CUSTOMER SERVICES

MARKET ANALYSIS AND FORECAST

EUROPE, 1992 - 1997

INPUT

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DECEMBER 1992

# CUSTOMER SERVICES MARKET ANALYSIS AND FORECAST, EUROPE

## 1992-1997



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(CECSP)

***Customer Services Market Analysis and Forecast, Europe, 1992-1997***



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# Abstract


This study provides a forecast for the growth of user expenditures on customer services in Europe covering the five year period 1992 to 1997.

Market forecasts are provided for the growth of the customer services market in sixteen Western European country markets. A separate forecast is also provided for Eastern Europe, taken as one group of countries.

The forecasts include the activities of three types of vendor active within the customer services market:

- Customer Services Vendors, defined to include:
  - Equipment and systems vendors
  - Dealers and distributors
  - Independent maintenance organisations (IMOs)

- Independent Software and Services Vendors

- Non-industry Vendors, consisting principally of Construction and Building Services companies.

Estimates for the customer services revenues earned in 1991 by the leading equipment vendors are provided, segmented by service sector and country market.

Forecasts provided in this study are presented in local European currencies, US dollars and ECU's.

# Table of Contents

# Table of Contents (Cont.)

# List of Exhibits

# List of Exhibits (Cont.)

V

# List of Exhibits (Cont.)

APPENDIXES

# List of Exhibits (Cont.)

# I
# Introduction

## A
## Objectives and Scope

This study is produced by INPUT as part of its 1992 Customer Services Programme in Europe.

The objectives of this report are to provide an analysis of user expenditures for customer services in Europe, an evaluation of the market size in 1991 and a five-year growth forecast for the period 1992 to 1997.

Further objectives are to:

- Estimate the size by major segment of the individual European country markets for customer services and provide a five-year growth forecast for each, for the period 1992 to 1997.
- Provide forecasts for six service sectors of the customer services market in Europe.
- Estimate the customer services revenues of the leading equipment vendors, segmented by service sector and country market.

Country markets included in Western Europe are:

| | |
|---|---|
| Austria | Italy |
| Belgium | The Netherlands |
| Denmark | Norway |
| France | Portugal |
| Finland | Spain |
| Germany | Sweden |
| Greece | Switzerland |
| Ireland | The United Kingdom. |

Countries aggregated into the Eastern European market are:

Baltic states (Estonia, Latvia, Lithuania)
Bulgaria
Czechoslovakia (now Czech and Slovak republics)
Hungary
Poland
Romania
Russian Federation
Ukraine
Republics which once formed Yugoslavia
Other Commonwealth of Independent States in Europe.

## B
## Methodology

INPUT approached the leading equipment vendors for details and confirmation of each company's customer services revenues. A proportion of vendors cooperated by providing data to INPUT.

Research to provide additional data contained within the study was conducted using the following sources of information:

- Vendor annual reports

- Company press releases

- Specialised data published by the computer market trade press.

INPUT's estimates and forecasts are based on analysis of the ongoing vendor and user research results, issued from (among other projects) the annual user satisfaction survey.

## C

## Economic Statistics

Details of the currency conversion rates and inflation assumptions used in the compilation of the forecasts in this report are contained in Appendix D.

## D

## Report Structure

The remaining chapters of this report are structured as follows:

- Chapter II is an executive overview which provides a summary of the study.
- Chapter III provides details of the market definitions and vendor delivery modes, including notes on the upgrading of the market perspective to enhance the presentation of the market opportunities available to vendors.
- Chapter IV provides an analysis of the overall customer services market in Europe.
- Chapter V provides an analysis of the customer services market in sixteen individual European country markets, plus Eastern Europe treated as one group, all expressed in local currencies, for the five-year period 1992 to 1997.
- Appendix A contains estimates of the customer services revenues of the 20 leading equipment vendors in Europe.
- Appendix B provides a reconciliation between INPUT's current market forecast and the previous market forecast made in 1991.
- Appendix C contains the U.S. dollar versions of the 1991 country market sizes and of the forecasts for 1992 to 1997.
- Appendix D provides the Economic Assumptions used in sizing and forecasting the Customer Services sectors.

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# II
# Executive Overview

## A
## Customer Services Opens onto the Wider Market-Place

Customer services was in the past a clearly defined and separate set of activities, which related to the after-sales support of proprietary hardware configurations. Because of this after-care orientation, it had little overlap with other computer services sectors, many of which are associated with the development of new business applications.

Because of the highly technical content of many services related to the care of complex devices, customer services had developed a culture which was particular to its own organisational requirements. It had thus become somewhat isolated from the strategic movements in the information systems (IS) industry.

Customer services has now come to need to re-evaluate its role in the strategy of the equipment and systems manufacturers and suppliers for the following reasons:

- Falling hardware maintenance revenues threaten the life of its main revenue stream.
- Competition from independent maintenance vendors and companies in the distribution channel (dealers and distributors) has increased and will continue to do.
- The industry move to open systems based on smaller (downsized) networked configurations has opened the market to all sorts of new service opportunities in the non-maintenance sector.

What customer services vendors need to know to continue to operate profitably in the market-place of the 1990s are the answers to the following questions:

- What are the trends and opportunities in both maintenance and non-maintenance equipment-related sectors?
- What are the strategies of their traditional competitors?
- What types of new competitor can be expected in the wider market-place and what strategies are they adopting in the face of the overall trends in the industry over the next five years?

The customer services market report provides INPUT's quantitative assessment of the market and describes the opportunities present under three headings:

- Equipment-related service such as environmental services and maintenance
- Other non-maintenance services in which customer service vendors are traditionally active, such as system software support and training services
- Newer service areas in which other types of competitor are already firmly entrenched.

The overall market for customer services in Europe will grow from $27.3 billion in 1991 to an anticipated $28.1 billion in 1992, i.e., with a small growth rate of 3%. This is in contrast to total information services market growth of 8%, taking the market for all types of software and services in Europe from $102 billion in 1991 up to $110 billion in 1992.

In addition to this $28 billion of customer services expenditure, in 1992 customer services vendors are expected to gain $4.4 billion of other services revenue (excluding systems and applications software). This portion of their revenues will grow at an overall 9% over the $4.05 billion gained in 1991. The customer services vendors are therefore growing their non-equipment related service revenues at a slightly higher rate than the market as a whole; i.e., they are slowly increasing their market share.

Of the $85 billion of 1992 European services expenditure (excluding all software products), customer services vendors will account for $32.5 billion or 38%.

In addition to the $28 billion of external expenditures anticipated for 1992, there is an estimated $8.4 billion of captive market expenditure on customer services. This expenditure represents bundled system software support costs and user self-service costs for the in-house provision of all types of customer services.

The total potential market for customer services in Europe for 1992 is thus over $36 billion.

Exhibit II-1 summarises the key growth rates of the sector in 1992.

EXHIBIT II-1

**Customer Services Market in Europe**

Key Parameters for 1992

- Growth over 1991 of 3%
- Non-maintenance services growing at 6% over 1991
- Multivendor maintenance growing at 11%
- Education and training market declines in 1992

## B

## Developing New Perspectives on Customer Services

The customer services market has been segmented by INPUT into six service sectors for 1992. These six sectors are identified by Exhibit II-2 and defined as follows:

- Hardware Maintenance: the repair or routine preventive maintenance of computer systems or associated hardware, including associated support activities. This sector includes communications processors and LANs but excludes PABX equipment. It includes contracts for combined support of hardware and software.

- Environmental Services: This is a new sector for 1992. It contains all service revenues associated with changes to the environment of the computer system platform including computer rooms, cabling, networks, and the buildings containing the systems. It also covers environmental planning and audit services.

- Systems Software Support: Software maintenance activities relating to systems software (not applications), including associated support activities.

- Professional Services: This sector of the customer services market relates to the provision of professional services concerned with system platform operations. Examples are

  - Consultancy services
  - Network services (operations and administration)
  - Systems software evaluation
  - Problem management services
  - Software development
  - Staff hire.

- Training and Education: Within the definition of customer services, this sector of the market relates to those elements of training and education concerned with system platform operations. Activities relate to computer equipment or systems software, for example, operations training in the use of systems software.

EXHIBIT II-2

## Customer Services Market Definition - Service Sector

- Equipment Services
  - Hardware Service
  - Environmental Services

- Other Customer Services
  - Systems Software Support
  - Training and Education
  - Professional Services
  - Business Continuity Services

- Business Continuity Services: This, the second new sector for 1992, comprises three types of service associated with keeping a user's system or network platforms available in the face of major incidents such as fire, flood, terrorist attack, etc.:

  - Contingency planning consultancy services

  - Distaster Recovery Services (DRS)

  - Restart Services (services aimed at restoring a damaged user system to its original state in the shortest possible time).

