirement for Systems Information is also included.

- Chapter III contains a set of tables that provide the more detailed breakdown of each country market into its constituent parts.

II

Western European Systems Integration Markets

II

Western European Systems Integration Markets

A Definitions

The analysis provided in this report divides the total market into a number of segments. These can be defined as follows:

- Geographic area. This segmentation is by European country and is estimated as noncaptive reserves earned by an information services vendor within that country's geographic boundary.

- Industry sector. This analysis is defined as:

  - Civil Government (non-defence for both local and national government, but excludes public services, e.g., police, fire and ambulance).

  - Manufacturing. (Both discreet and process manufacturing are included in this sector.)

  - Banking and Finance. This sector includes all financial institutions including Insurance.

  - All Other. This sector can be further analysed as consisting of the following sectors: Telecommunications, Utilities, Distribution, Public Services (Police, Fire, Ambulance) and Services.

- User Company Size. A limited analysis of the market by this parameter is included. An overall classification is made according to Large, Medium and Small organisations. For the purposes of this analysis, Civil Government is classified as Large. A detailed analysis of the Banking and Finance sector by comparative size of institution was not possible due to insufficient data.

However the general form of the Systems Integration market in this sector enables an estimate to be made between the Large and Very Large institutions (grouped here as Large), Medium-sized institutions (assets likely to exceed $10 billion) and Small organisations. In the 'Other'

category, Utilities and Public Services have been assumed to be Large organisations. Commercial organisations have been classified as Large, Medium and Small as follows:

- Large - Annual revenues greater than $100M
- Medium - Annual revenues between $50M and $100M
- Small - Annual revenues less than $50M

The definition of the Systems Integration sector used in this study is the sum of all relevant products and services supplied by contractors on a third-party basis to integrate systems. Exhibit II-1 lists the likely extent of products and services that are included in INPUT's definition.

For the purpose of consolidation, within INPUT's 1987 Analysis and Forecast of the Western European Information Services market it was assumed that on average only about 56% of the total contract value (i.e., of all those components listed in Exhibit II-1) was represented by Professional Services and therefore qualified for inclusion in the Information Services sector. In this study 100% of identified SI expenditure is included.

B

Market Analysis Summary

Exhibit II-2 shows the overall analysis of the Western European Systems Integration market by country and by industry sector for 1987.

Exhibit II-3 shows the overall analysis of the market by organisation size for 1987 on a country basis and Exhibit II-4 shows this analysis by industry sector.

It has only been possible to conduct an analysis of the market by vendor for the four major country markets, UK, France, West Germany and Italy. However, this provides some useful insights into the structure of the market since these four countries account for some $750M or 92% of the entire market on these estimates for 1987.

An analysis of the competitive environment and a discussion of participating vendors is provided in Section C below.

Exhibit II-5 shows the 1992 forecast of the systems integration market analysed by country market and industry sector. At this stage of INPUT's research into systems integration it is not possible to forecast the split by organisation or vendor participants. However, the following expected trends are worth noting.

EXHIBIT II-1

WESTERN EUROPEAN INFORMATION SERVICES— MARKET COMPONENTS

Project Component	Total Component Expenditures (Percent)
• Hardware	
- Information Systems	28
- Communications	8
• Software Products	
- Systems Software	2
- Applications Software	4
• Professional Services	
- Consulting	
° Feasibility and Tradeoff Studies	2
° Selection of Hardware, Network and Software	4
- Project Management	6
- Design/Integration	
° Systems Design	
° Installation of Hardware, Network and Software	11
° Demonstration and Testing	
- Software Development	
° Modification of Software Packages	
° Modification of Existing Software	30
° Custom Development of Software	
• Operation and Maintenance	
- Facilities Management	1
- Hardware/Software Maintenance	1
- Education/Training and Documentation	2
• Other Miscellaneous Products/Services	
- Data Processing Supplies	
- Processing/Network Services	1
- Data/Voice Communications Services	
	100

EXHIBIT II-2

WESTERN EUROPEAN SYSTEMS INTEGRATION MARKET ANALYSIS BY INDUSTRY SECTOR, 1987

1987	Market Estimate $M				
COUNTRY TOTAL	CIVIL GOVT.	MANUF. AND FINANCE	BANKING	OTHER	
UK	40	30	120	60	250
France	30	45	55	80	210
West Germany	25	115	30	45	215
Italy	20	25	8	22	75
Netherlands	-	5.5	2	2.5	10
Belgium	-	4	-	2	6
Sweden	-	5	2	3	10
Norway	-	2	1	2	5
Denmark	-	2	1	2	5
Finland	-	3	1	1	5
Austria	-	2	2	2	6
Switzerland	-	3	5	2	10
Spain	-	4	2	2	8
Portugal	-	-	-	-	0
TOTAL	115	245.5	229	225.5	815

EXHIBIT II-3

WESTERN EUROPEAN SYSTEMS INTEGRATION MARKET ANALYSIS BY ORGANISATION SIZE, 1987

1987	Market Estimate $M			
COUNTRY	LARGE	MEDIUM	SMALL	TOTAL
UK	103	111	26	240
France	125	75	10	210
West Germany	115	75	25	215
Italy	52	30	3	85
Netherlands	6	4	-	10
Belgium	4	2	-	6
Sweden	5	5	-	10
Norway	2	3	-	5
Denmark	1	4	-	5
Finland	2	3	-	5
Austria	-	5	1	6
Switzerland	2	6	2	10
Spain	-	4	4	8
Portugal	-	-	-	0
TOTAL	417	327	71	815

EXHIBIT II-4

WESTERN EUROPEAN SYSTEMS INTEGRATION MARKET ANALYSIS BY INDUSTRY SECTOR/ORGANISATION SIZE, 1987

1987	Market Estimate $M			
COUNTRY	LARGE	MEDIUM	SMALL	TOTAL
Civil Government	115	-	-	115
Manufacturing	127	83.5	35	245.5
Banking and Finance (Including Insurance)	39	155	35	229
Other	136	88.5	1	225.5
Total	417	327	71	815

A comparison of Exhibits II-2 and II-5 indicates the following forecast changes in proportional market share for the four vertical markets analysed over the 1987-to-1992 time frame:

- Civil Government—14% to 29%
- Manufacturing—constant at 39%
- Banking and Finance—28% to 20%
- Other—28% to 21%

The Civil Government forecast is predicated on Europe's continuing emphasis on radical developments such as the GDN project in the U.K. Quite clearly this market is subject to government policy changes. INPUT considers that, in general, this market can be viewed positively because, by their very nature, civil governments need to develop large projects and have difficulty retaining and developing in-house skills.

EXHIBIT II-5

WESTERN EUROPEAN SYSTEMS INTEGRATION MARKET ANALYSIS BY INDUSTRY SECTOR, 1992

	Market Forecast $M 1992				
COUNTRY	CIVIL GOVT.	MANUF.	BANKING FINANCE	OTHER	TOTAL
U.K.	250	95	285	190	820
France	350	210	170	215	945
West Germany	100	380	180	150	810
Italy	300	260	50	120	730
Netherlands	55	40	20	25	140
Belgium	15	40	20	15	90
Sweden	10	25	10	15	60
Norway	5	15	5	10	35
Denmark	4	12	4	8	28
Finland	3	17	6	6	32
Austria	3	16	7	9	35
Switzerland	5	15	15	10	45
Spain	15	20	12	13	60
Portugal	2	2	2	2	8
TOTAL	1,117	1,147	786	788	3,838

Manufacturing will continue to maintain its market share as emphasis on CIM and other automatic procedures (e.g., materials handling) is maintained.

INPUT considers that Banking and Finance will be a difficult market for systems integrators and will have a smaller share of the market by 1992.

Banks and other financial institutions are currently under heavy competitive pressure to automate their procedures, centralise account management and move to on-line service delivery.

Staff and skills shortages are forcing them to look to outside contractors to implement key technology needs, which accounts for the high representation of this sector in 1987. Inevitably, as SI becomes more accepted in other areas, the relative size of the sector will fall.

However, INPUT predicts that security and competitive issues will cause financial institutions to effectively become major SI operators for their own in-house needs. This market will therefore be relatively difficult for third-party vendors to penetrate. This scenario implies a shift towards the development of the market at the smaller end.

In terms of the market split among large, medium and small organisations, INPUT predicts that there will be a continued trend towards greater market share for the medium and small categories at the expense of the large category.