## C
## The Customer Services Market in Europe

### 1. Market Growth 1992 to 1997

Exhibit II-3 provides the forecast for the growth of market size for external customer services in Europe.

User expenditure for customer services in Europe will grow from the $28 billion anticipated for 1992 at just over 4% CAGR to reach $34 billion by 1997. This forecast shows a reduction of over 3% when compared to the CAGR forecast in INPUT's 1991 report. This reduction represents worsening long-term economic trends detected during 1992 in several European countries—for example, the U.K., Italy, Spain and Germany.

Included within this forecast are user expenditures gained by three categories of vendor:

- Customer services vendors:
  - Equipment vendors
  - Independent maintenance vendors
  - Dealers and distributors.

- Independent software and services vendors:
  - Customer services revenues resulting from indirect equipment sales
  - Focused activities, for example, systems platform level training.

- Non-industry vendors:
  - Building and construction companies providing environmental facilities dedicated to computer installation as part of major construction projects

  - Specialist building services companies, for example, air conditioning suppliers which also provide installation services.

Market shares for each service sector are as follows:

- Hardware service accounts for an anticipated 56% of user expenditure in 1992, reducing to 51% by 1997.
- Environmental services accounts for 28%, increasing to 30% in 1997.
- Systems software support accounts for under 7% but increasing to over 8% in 1997.
- Education and training services account for under 5% in 1992 and will stay at that level.
- Professional services accounts for 3% in 1992 increasing to 4% by 1997.
- Business continuity services will account for just over 1% in 1992 but will rise to just under 3% by 1997.

EXHIBIT II-3

## European Customer Services Market Growth, 1992-1997

| | ($ Billions) | | |
|---|---|---|---|
| SERVICE SECTOR | 1992 | 1997 | CAGR 1992-1997 (Percent) |
| Hardware Service | 15.9 | 17.4 | 1.9 |
| Environmental Services | 7.9 | 10.2 | 5.4 |
| Systems Software Support | 1.9 | 2.8 | 8.1 |
| Education and Training | 1.3 | 1.6 | 3.7 |
| Professional Services | 0.8 | 1.4 | 10.9 |
| Business Continuity Services | 0.4 | 0.9 | 19.6 |
| **TOTAL (Rounded)** | **28.1** | **34.3** | **4.1** |
| **All Other Information Services** | **58.9** | **98.1** | **10.8** |

The principal reasons why hardware service only declines in market share relatively slowly over the five-year period are as follows:

- Vendors are continuing to offer combined service offerings which include hardware and software support.
- More desktop devices will be linked in to local and corporate networks to support mission-critical applications. They will thus qualify for a maintenance contract where none existed for them as stand-alone devices.

### 2. Market Growth by Vendor Type—1992 to 1997

Exhibit II-4 provides INPUT's forecast for the growth of user expenditure for customer services segmented by vendor type.

Industry vendors account for 78% of user expenditure for customer services in Europe, the remainder of user expenditure being with non-industry vendors.

EXHIBIT II-4

**European Customer Services Market Sector Growth 1992 - 1997**

| | ($ Billions) | | |
|---|---|---|---|
| MARKET SECTOR | 1992 | 1997 | CAGR 1992-1997 (Percent) |
| Customer Services vendors | 20.9 | 25.0 | 3.6 |
| Independent Software & Services vendors | 1.0 | 1.8 | 11.6 |
| Non-industry vendors | 6.2 | 7.5 | 3.9 |
| **TOTAL** | **28.1** | **34.3** | **4.1** |

The market structure in 1992, in terms of contribution by vendor type, is as follows:

- Industry vendors
  - Equipment vendors account for about 65% of user expenditure.
  - Independent maintenance vendors account for about 7%.

  - Dealers and distributors account for under 2%.
  - Independent software and services vendors account for under 4%.

- Non-industry vendors
  - Specialist building product companies account for 6% of user expenditure.
  - Building and construction companies account for 16% of user expenditure.

The exhibit shows the customers services vendors (dominated by the equipment suppliers) losing market share to the independent software and services vendors as non-maintenance activities become more important. Within the customer services vendor group equipment vendors will lose market share to hold around 63% in 1997, as large distributors and multinational independent maintainers move more aggressively into the general services business.

Equipment suppliers are expected to maintain their presence in computer services overall by increasing revenues gained in other services sector, such as network services, environmental services, systems integration and systems operations.

## D

## Leading Equipment Vendor Customer Services Revenues

The 1991 customer services revenues of the leading five equipment vendors in Europe are listed in Exhibit II-5, together with the revenues gained from all other types of service.

The leading five equipment vendors between them account for 36% of user expenditure for customer services in Europe.

The revenues of the leading three equipment vendors are presented in more detail in Exhibits II-6 to II-8 as follows:

- IBM - Exhibit II-6
- Digital - Exhibit II-7
- Siemens Nixdorf - Exhibit II-8.

These more detailed exhibits indicate the degree of dependency on hardware maintenance revenues that the equipment vendor customer services organisations still retain. Much progress has been made in developing non-maintenance revenue streams, but the strong dependence on hardware maintenance revenues remains. For example:

- IBM obtains 79% (83% in 1990) of customer services revenues in Europe from hardware maintenance.

EXHIBIT II-5

**European Customer Services**
**Leading Equipment Vendor Revenues 1991**

| Vendor | 1991 Revenues ($ Millions) | |
|---|---|---|
| | Customer Services | All Other Services |
| IBM | 3,665 | 1,640 |
| Digital | 2,430 | 270 |
| Siemens Nixdorf | 1,535 | 205 |
| Bull | 1,120 | 375 |
| AT&T/NCR | 1,040 | 255 |

- Digital has continued to be successful at developing non-maintenance revenues, relying on maintenance for 65% (61% in 1990) of customer services revenues.

EXHIBIT II-6

**IBM**
**1991 European Customer Services Revenues**

| SERVICE SECTOR | REVENUE ($ Millions) |
|---|---|
| Hardware Service | 2,910 |
| Environmental Services | 300 |
| Systems Software Support | Bundled |
| Education and Training | 270 |
| Professional Services | 180 |
| Business Continuity Services | 6 |
| **TOTAL (Rounded)** | **3,665** |

- Siemens Nixdorf is the most heavily dependent of the three obtaining about 85% (87% in 1990) of its customer services revenues from this activity.

EXHIBIT II-7

**Digital**
**1991 European Customer Services Revenues**

| SERVICE SECTOR | REVENUE ($ Millions) |
| --- | --- |
| Hardware Service | 1,585 |
| Environmental Services | 315 |
| Systems Software Support | 270 |
| Education and Training | 160 |
| Professional Services | 85 |
| Business Continuity Services | 16 |
| **TOTAL (Rounded)** | **2,430** |

EXHIBIT II-8

**Siemens Nixdorf**
**1991 European Customer Services Revenues**

| SERVICE SECTOR | REVENUE ($ Millions) |
| --- | --- |
| Hardware Service | 1,310 |
| Environmental Services | 95 |
| Systems Software Support | - |
| Education and Training | 85 |
| Professional Services | 35 |
| Business Continuity Services | 10 |
| **TOTAL (Rounded)** | **1,535** |

## E

## Country Market Growth 1992 to 1997

Exhibit II-9 provides a forecast for the growth of user expenditure for customer services in the four largest country markets in Europe.

The combined share of these four largest country markets accounts for 68% of user expenditure for customer services in Europe. The percentage accounted for by each major country market is as follows:

- France - 17% (16% in 1991)
- Germany - 19% (18%)
- United Kingdom - 20% (22%)
- Italy - 12% (12%).

IBM is the leading equipment vendor, in terms of customer services revenues, in three of the four largest country markets in Europe. The exception to IBM's market leadership is provided by the German market, where, as a result of acquiring Nixdorf, Siemens Nixdorf relegated IBM to second place. In France and Italy the local national equipment manufacturers, Bull and Olivetti, respectively, are in second place. In the United Kingdom, the British managed ICL, now owned by Fujitsu of Japan, is in third place behind IBM and Digital Equipment.

EXHIBIT II-9

### Customer Services Country Market Growth, 1992-1997

| | ($ Billions) | | |
|---|---|---|---|
| COUNTRY MARKET | 1992 | 1997 | CAGR 1992-1997 (Percent) |
| France | 4.7 | 5.5 | 3.2 |
| Germany | 5.5 | 6.4 | 3.1 |
| United Kingdom | 5.6 | 6.6 | 3.5 |
| Italy | 3.5 | 4.3 | 4.4 |
| Rest of Europe | 8.9 | 11.4 | 5.2 |
| **TOTAL** | **28.1** | **34.3** | **4.1** |

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# III
# The Customer Services Market and Its Vendor Groups

## A
## Market Definition

### 1. Definition of the Market Segments

INPUT's definition of the customer services market and its relationship to the hardware products market are illustrated in schematic form in Exhibit III-1. This exhibit illustrates the overall structure of the hardware products or equipment market for systems, and the relationship between customer services and the other segments of the equipment market.