In general, the larger organisations will be better able to manage major systems in-house by attracting and developing highly skilled personnel.

Smaller organisations will tend to need assistance from third-party vendors to maintain a competitive position.

C

Competitive Environment

A perspective on the vendors active in the Western European systems integration market can be gained by analysing the vendor data contained in Chapter III below.

The 1987 market shares of the top twenty vendors are listed in Exhibit II-6.

It is interesting to note that the revenues of these twenty organisations add up to a total of $497 million, which represents just over 60% of the estimated total 1987 market.

EXHIBIT II-6

LEADING SI VENDORS WESTERN EUROPEAN MARKET

Rank	Vendor	1987 Estimated Revenues $M (Rounded)
1	Reuters-Rich	62
2	Cap Gemini Sogeti	60
3	Siemens	45
4	SD-Scion	40
5	Comau	35
6	Semacap	30
7	Software Sciences	25
8	STC/ICL	20
9	SG2	20
10	Olivetti	20
11	Mannesman	20
12	Logica	20
13	EDS	20
14	Ikos	15
15	Control Data	15
16	British Telecom	10
17	Steria	10
18	EDV-Ploenzke	10
19	GEI	10
20	Finsiel	10

Two key points that should be carefully noted when reviewing this market emerge from this analysis:

- The relatively 'unexpected' presence of the vendors listed—notably Reuters as the market leader.

- The apparently poor representation by the three largest computer manufacturers—IBM, DIGITAL and UNISYS.

The definition of the market implies the measurement of the vendor who is 'prime' in the contract. Consequently, hardware revenue, although counted, does not tend to favour hardware vendors at this stage of market development.

It should be clearly stated as a caveat that there exists no single accepted view of what the systems integration market is. Consequently, it would be possible to define the market in other ways and possibly present vendor competition from another angle.

It needs to be recognised that the SI market is at the pioneer fringe of market definition. Though SI is not new (SI contracts—e.g., LACES in the U.K.— date back to the late 1960s), it is the emergent size of the market that is causing it to become such a focus of interest.

The SI market exists at the boundary between a number of different vendor and industry groups, namely:

- Software and service vendors
- Computer equipment vendors
- Telecommunications vendors of products and services
- The electronics engineering industry
- Management consultants/Big-8 accounting firms
- Manufacturing/engineering industry

Over the next five years (and beyond) INPUT expects SI to become a much more clearly defined area from the standpoints that:

- The market pressure to offer this type of service (or way of doing business) will lead to an easier definition of subject contracts.

- Competitive vendor marketing and increasing user awareness will lead to a generally agreed-upon market definition.

Over the next five years it is very likely that the list of the top 20 vendors will change markedly. It can be expected that IBM, DIGITAL and UNISYS will all take steps to position themselves effectively in this market. A number of other organisations, notably Arthur Andersen, are likely to play an increasingly significant role.

A key feature of SI market development is likely to be a continuing spate of joint vendor company formations as vendors attempt to position themselves:

- On a Pan-European basis to meet multi-country client needs
- Into target industry segments, e.g., factory automation
- To acquire critical technical/financial muscle to remain competitive

D

Key Product and Technology Requirements

In addition to the generic systems integration skills of project management, systems design, requirements analysis etc. that are required of vendors, this sector will place emphasis on certain key product and technology requirements.

In the first instance detailed and specialised knowledge of the subject vertical markets that are being addressed is of the utmost importance. RFPs in this business are large and detailed documents. They can only be responded to professionally and with any hope of ultimate success by vendors who maintain specialised staffs to maintain close liaison with and track the systems with attention to their target sector.

Thus, using the structure of this report, the following 'skills areas' can be suggested:

- Civil Government.
  - Government Administration
  - Network Management
  - Office Automation
  - Security and Privacy Technology

- Manufacturing.
  - Test Area Management
  - Automatic Control Systems,
  e.g., Warehousing/Materials Handling
  Process Plant
  - Robotics
  - CIM

- Banking and Finance.
  - Domestic and International Banking Procedures
  - Communications Network Management
  - Resilient Systems
  - Disaster Recovery Systems
  - Security and Privacy Technology

- Telecommunications.
  - Communications Network Management

- Utilities
  - Nuclear Power Systems
  - Energy Management Systems
  - Telemetry/Metering

- Distribution
  - POS Systems
  - Warehousing/Materials Handling

- Public Services
  - Command/Control/Communications/Intelligence Systems

Key product and technology requirements that emerge from this list are:

- Network Management Control Tools
- Network Integration (Voice/Data/Facsimile and Video) ISBN
- Telemetry Systems
- Resilient computer architecture (fault tolerance)
- Secure systems
- Storage technology (optical)
- Portable Operating system environments (in particular UNIX)
- Embedded systems
- Computer-aided software engineering

III

Country Market Analysis

III

Country Market Analysis

This chapter provides on a per-country basis a more detailed analysis of the data summarised in Chapter II above.

Exhibits III-1 - III-5 cover the UK Market.

Exhibits III-6 - III-10 cover the French Market.

Exhibits III-11 - III-15 cover the West German Market.

Exhibits III-16 - III-20 cover the Italian Market.

Exhibits III-21 - III-39 cover the remaining 10 country markets covered in this study.

EXHIBIT III-1

UNITED KINGDOM SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987	1988	1989	1990	1991	1992	AAGR
Civil Government	40	85	150	200	220	250	44%
Manufacturing	30	40	50	60	75	95	26%
Banking & Finance (Including Insurance)	120	145	170	200	240	285	19%
Other (Total)	60	90	100	120	150	190	26%
*Telecomms.	10	15	15	20	20	25	
*Utilities	10	15	20	25	30	35	
*Distribution	15	15	20	20	25	25	
*Public Services	20	30	30	35	50	75	
*Services and All Other	5	15	15	20	25	30	
TOTAL	250	360	470	580	685	820	25%

EXHIBIT III-2

UNITED KINGDOM CIVIL GOVERNMENT INDUSTRY SECTOR MARKET ANALYSIS

COMPANY SIZE ANALYSIS (ANNUAL REVENUE)

INFORMATION SERVICES VENDOR	>$100M	100-50	<$50M	1987 REVENUES
STC/ICL				20
BRITISH TELECOM				10
CSC				5
SOFTWARE SCIENCE				2
OTHERS				3
TOTAL				40

Comments

The 1987 analysis does not reflect the effects of the GDN contract only just awarded. This will move RACAL and SD-Scicon into significant market share positions.

It is also likely that hardware vendors such as IBM and DIGITAL will gain important contracts in this sector.

EXHIBIT III-3

UNITED KINGDOM MANUFACTURING INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE) >$100M	100-50	<$50M	1987 REVENUES
COMAU (DIGITAL-FIAT)	8	2		10
GRUMMAN DATA SYSTEMS	5			5
ISTEL	2	2	1	5
OTHERS	5	3	2	10
TOTAL	20	7	3	30

Comments

Many other vendors are actively planning to become significant players in this sector, notably:

- IBM
- Digital
- ICL
- EDS
- Logica
- SD-Scicon
- SEMACAP
- Arthur Andersen

EXHIBIT III-4

UNITED KINGDOM BANKING AND FINANCE INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE) L	M	S	1987 REVENUES
REUTERS-RICH	5	30	10	45
CDC-MICROGNOSIS	2	10		12
LOGICA	2	6	2	10
DATALOGIC		6	2	8
SOFTWARE SCIENCES		6	2	8
OTHERS	5	25	7	37
TOTAL	14	83	23	120

EXHIBIT III-5

UNITED KINGDOM 'OTHER' INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE) >$100M	100-50	<$50M	1987 REVENUES
SOFTWARE SCIENCES	10			10
SD-SCICON	5	5		10
PLESSEY NETWORK & OFFICE SYSTEMS	6			6
HEWLETT-PACKARD	5			5
MCDONNELL DOUGLAS		5		5
CGS		5		5
LOGICA	5			5
OTHERS	8	6		14
TOTAL	39	21		60

COMMENTS:
Other vendors expected to become active:

EDS	IBM	Arthur Andersen	DIGITAL
Ferranti	UNISYS	CDC	Westinghouse

EXHIBIT III-6

FRENCH SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT	30	55	100	170	260	350	63%
MANUFACTURING	45	60	80	120	160	210	36%
BANKING & FINANCE (INCLUDING INSURANCE)	55	70	80	105	135	170	25%
OTHER (TOTAL)	80	95	110	145	175	215	22%
TOTAL	210	280	370	540	730	945	35%