Included within INPUT's definition of customer services are six service sectors:

- Hardware maintenance
- Environmental services
- Systems software support
- Education and training
- Other professional services
- Business continuity services.

Excluded from INPUT's definition of the customer services market, as essentially product markets, are:

- Sales of spare parts
- Media and supplies sales
- Hardware product sales themselves.

EXHIBIT III-1

## Customer Services Market Structure

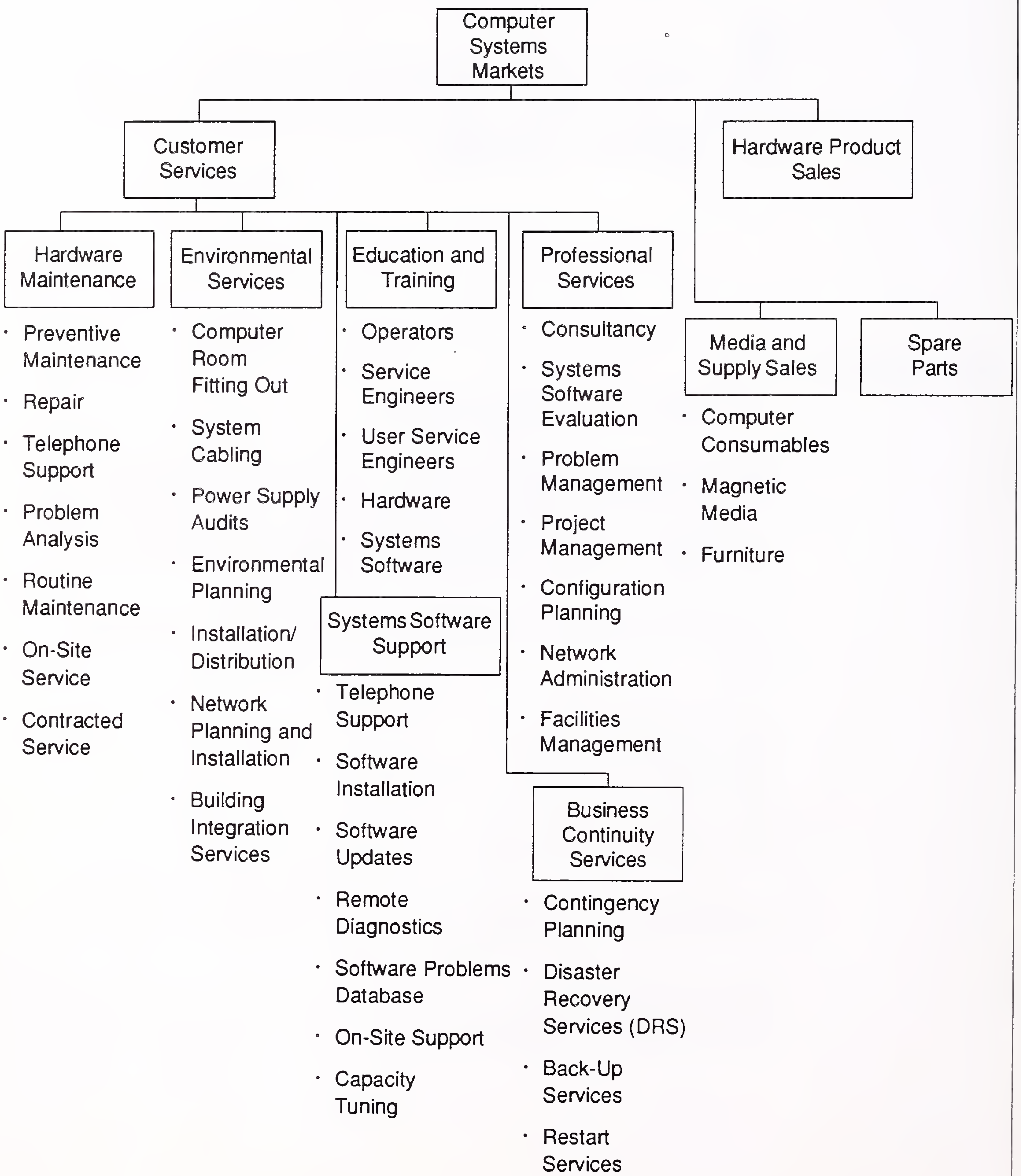
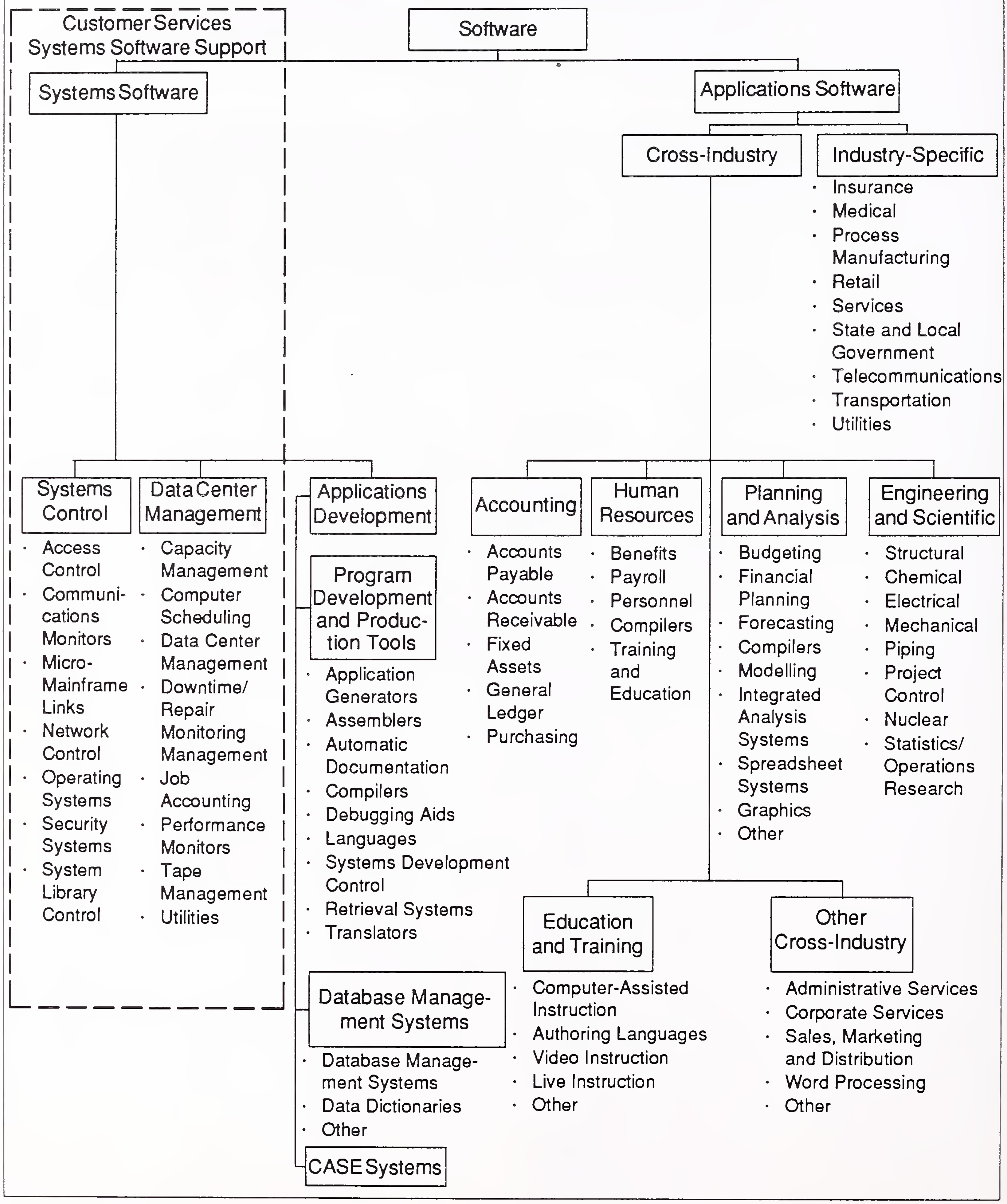


Exhibit III-1 indicates the principal activities undertaken within each of the six service sectors. In each service sector, INPUT's definition of user expenditure includes only those services provided to users by an external organization on a chargeable basis. Services provided by subsidiaries or internal resources are considered unavailable for open tender. They are therefore excluded from the open market but included in the captive market potential.

Software support activities that are included in the customer services market are those activities related to the support of systems software. Exhibit III-2 illustrates INPUT's definition of the software products market. Aspects of software support included in the customer services market are restricted to those areas highlighted in the exhibit with the rectangular box. They relate to system control and data centre management software products.

EXHIBIT III-2

## Software Products Market Structure



The areas of professional services, and education and training are both parts of more widely defined computer services markets. Only those professional services or education and training services directly associated with the support of computer or network operations, or operating systems software are included as part of the customer services market. To distinguish them from environmental services, these professional services are normally restricted to planning, design or management services, without any installation of platform or ancillary equipment.

The breakdown of user expenditure for customer services can be categorized in a number of ways. INPUT for the purposes of this report defines revenue sources under two such headings:

- The first is based on the six service sectors dependent on the type of activity that generates the revenue
- The second defines market segments dependent on the type of vendor providing the service.

### 2. Service Sector Definitions

Service sectors are defined by INPUT as follows:

- Hardware maintenance: the repair or routine preventive maintenance of computer systems hardware or hardware components. Included are associated support activities such as telephone support, problem analysis and remote diagnostics. Contracts may be for one or more years; alternating repairs may be effected on an ad hoc basis.
- Environmental services are defined as all planning and implementation services which affect the environments in which computer platforms are expected to run. For these purposes, environment can mean any of the following:
  - The computer room fixtures and fittings
  - Cabling between computers and other devices in a system or network
  - Physical environment, such as: electrical power, air conditioning, water cooling, smoke or fire detection equipments
  - Network attachments
  - Buildings in which computers or network devices or terminals must reside.

Environmental services normally involve the installation, upgrade, repair or de-installation of some piece of equipment, but may be restricted to planning only.

- Systems software service/support: software maintenance activities that relate to systems software (not applications software). Included are associated support activities such as telephone support, problem analysis and software diagnostics.

- Education and training: within the definition of customer services, this sector of the market refers to those elements of education and training that relate to the systems platform or network and its operation, i.e. to computer/network hardware or network operating systems software (not applications). These aspects of customer service would normally include:

    - User hardware maintenance training, or training in the housekeeping for and support of maintenance teams

    - User training in operating systems software maintenance or in the housekeeping and support of maintenance teams

    - Operator training related to the use of hardware or network operating systems software.

- Professional services: within the definition of customer services, this sector of the market refers to those elements of professional services that are concerned with the support of the systems platform or network and its operating environment, including areas such as:

    - Consultancy
    - Network Administration
    - System Software Evaluation
    - Problems Management
    - Project Management
    - Configuration or Capacity Planning.

- Business Continuity Services include a number of service elements related to keeping a business running in the event of a major incident which temporarily puts its IT platform or network completely out of action. They include:

    - Planning for such a contingency

    - Disaster Recovery Services

    - Back-up services for magnetic or optical media

- Restart services, covering all activities which contribute to reinstating on a permanent basis the platform or network which as suffered the major incident.

These services can be sold together in any combination or as free-standing services.

### 3. Service Vendor Definitions

INPUT's definitions of the three primary categories of customer services vendor are as follows:

- Equipment vendors are defined as companies that manufacture computer hardware/equipment and may service equipment manufactured by themselves or other equipment manufacturers.

- Independent maintenance vendors are defined as companies that service computer equipment and are independent of the manufacturer or agent who sold the equipment.

- Dealers and distributors are defined as vendors that service equipment that is sold by them, either as an agent of the equipment manufacturer or as a value-added reseller (VAR).

## B

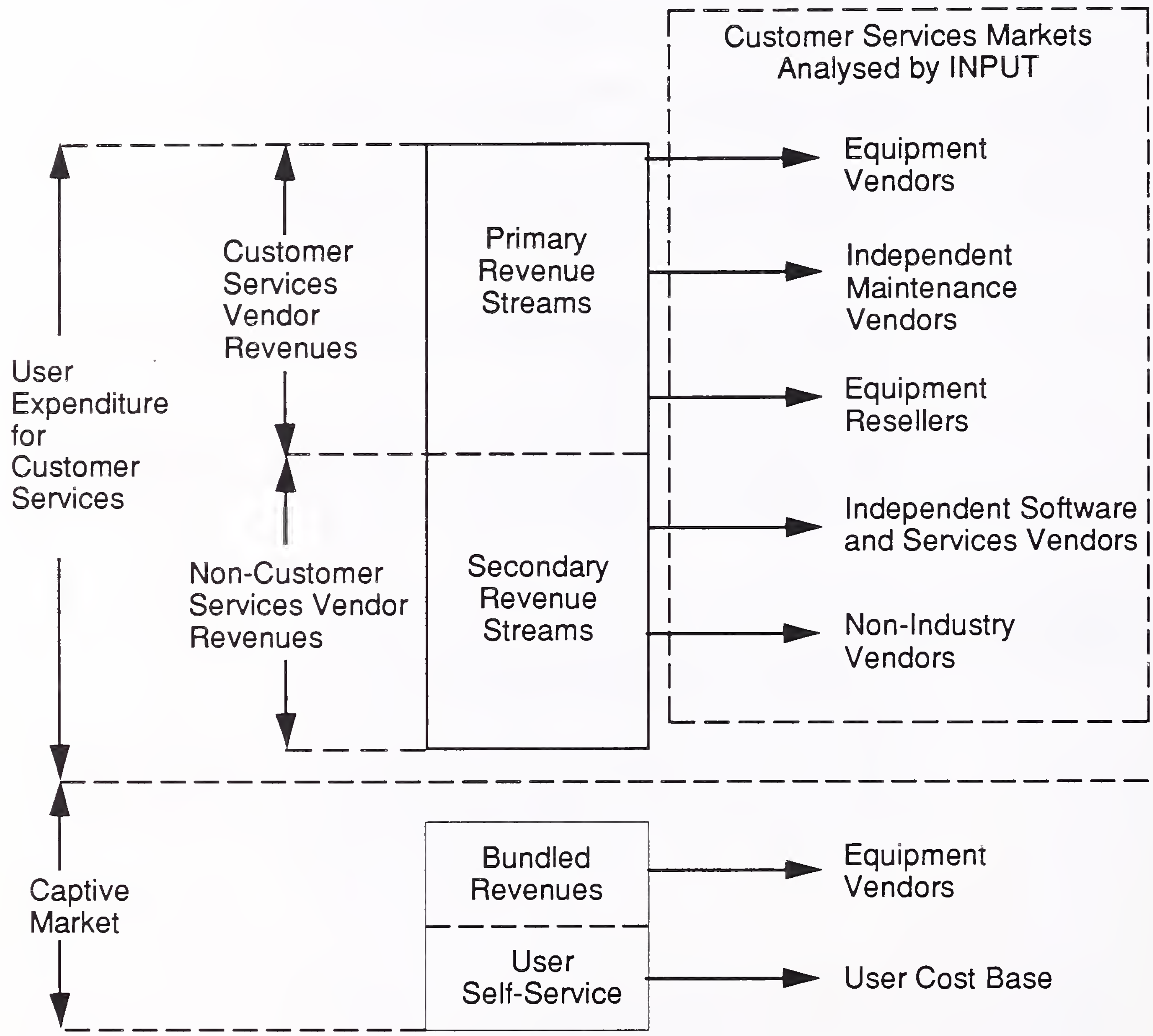
## Market Structure and Delivery Modes

### 1. Customer Services Revenue Streams

Exhibit III-3 provides a diagrammatic representation of the total customer services market. This model indicates the captive and non-captive revenue components of the total customer services market and the various revenue streams that combine to form the total market.

EXHIBIT III-3

## Customer Services Revenue Streams



User expenditure for customer services forms that portion of the market where users are provided with vendor services for which they pay separately. This portion of the market sub-divides into two components:

- Customer services vendor revenues. This portion of the customer services market refers to vendors for whom customer services revenues are considered to be a primary revenue stream:
  - Equipment Vendors
  - Independent Maintenance Companies
  - The Dealer/Distributor portion of the indirect equipment resellers market.
- Non-customer services vendor revenues refer to user expenditure, for customer services, with vendors for whom customer services revenues are not considered to be a primary stream. This portion of the market results from the following activities:
  - The system integration (SI) and turnkey systems segments of the indirect equipment resellers market. In a minority of cases, these vendors provide service and support for the system platform.
  - Software and services vendors whose primary source of revenue results from such items as custom software development will sometimes also provide systems support.
  - Non-industry vendors such as building/construction companies or specialist product and building services companies that provide environmental services. Provision of these services is a secondary aspect to the vendor's main line of business; for example, a specialist air conditioning company might service many industry sectors, with systems for a whole range of applications besides computer room air-conditioning.

The captive portion of the customer services market relates to the provision of services for which the user does not pay separately. For example:

- Systems software support charges may be bundled as part of the software license fee rather than paid for separately by the user. Equipment vendors who wholly or partly charge for systems software support in this way include IBM, ICL and Bull.
- Users who wholly or partly provide their own customer services from the use of in-house resources. In this case the charges for services are accrued as an in-house cost and therefore do not result in external expenditure.