EXHIBIT III-7

FRENCH CIVIL GOVERNMENT
INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE) >$100M	100-50	<$50M	1987 REVENUES
CAP GEMINI SOGETI				10
SESA				5
SG2				5
BULL				3
OTHERS				7
TOTAL				30

EXHIBIT III-8

FRENCH MANUFACTURING INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE)			
	>$100M	100-50	<$50M	1987 REVENUES
CAP GEMIN SOGETI	5	5		10
COMAU (DIGITAL-FIAT)	10			10
SEMA-METRA	6	2		8
SYSECA	5			5
GFI	3	2		5
CISI	3			3
OTHERS	3	1		4
TOTAL	35	10		45

EXHIBIT III-9

FRENCH BANKING AND FINANCE INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE)			
	L	M	S	1987 REVENUES
SG2	4	6	5	15
REUTERS-RICH	2	10	3	15
STERIA	3	7		10
CAP GEMINI SOGETI		5		5
SLIGOS	1	2	2	5
SEMA-METRA		5		5
TOTAL	10	35	10	55

EXHIBIT III-10

FRENCH 'OTHER' INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE) >$100M	100-50	<$50M	1987 REVENUES
CAP GEMIN SOGETI	10	5		15
EDS (SPI)	10	5		10
SEMA-METRA	7	3		10
SESA	6	2		8
GSI	6	2		8
OTHERS	16	13		29
TOTAL	55	30		80

EXHIBIT III-11

WEST GERMAN SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE 1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT	25	30	35	50	75	100	32%
MANUFACTURING	115	145	190	250	310	380	27%
BANKING & FINANCE (INCLUDING INSURANCE)	30	45	65	100	140	180	43%
OTHER (TOTAL)	45	55	70	90	120	150	27%
TOTAL	215	275	360	490	645	810	30%

EXHIBIT III-12

WEST GERMAN CIVIL GOVERNMENT INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE) >$100M	100-50	<$50M	1987 REVENUES
SIEMENS				10
MANNESMANN				3
OTHERS				12
TOTAL				25

EXHIBIT III-13

WEST GERMAN MANUFACTURING INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE) >$100M	100-50	<$50M	1987 REVENUES
SIEMENS	7	5	15	27
MANNESMANN	6	5		11
EDV-PLOENZKE	5	5		10
IKOSS	6	4		10
GEI1	8	2		10
PSI	4	4		8
MBP2	6	2		8
SOFTLAB	3	2		5
OTHERS		6	10	16
TOTAL	45	35	25	105

COMMENTS:
[1] GEI is a subsidiary of AEG/Daimler-Benz
[2] MBP is a subsidiary of Hoesch

EXHIBIT III-14

WEST GERMAN BANKING AND FINANCE INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE)			
	>$100M	100-50	<$50M	1987 REVENUES
NIXDORF	2	3		5
IKOSS	2	3		5
SCS	3	2		5
OTHERS	3	12		15
TOTAL	10	20		30

EXHIBIT III-15

WEST GERMAN 'OTHER' INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE)			
	>$100M	100-50	<$50M	1987 REVENUES
SCS	4	1		5
SIEMENS	3	2		5
OTHERS	23	12		35
TOTAL	30	15		45

EXHIBIT III-16

ITALIAN SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT	20	30	55	110	220	300	72%
MANUFACTURING	25	50	80	120	180	260	60%
BANKING & FINANCE (INCLUDING INSURANCE)	8	12	20	30	40	50	40%
OTHER (TOTAL)	22	33	55	80	100	120	40%
TOTAL	75	125	210	340	540	730	58%

EXHIBIT III-17

ITALIAN CIVIL GOVERNMENT INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE) >$100M	100-50	<$50M	1987 REVENUES
FINSIEL				10
OLIVETTI				3
OTHERS				7
TOTAL				20

EXHIBIT III-18

ITALIAN MANUFACTURING INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE) >$100M	100-50	<$50M	1987 REVENUES
COMAU	5	5		10
ENIDATA	5			5
OTHERS	2	5	3	10
TOTAL	12	10	3	25

EXHIBIT III-19

ITALIAN BANKING AND FINANCE INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE) L	M	S	1987 REVENUES
MONETICA*		5		5
OTHERS		3		3
TOTAL		8		8