## 2. Total Customer Services Market in Western Europe, 1992

An estimate for the size of the total customer services market for 1992 in Europe is provided by Exhibit III-4. This estimate includes both open market user expenditure for services paid for separately and the captive portion of the market.

EXHIBIT III-4

### European Market Size Customer Services, 1992 ($ Millions)

| | Revenue Stream / Service Sector | HARDWARE SERVICE | ENVIRONMENTAL SERVICES | SYSTEMS SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROFESSIONAL SERVICES | BUSINESS CONTINUITY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|---|
| USER EXPENDITURE | Customer Services Vendor Revenues | 15,740 | 1,670 | 1,340 | 1,160 | 840 | 160 | 20,910 | 4,410 |
| | · Equipment Vendors | 13,425 | 1,600 | 1,270 | 1,130 | 800 | 137 | 18,362 | 4,070 |
| | · Dealers and Distributors | 415 | 25 | 40 | 20 | 15 | 5 | 520 | 300 |
| | · Independent Maintenance Vendors | 1,900 | 45 | 30 | 10 | 25 | 18 | 2,028 | 40 |
| | Independent Software & Service Vendor Customer Services Revenues | 150 | - | 530 | 140 | - | 190 | 1,010 | 51,880 |
| | · From Indirect Equipment Sales | 150 | - | 50 | - | - | - | 200 | - |
| | · Focused Activities | - | - | 480 | 140 | - | 190 | 810 | 51,880 |
| | Non-Industry Vendor Customer Services Revenues | - | 6,200 | - | - | - | - | 6,200 | 610 |
| | TOTAL (ROUNDED) | 15,890 | 7,870 | 1,870 | 1,300 | 840 | 350 | 28,120 | 56,900 |
| CAPTIVE | BUNDLED | - | - | 575 | - | - | - | 575 | - |
| | SELF-SERVICE | 150 | 4,000 | 125 | 2,500 | 1,000 | - | 7,775 | - |
| | TOTAL (ROUNDED) | 150 | 4,000 | 700 | 2,500 | 1,000 | - | 8,350 | - |
| | TOTAL POTENTIAL MARKET (ROUNDED) | 16,040 | 11,870 | 2,570 | 3,800 | 1,840 | 350 | 36,470 | 56,900 |

Exhibit III-4 indicates that in 1992 the total customer services market represented almost $37 billion. User expenditure for customer services represents about 78% of this total, the remaining 22% forming the captive portion of the market.

User expenditure for customer services in the open market, that is services paid for separately, totals about $28.8 billion. Of this amount about 72% of user expenditure is with customer services vendors, for whom customer services is considered a primary source of revenue. The remaining user expenditure is split between just under 3% allocated to software and services vendors as a by-product of their primary business activities, and just over 25% earned by non-industry vendors.

The user expenditure for customer services provided by non-industry vendors is principally for environmental services provided by building/ construction companies, and specialist building services and product companies. These companies provide environmental services to computer users often as a secondary activity to their normal business activities.

The captive portion of the customer services market is in two parts.

- The first part is systems software support revenues, collected as an item which is bundled with the software licence fee, accounting for over 7% of the captive market.

- The second and larger part of the captive portion of the customer services market results from user self service and the primary area in which this is effective is the in-house provision of environmental services. User self service accounts for 93% of the captive portion of the market, of which almost 52% is related to the provision of environmental services.

The high environmental services content of user self-service is estimated to represent over $4.1 billion.

In overall terms user expenditure for customer services comprises about:

- 56% for hardware maintenance

- 28% for environmental services

- 7% for systems software support

- 5% for education and training

- 3% for other professional services
- 1% for business continuity services.

Compared with the figure indicated for user expenditure the captive portion of the customer services market is made up as follows:

- 23% for hardware maintenance
- 52% for environmental services
- 9% for systems software support
- 3% for education and training
- 13% for other professional services
- 0% for business continuity services.

### 3. Indirect Sales Channels

Exhibit III-5 indicates an assessment of the distribution of customer services revenues that accrue as a result of equipment marketed through indirect sales channels.

Four primary indirect sales channels are illustrated by Exhibit III-5:

- Systems Integrators
- Turnkey Suppliers
- Dealers/Distributors
- OEMs.

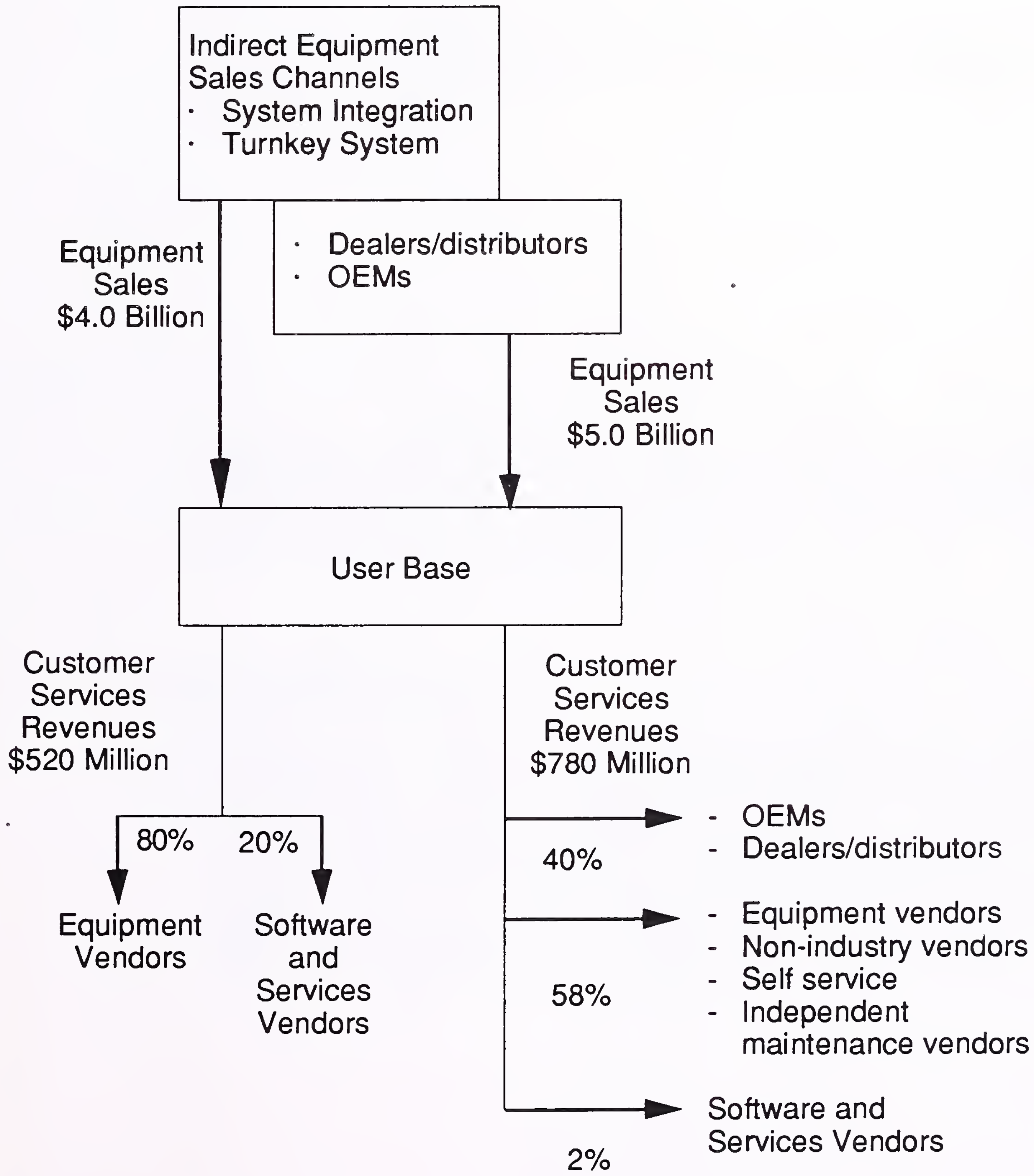
The total value of equipment sold through indirect sales channels in 1992 is estimated to be about $9 billion in Europe and the customer services revenues attributed to this level of sales is about $1.3 billion.

About 40% of these customer services revenues are the result of indirect sales through systems integrators or turnkey suppliers. A majority of the maintenance component of these revenues is collected by equipment vendors, due to the high percentage of indirect sales partners who are non-servicing.

By comparison the percentage of customer services revenues which results from sales of equipment through dealers/distributors and OEMs and are collected by equipment vendors is much lower, most likely less than 10%. The larger portion of customer services revenues due to sales through these channels is obtained by the independent maintenance companies.