* Joint Enidate/Sligos Company

EXHIBIT III-20

ITALIAN 'OTHER' INDUSTRY SECTOR MARKET ANALYSIS

INFORMATION SERVICES VENDOR	COMPANY SIZE ANALYSIS (ANNUAL REVENUE) >$100M	100-50	<$50M	1987 REVENUES
OLIVETTI		5		5
ITALTEL	10			10
OTHERS		7		7
TOTAL	10	12		22

EXHIBIT III-21

NETHERLANDS SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT		7	20	30	45	55	65%
MANUFACTURING	5.5	10	45	25	35	40	62%
BANKING & FINANCE (INCLUDING INSURANCE)	2.0	5	15	15	18	20	58%
OTHER (TOTAL)	2.5	7	15	15	20	25	68%
TOTAL	10	29	95	85	118	140	70%

EXHIBIT III-22

NETHERLANDS SYSTEMS INTEGRATION MARKET ANALYSIS, ORGANISATION SIZE

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987			
	LARGE	MEDIUM	SMALL	TOTAL
CIVIL GOVERNMENT				
MANUFACTURING	3	2.5	-	5.5
BANKING AND FINANCE (INCLUDING INSURANCE)	2	-	-	2.0
OTHER	1.0	1.5	-	2.5
TOTAL	6	4	-	10

EXHIBIT III-23

BELGIAN SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT			5	8	12	15	44%
MANUFACTURING	4	10	20	25	30	40	58%
BANKING & FINANCE (INCLUDING INSURANCE)			5	10	15	20	59%
OTHER (TOTAL)	2	6	10	12	12	15	50%
TOTAL	6	16	40	55	69	90	72%

EXHIBIT III-24

BELGIAN SYSTEMS INTEGRATION MARKET ANALYSIS, ORGANISATION SIZE

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987			
	LARGE	MEDIUM	SMALL	TOTAL
CIVIL GOVERNMENT				
MANUFACTURING	2	2	-	4
BANKING AND FINANCE (INCLUDING INSURANCE)	-	-	-	-
OTHER	2	-	-	2
TOTAL	4	2	-	6

EXHIBIT III-25

SWEDISH SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE $M						
	1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT			1	4	8	10	115%
MANUFACTURING	5	8	12	15	20	25	38%
BANKING & FINANCE (INCLUDING INSURANCE)	2	4	6	6	8	10	38%
OTHER (TOTAL)	3	4	6	8	12	15	38%
TOTAL	10	16	25	33	48	60	43%

EXHIBIT III-26

SWEDISH SYSTEMS INTEGRATION MARKET ANALYSIS, ORGANISATION SIZE

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987			
	LARGE	MEDIUM	SMALL	TOTAL
CIVIL GOVERNMENT				
MANUFACTURING	3	2	-	5
BANKING AND FINANCE (INCLUDING INSURANCE)	-	2	-	2
OTHER	2	1	-	3
TOTAL	5	5	-	10

EXHIBIT III-27

NORWEGIAN SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT			2	2	4	5	36%
MANUFACTURING	2	3	5	9	12	15	50%
BANKING & FINANCE (INCLUDING INSURANCE)	1	2	3	4	4	5	38%
OTHER (TOTAL)	2	3	5	7	8	10	38%
TOTAL	5	8	15	22	28	35	48%

EXHIBIT III-28

NORWEGIAN SYSTEMS INTEGRATION MARKET ANALYSIS, ORGANISATION SIZE

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987			
	LARGE	MEDIUM	SMALL	TOTAL
CIVIL GOVERNMENT				
MANUFACTURING	-	2	-	2
BANKING AND FINANCE (INCLUDING INSURANCE)	1	-	-	1
OTHER	1	1	-	2
TOTAL	2	3	-	5

EXHIBIT III-29

DANISH SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT			2	2	3	4	26%
MANUFACTURING	2	3	5	7	10	12	43%
BANKING & FINANCE (INCLUDING INSURANCE)	1	1	2	3	3	4	32%
OTHER (TOTAL)	2	3	5	6	6	8	32%
TOTAL	5	7	14	18	22	28	41%