EXHIBIT III-5

## Customer Services Revenues from Indirect Sales Channels, 1992



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# IV
# European Customer Services Market, 1992-1997

## A
## Introduction

An overall forecast for the growth of user expenditure for customer services in Europe is presented in this section of the study. Forecasts are presented in U.S. dollars and ECUs for both country market and service sector growth, converted from local currencies.

## B
## Leading Vendor Customer Services Revenues

Estimates for the 1991 customer services revenues of the twenty leading customer services vendors in Europe are provided by Exhibit IV-1. The year was notable for the fact that the top three independent maintenance organisations in Europe—Granada, Thomainfor and Getronics—now appear in INPUT's Top 20 ranking. As shown later in the report, in their domestic markets these vendors can now all be seen in the Top 10 customer services market rankings. They have achieved these positions principally through fast revenue expansion using the acquisition route.

EXHIBIT IV-1

## Top 20 Leading Service Vendors by European Customer Services Revenues, 1991

| | REVENUES ($ MILLIONS) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEMS SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROFES-SIONAL SERVICES | BUSINESS CONTIN-UITY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
| IBM | 2,910 | 300 | - | 269 | 180 | 6 | 3,665 | 1640 |
| Digital | 1,587 | 315 | 269 | 159 | 83 | 17 | 2,430 | 270 |
| Siemens Nixdorf | 1,311 | 93 | 1 | 86 | 35 | 9 | 1,535 | 205 |
| Bull | 895 | 45 | 75 | 65 | 33 | 7 | 1,120 | 375 |
| AT&T/NCR | 727 | 101 | 26 | 112 | 66 | 8 | 1,040 | 255 |
| Olivetti | 904 | 50 | 32 | 20 | 25 | 4 | 1,036 | 250 |
| ICL | 790 | 73 | 62 | 29 | 14 | - | 967 | 300 |
| Unisys | 601 | 124 | 72 | 69 | 46 | 14 | 925 | 262 |
| Hewlett-Packard | 566 | 30 | 63 | 45 | 30 | 10 | 744 | - |
| PrimeService | 326 | 68 | 85 | 55 | 31 | 1 | 566 | - |
| Memorex | 389 | - | - | - | - | - | 389 | - |
| Wang | 236 | 32 | 45 | 32 | 28 | - | 373 | - |
| Granada | 238 | 19 | - | - | - | - | 257 | - |
| Getronics | 96 | 37 | 43 | 4 | 48 | 10 | 238 | 27 |
| Thomainfor | 225 | - | - | - | - | - | 225 | - |
| Sun Microsystems | 189 | 13 | 4 | 6 | 2 | - | 214 | 13 |
| Rank Xerox | 184 | 2 | 2 | 2 | 2 | - | 193 | - |
| Amdahl | 125 | 4 | 20 | 10 | 8 | 2 | 169 | - |
| Tandem | 119 | 10 | 4 | 4 | 2 | - | 139 | - |
| Comparex | 120 | - | - | - | - | - | 120 | - |

Note: Totals may not add due to rounding.

C

## Customer Services Market in Europe

### 1. Country Market Growth 1992-1997

Exhibit IV-2 provides estimates for the growth of the customer services market in the sixteen Western European country markets and in Eastern Europe over the five year period 1992 to 1997, converted to U.S. dollars from local currencies.

The growth of the customer services market in Europe has been severely marked down by INPUT to take account of the effects of economic recession. Growth figures provided by Exhibit IV-2 include an allowance for inflation which at the overall European level is calculated at about 4%, (a similar figure was used in 1991).

The overall market growth has decreased by around 1% to the projected figure of under 4% CAGR.

The four largest country markets of France, Germany, the United Kingdom and Italy account for 69% of user expenditure for customer services in Europe.

In overall European terms the customer services market is estimated at $28 billion in 1992 and is forecast to grow at 3.9% CAGR to reach approximately $34 billion by 1997.

Exhibit IV-3 provides a forecast for the growth of user expenditure for customer services in ECUs converted from local currency.

EXHIBIT IV-2

## Country Market Growth
## Customer Services, 1992-1997 (U.S. Dollars)

| | Market Size ($ Millions) | | | | |
|---|---|---|---|---|---|
| COUNTRY MARKET | 1991 | GROWTH 1991-1992 (Percent) | 1992 | 1997 | CAGR 1992-1997 (Percent) |
| France | 4,628 | 2.2 | 4,730 | 5,330 | 2.4 |
| Germany | 5,309 | 3.1 | 5,474 | 6,370 | 3.1 |
| United Kingdom | 5,538 | 0.9 | 5,590 | 6,640 | 3.5 |
| Italy | 3,365 | 3.2 | 3,474 | 4,300 | 4.4 |
| Sweden | 1,101 | 6.1 | 1,168 | 1,460 | 4.6 |
| Denmark | 585 | 1.0 | 591 | 680 | 2.9 |
| Norway | 599 | 3.5 | 620 | 750 | 3.9 |
| Finland | 455 | 3.3 | 470 | 560 | 3.6 |
| Netherlands | 1,626 | 3.9 | 1,690 | 2,190 | 5.3 |
| Belgium/ Luxemburg | 721 | 5.0 | 757 | 950 | 4.7 |
| Spain | 1,211 | 7.8 | 1,305 | 1,830 | 7.0 |
| Switzerland | 1,113 | 2.5 | 1,141 | 1,360 | 3.6 |
| Austria | 491 | 2.9 | 505 | 600 | 3.5 |
| Portugal | 131 | 10.7 | 145 | 230 | 9.7 |
| Greece | 61 | 8.2 | 66 | 95 | 7.6 |
| Ireland | 137 | 6.6 | 146 | 187 | 5.1 |
| Eastern Europe | 240 | 5.0 | 252 | 520 | 15.6 |
| **TOTALS** | **27,311** | **3.0** | **28,124** | **34,052** | **3.9** |

Note: Totals may not add due to rounding.
CAGRs calculated in local currency.

EXHIBIT IV-3

## Country Market Growth
## Customer Services, 1992-1997 (ECUs)

| | Market Size (ECU Millions) | | | | |
|---|---|---|---|---|---|
| COUNTRY MARKET | 1991 | GROWTH 1991-1992 (PERCENT) | 1992 | 1997 | CAGR 1992-1997 (PERCENT) |
| France | 3,454 | 2.2 | 3,530 | 3,978 | 2.4 |
| Germany | 3,962 | 3.1 | 4,085 | 4,754 | 3.1 |
| United Kingdom | 4,133 | 0.9 | 4,172 | 4,955 | 3.5 |
| Italy | 2,511 | 3.2 | 2,593 | 3,209 | 4.4 |
| Sweden | 822 | 6.1 | 872 | 1,090 | 4.6 |
| Denmark | 437 | 1.0 | 441 | 507 | 2.9 |
| Norway | 447 | 3.5 | 463 | 560 | 3.9 |
| Finland | 340 | 3.3 | 351 | 418 | 3.6 |
| Netherlands | 1,213 | 3.9 | 1,261 | 1,634 | 5.3 |
| Belgium/ Luxemburg | 538 | 5.0 | 565 | 709 | 4.7 |
| Spain | 904 | 7.8 | 974 | 1,366 | 7.0 |
| Switzerland | 831 | 2.5 | 851 | 1,015 | 3.6 |
| Austria | 366 | 2.9 | 377 | 448 | 3.5 |
| Portugal | 98 | 10.7 | 108 | 172 | 9.7 |
| Greece | 46 | 8.2 | 49 | 71 | 7.6 |
| Ireland | 102 | 6.6 | 109 | 140 | 5.1 |
| Eastern Europe | 179 | 5.0 | 188 | 388 | 15.6 |
| **TOTALS** | **20,381** | **3.0** | **20,988** | **25,412** | **3.9** |

Note: Totals may not add due to rounding.

CAGRs calculated in local currency.

## 2. Service Sector Growth 1992-1997

Exhibit IV-4 provides a forecast for the growth of user expenditure for customer services in Europe segmented by service sector. Data presented in this exhibit has been converted to U.S. dollars from local currencies.

The growth of hardware service in Europe is forecast at just under 2% CAGR over the five-year period 1992 to 1997. However, this growth figure includes an allowance for inflation of approximately 4% indicating that growth of the hardware service market is declining in real terms, about a 2% decline through 1997.

In 1991 user expenditure for hardware maintenance represented 56% of the total customer services market. This figure is forecast to reduce to 51% by 1997.

Growth in the non-maintenance service sectors remains healthier than for maintenance itself. User expenditure in these sectors is forecast to grow at about 6% CAGR, a rate that is only slightly greater than the estimated rate of inflation overall in Europe.

The proportion of user expenditure for non-maintenance services is as follows:

- Systems software support; In 1992 user expenditure is estimated at about 7% of the total for customer services, growing to approximately 8% by 1997.

- Environmental services; In 1992 user expenditure is estimated at 28% of the total for customer services, growing to about 30% by 1997.

- Education and Training; In 1992 user expenditure is estimated at under 5% of the total for customer services and is falling slowly and will account for the same proportion in 1997.

Exhibit IV-5 provides a forecast for the growth of user expenditure for customer services expressed in ECUs. Data in this exhibit is segmented by service sector and has been converted from local currency to ECUs.

EXHIBIT IV-4

## Customer Services Market Forecast, 1992-1997
## Europe (U.S. Dollars)

| SERVICE SECTOR | Market Size ($ Millions) 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
|---|---|---|---|---|---|---|---|---|---|
| Hardware Service | 15,685 | 1 | 15,889 | 16,160 | 16,440 | 16,720 | 17,040 | 17,425 | 2 |
| Environmental Services | 7,501 | 5 | 7,872 | 8,240 | 8,660 | 9,110 | 9,610 | 10,220 | 5 |
| Systems Software Support | 1,730 | 8 | 1,869 | 2,020 | 2,200 | 2,380 | 2,565 | 2,765 | 8 |
| Education and Training | 1,348 | -4 | 1,300 | 1,305 | 1,330 | 1,375 | 1,450 | 1,560 | 4 |
| Other Professional Services | 742 | 13 | 835 | 935 | 1,040 | 1,145 | 1,265 | 1,410 | 11 |
| Business Continuity Services | 302 | 17 | 353 | 420 | 490 | 600 | 720 | 870 | 20 |
| TOTAL CUSTOMER SERVICES | 27,311 | 3 | 28,121 | 29,080 | 30,160 | 31,330 | 32,650 | 34,250 | 4 |
| Annual Growth (Percent) | | | 3 | 3 | 4 | 4 | 4 | 5 | |
| ALL OTHER INFORMATION SERVICES | 53,220 | 11 | 58,850 | 64,640 | 71,540 | 79,150 | 88,000 | 98,100 | 11 |

Note: Totals may not add due to rounding.
CAGRs calculated in local currency.
SOURCE: INPUT

EXHIBIT IV-5

## Customer Services Market Forecast, 1992-1997 Europe (ECUs)

| | Market Size (ECU Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 11,705 | 1 | 11,857 | 12,060 | 12,269 | 12,478 | 12,716 | 13,004 | 2 |
| Environmental Services | 5,598 | 5 | 5,875 | 6,149 | 6,463 | 6,799 | 7,172 | 7,627 | 5 |
| Systems Software Support | 1,291 | 8 | 1,395 | 1,507 | 1,642 | 1,776 | 1,914 | 2,063 | 8 |
| Education and Training | 1,006 | -4 | 970 | 974 | 993 | 1,026 | 1,082 | 1,164 | 4 |
| Other Professional Services | 554 | 13 | 623 | 698 | 776 | 854 | 944 | 1,052 | 11 |
| Business Continuity Services | 225 | 17 | 263 | 313 | 366 | 448 | 537 | 649 | 20 |
| TOTAL CUSTOMER SERVICES | 20,381 | 3 | 20,986 | 21,701 | 22,507 | 23,381 | 24,366 | 25,560 | 4 |
| Annual Growth (Percent) | | | 3 | 3 | 4 | 4 | 4 | 5 | |
| ALL OTHER INFORMATION SERVICES | 39,700 | 11 | 43,900 | 48,220 | 53,370 | 59,050 | 65,650 | 73,180 | 11 |

Note: Totals may not add due to rounding.
CAGRs calculated in local currency.
SOURCE: INPUT

# V
# European Customer Services - Country Market Forecasts, 1992-1997

This chapter of the study contains the exhibits which give the sizes and growth forecasts for customer services in:

- Sixteen individual Western European country markets
- The Eastern portion of Europe, shown as a single group of countries in one set of exhibits (see Chapter I for the list of countries covered).

The analyses are presented in local currency for each individual country market, structured as a set of two exhibits:

- Market Structure in 1991, which is INPUT's measurement of total user expenditure for customer services. The structure of the market is segmented by the top ten leading vendors in each country and identifies the revenues of the five types of vendors that are active in the market:
  - Systems Vendors
  - Independent Maintenance Organisations
  - Dealers, Distributors and VARs
  - Independent Software and Services Vendors
  - Non-Industry Vendors.

- A five-year forecast for the growth of user expenditure for customer services covering the period 1992 to 1997, and the base year of 1991. Each country market forecast is segmented by service sector:

  - Hardware Service
  - Environmental Services
  - Systems Software Support
  - Education and Training
  - Other Professional Services
  - Business Continuity Services.

The country markets included in the forecast are as follows:

- France; Exhibits V-1 to V-2
- Germany; Exhibits V-3 to V-4
- The United Kingdom; Exhibits V-5 to V-6
- Italy; Exhibits V-7 to V-8
- Sweden; Exhibits V-9 to V-10
- Denmark; Exhibits V-11 to V-12
- Norway; Exhibits V-13 to V-14
- Finland; Exhibits V-15 to V-16
- The Netherlands; Exhibits V-17 to V-18
- Belgium; Exhibits V-19 to V-20
- Spain; Exhibits V-21 to V-22
- Switzerland; Exhibits V-23 to V-24
- Austria; Exhibits V-25 to V-26
- Greece; Exhibits V-27 to V-28
- Ireland; Exhibits V-29 to V-30
- Portugal; Exhibits V-31 to V-32
- Eastern Europe; Exhibits V-33 to V-34.

The equivalent exhibits showing market sizes and growth rates in U.S. dollars are contained in Appendix C.

EXHIBIT V-1

## Customer Services Revenues, 1991 - France (FF Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 2,745 | 212 | 0 | 220 | 145 | 5 | 3,327 | 1,456 |
| Bull | 2,305 | 52 | 155 | 192 | 52 | 21 | 2,777 | 974 |
| Digital | 1,088 | 192 | 93 | 109 | 52 | 10 | 1,544 | 197 |
| Thomainfor | 969 | 0 | 0 | 0 | 0 | 0 | 969 | 0 |
| Unisys | 466 | 207 | 52 | 78 | 78 | 10 | 891 | 254 |
| AT&T/NCR | 622 | 88 | 16 | 93 | 57 | 5 | 881 | 215 |
| Siemens Nixdorf | 673 | 31 | 0 | 36 | 16 | 5 | 761 | 104 |
| Olivetti | 622 | 16 | 5 | 5 | 16 | 5 | 669 | 0 |
| Hewlett-Packard | 477 | 21 | 16 | 41 | 26 | 10 | 591 | 0 |
| Wang | 316 | 44 | 62 | 34 | 35 | 0 | 491 | 0 |
| Other System Vendors | 2,568 | 186 | 257 | 155 | 142 | 3 | 3,311 | 91 |
| IMOs (1) | 1,111 | 20 | 20 | 15 | 60 | 15 | 1,241 | 0 |
| VARs (2) | 220 | 5 | 10 | 12 | 5 | 0 | 252 | 0 |
| ISVs (3) | 200 | 0 | 380 | 285 | 0 | 205 | 1,070 | 0 |
| Non-Industry | 0 | 5,200 | 0 | 0 | 0 | 0 | 5,200 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 14,382 | 6,274 | 1,066 | 1,275 | 684 | 294 | 23,975 | 3,291 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-2

## Customer Services Market Forecast, 1992-1997
## France

| SERVICE SECTOR | Market Size (FF Millions) 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
|---|---|---|---|---|---|---|---|---|---|
| Hardware Service | 14,382 | 1 | 14,500 | 14,645 | 14,791 | 14,939 | 15,089 | 15,316 | 1 |
| Environmental Services | 6,274 | 5 | 6,590 | 6,920 | 7,265 | 7,629 | 8,010 | 8,411 | 5 |
| Systems Software Support | 1,066 | 3 | 1,100 | 1,155 | 1,213 | 1,273 | 1,337 | 1,404 | 5 |
| Education and Training | 1,275 | -6 | 1,200 | 1,188 | 1,188 | 1,224 | 1,285 | 1,420 | 3 |
| Other Professional Services | 684 | 13 | 770 | 855 | 940 | 1,025 | 1,107 | 1,195 | 9 |
| Business Continuity Services | 294 | 16 | 340 | 394 | 461 | 545 | 648 | 771 | 18 |
| TOTAL CUSTOMER SERVICES | 23,975 | 2 | 24,500 | 25,157 | 25,859 | 26,634 | 27,476 | 28,517 | 3 |
| Annual Growth (Percent) | | | 2 | 3 | 3 | 3 | 3 | 4 | |
| *ALL OTHER SERVICES | 3,291 | 6 | 3,500 | 3,745 | 4,045 | 4,409 | 4,894 | 5,470 | 9 |

SOURCE: INPUT
*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.
Totals may not add due to rounding.
CAGRs calculated in local currency.