EXHIBIT III-30

DANISH SYSTEMS INTEGRATION MARKET ANALYSIS, ORGANISATION SIZE

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987			
	LARGE	MEDIUM	SMALL	TOTAL
CIVIL GOVERNMENT				
MANUFACTURING		2	-	2
BANKING AND FINANCE (INCLUDING INSURANCE)		1	-	1
OTHER	1	1	-	2
TOTAL	1	4	-	5

EXHIBIT III-31

FINNISH SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE $M						
	1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT			1	1	2	3	44%
MANUFACTURING	3	4	6	10	14	17	41%
BANKING & FINANCE (INCLUDING INSURANCE)	1	2	3	4	5	6	43%
OTHER (TOTAL)	1	2	3	4	5	6	43%
TOTAL	5	8	13	19	26	32	45%

EXHIBIT III-32

FINNISH SYSTEMS INTEGRATION MARKET ANALYSIS, ORGANISATION SIZE

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987 LARGE	MEDIUM	SMALL	TOTAL
CIVIL GOVERNMENT				
MANUFACTURING	2	1	-	3
BANKING AND FINANCE (INCLUDING INSURANCE)		1	-	1
OTHER		1	-	1
TOTAL	2	3	-	5

EXHIBIT III-33

AUSTRIAN SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT			1	2	2	3	44%
MANUFACTURING	2	4	7	10	14	16	52%
BANKING & FINANCE (INCLUDING INSURANCE)	2	3	4	6	6	7	28%
OTHER (TOTAL)	2	3	5	6	8	9	35%
TOTAL	6	10	17	24	30	35	42%

EXHIBIT III-34

AUSTRIAN SYSTEMS INTEGRATION MARKET ANALYSIS, ORGANISATION SIZE

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987			
	LARGE	MEDIUM	SMALL	TOTAL
CIVIL GOVERNMENT				
MANUFACTURING		2	-	2
BANKING AND FINANCE (INCLUDING INSURANCE)		1	1	2
OTHER		2	-	2
TOTAL		5	1	6

EXHIBIT III-35

SWISS SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE $M						
	1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT			3	4	4	5	19%
MANUFACTURING	3	5	7	7	10	15	28%
BANKING & FINANCE (INCLUDING INSURANCE)	5	6	8	10	12	15	25%
OTHER (TOTAL)	2	4	5	6	8	10	38%
TOTAL	10	15	23	27	34	45	35%

EXHIBIT III-36

SWISS SYSTEMS INTEGRATION MARKET ANALYSIS, ORGANISATION SIZE

INDUSTRY SECTOR	MARKET ESTIMATE $M 1987 LARGE	MEDIUM	SMALL	TOTAL
CIVIL GOVERNMENT				
MANUFACTURING		2	1	3
BANKING AND FINANCE (INCLUDING INSURANCE)	2	2	1	5
OTHER		2	-	2
TOTAL	2	6	2	10

EXHIBIT III-37

SPANISH SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

INDUSTRY SECTOR	MARKET ESTIMATE $M						
	1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT			1	3	10	14	147%
MANUFACTURING	4	5	7	10	15	20	38%
BANKING & FINANCE (INCLUDING INSURANCE)	2	3	5	7	10	12	43%
OTHER (TOTAL)	2	3	6	8	11	13	45%
TOTAL	8	11	19	28	46	59	50%

EXHIBIT III-38

SPANISH SYSTEMS INTEGRATION MARKET ANALYSIS, ORGANISATION SIZE

MARKET ESTIMATE $M 1987

INDUSTRY SECTOR	LARGE	MEDIUM	SMALL	TOTAL
CIVIL GOVERNMENT				
MANUFACTURING		1	3	4
BANKING AND FINANCE (INCLUDING INSURANCE)		2		2
OTHER		1	1	2
TOTAL		4	4	8

EXHIBIT III-39

PORTUGUESE SYSTEMS INTEGRATION MARKET ANALYSIS 1987-1992

MARKET ESTIMATE $M

INDUSTRY SECTOR	1987	1988	1989	1990	1991	1992	AAGR
CIVIL GOVERNMENT				1	2	2	41%
MANUFACTURING			1	2	2	2	26%
BANKING & FINANCE (INCLUDING INSURANCE)		1	2	2	2	2	19%
OTHER (TOTAL)			1	1	1	2	26%
TOTAL	0	1	4	6	7	8	68%