EXHIBIT V-3

## Customer Services Revenues, 1991 - Germany (DM Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Siemens Nixdorf | 1,094 | 73 | 0 | 68 | 15 | 8 | 1,258 | 152 |
| IBM | 965 | 91 | 0 | 91 | 52 | 2 | 1,201 | 524 |
| Digital | 433 | 82 | 38 | 50 | 20 | 5 | 628 | 79 |
| AT&T/NCR | 205 | 29 | 6 | 30 | 18 | 3 | 291 | 71 |
| PrimeService | 114 | 20 | 18 | 15 | 9 | 1 | 177 | 0 |
| Hewlett-Packard | 141 | 8 | 5 | 12 | 8 | 2 | 176 | 0 |
| Memorex | 148 | 0 | 0 | 0 | 0 | 0 | 148 | 0 |
| Unisys | 91 | 23 | 8 | 12 | 9 | 5 | 148 | 43 |
| Bull | 112 | 9 | 9 | 6 | 8 | 2 | 146 | 49 |
| Olivetti | 126 | 3 | 5 | 1 | 8 | 2 | 145 | 0 |
| Other System Vendors | 850 | 50 | 100 | 50 | 0 | 5 | 1,055 | 0 |
| IMOs (1) | 205 | 0 | 10 | 10 | 0 | 2 | 227 | 0 |
| VARs (2) | 160 | 10 | 50 | 5 | 0 | 0 | 225 | 0 |
| ISVs (3) | 70 | 0 | 280 | 80 | 0 | 65 | 495 | 0 |
| Non-Industry | 0 | 1,750 | 0 | 0 | 0 | 0 | 1,750 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 4,714 | 2,148 | 529 | 430 | 147 | 102 | 8,070 | 918 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-4

## Customer Services Market Forecast, 1992-1997
## Germany

| | Market Size (DM Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 4,714 | 1 | 4,750 | 4,790 | 4,830 | 4,880 | 4,950 | 5,050 | 1 |
| Environmental Services | 2,148 | 7 | 2,300 | 2,440 | 2,560 | 2,660 | 2,740 | 2,880 | 5 |
| Systems Software Support | 529 | 8 | 570 | 610 | 650 | 700 | 750 | 800 | 7 |
| Education and Training | 430 | 0 | 430 | 430 | 440 | 450 | 470 | 490 | 3 |
| Other Professional Services | 147 | 9 | 160 | 170 | 190 | 210 | 230 | 250 | 9 |
| Business Continuity Services | 102 | 8 | 110 | 120 | 130 | 150 | 170 | 200 | 13 |
| TOTAL CUSTOMER SERVICES | 8,070 | 3 | 8,320 | 8,560 | 8,800 | 9,050 | 9,310 | 9,670 | 3 |
| Annual Growth (Percent) | | | 3 | 3 | 3 | 3 | 3 | 4 | |
| *ALL OTHER SERVICES | 918 | 9 | 1,000 | 1,080 | 1,160 | 1,230 | 1,290 | 1,350 | 6 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-5

## Customer Services Revenues, 1991 - United Kingdom (£ Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 236 | 43 | 0 | 20 | 24 | 1 | 324 | 140 |
| Digital | 171 | 35 | 58 | 15 | 9 | 2 | 290 | 37 |
| ICL | 229 | 27 | 16 | 8 | 3 | 0 | 283 | 124 |
| Hewlett-Packard | 81 | 4 | 15 | 6 | 5 | 2 | 113 | 0 |
| Unisys | 72 | 16 | 8 | 6 | 5 | 3 | 110 | 32 |
| PrimeService | 45 | 11 | 21 | 11 | 4 | 0 | 92 | 0 |
| Granada | 81 | 10 | 0 | 0 | 0 | 0 | 91 | 0 |
| AT&T/NCR | 59 | 9 | 2 | 10 | 5 | 2 | 87 | 24 |
| Olivetti | 67 | 0 | 1 | 6 | 2 | 1 | 77 | 0 |
| Bull | 49 | 3 | 6 | 4 | 2 | 1 | 65 | 21 |
| Other System Vendors | 244 | 23 | 43 | 18 | 18 | 3 | 349 | 3 |
| IMOs (1) | 229 | 3 | 2 | 2 | 2 | 3 | 241 | 0 |
| VARs (2) | 25 | 1 | 3 | 2 | 1 | 0 | 32 | 0 |
| ISVs (3) | 22 | 0 | 80 | 15 | 0 | 25 | 142 | 0 |
| Non-Industry | 0 | 650 | 0 | 0 | 0 | 0 | 650 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 1,610 | 835 | 255 | 123 | 80 | 43 | 2,946 | 381 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketeers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-6

## Customer Services Market Forecast, 1992-1997
## United Kingdom

| SERVICE SECTOR | Market Size (£ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 1,610 | -1 | 1,600 | 1,620 | 1,640 | 1,660 | 1,680 | 1,710 | 1 |
| Environmental Services | 835 | 2 | 850 | 860 | 880 | 910 | 950 | 1,000 | 3 |
| Systems Software Support | 255 | 8 | 275 | 300 | 330 | 360 | 390 | 420 | 9 |
| Education and Training | 123 | -15 | 104 | 97 | 97 | 97 | 101 | 106 | 0 |
| Other Professional Services | 80 | 13 | 90 | 100 | 110 | 120 | 140 | 160 | 12 |
| Business Continuity Services | 43 | 28 | 55 | 70 | 90 | 110 | 130 | 150 | 22 |
| TOTAL CUSTOMER SERVICES | 2,946 | 0 | 2,974 | 3,050 | 3,150 | 3,260 | 3,390 | 3,550 | 4 |
| Annual Growth (Percent) | | | 1 | 3 | 3 | 3 | 4 | 5 | |
| * ALL OTHER SERVICES | 360 | 8 | 390 | 430 | 470 | 520 | 570 | 650 | 11 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-7

## Customer Services Revenues, 1991 - Italy (LIT Billions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 531 | 46 | 0 | 44 | 29 | 0 | 650 | 265 |
| Olivetti | 408 | 46 | 21 | 3 | 12 | 1 | 491 | 288 |
| Digital | 130 | 40 | 43 | 17 | 10 | 2 | 242 | 213 |
| Bull | 144 | 10 | 12 | 6 | 7 | 1 | 180 | 60 |
| AT&T/NCR | 63 | 9 | 2 | 9 | 6 | 0 | 89 | 21 |
| Hewlett-Packard | 71 | 3 | 12 | 5 | 3 | 0 | 94 | 0 |
| Siemens Nixdorf | 69 | 5 | 0 | 6 | 2 | 1 | 83 | 12 |
| Unisys | 52 | 8 | 6 | 5 | 2 | 1 | 74 | 24 |
| Memorex | 52 | 0 | 0 | 0 | 0 | 0 | 52 | 0 |
| PrimeService | 29 | 7 | 16 | 5 | 3 | 0 | 60 | 0 |
| Other System Vendors | 550 | 56 | 45 | 48 | 18 | 18 | 735 | 87 |
| IMOs (1) | 165 | 5 | 2 | 1 | 2 | 0 | 175 | 0 |
| VARs (2) | 65 | 5 | 1 | 2 | 2 | 0 | 75 | 0 |
| ISVs (3) | 6 | 0 | 50 | 14 | 0 | 0 | 70 | 0 |
| Non-Industry | 0 | 800 | 0 | 0 | 0 | 0 | 800 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 2,335 | 1,040 | 210 | 165 | 96 | 24 | 3,870 | 970 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-8

## Customer Services Market Forecast, 1992-1997
## Italy

| SERVICE SECTOR | Market Size (LIT Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 2,335 | 1 | 2,355 | 2,390 | 2,430 | 2,470 | 2,510 | 2,550 | 2 |
| Environmental Services | 1,040 | 7 | 1,113 | 1,190 | 1,270 | 1,360 | 1,460 | 1,560 | 7 |
| Systems Software Support | 210 | 10 | 230 | 250 | 280 | 310 | 340 | 370 | 10 |
| Education and Training | 165 | -3 | 160 | 160 | 160 | 170 | 190 | 210 | 6 |
| Other Professional Services | 96 | 15 | 110 | 120 | 130 | 140 | 160 | 180 | 10 |
| Business Continuity Services | 24 | 13 | 27 | 30 | 30 | 40 | 50 | 60 | 17 |
| TOTAL CUSTOMER SERVICES | 3,870 | 3 | 3,995 | 4,140 | 4,300 | 4,490 | 4,710 | 4,930 | 4 |
| Annual Growth (Percent) | | | 3 | 4 | 4 | 4 | 5 | 5 | |
| *ALL OTHER SERVICES | 970 | 8 | 1,050 | 1,130 | 1,220 | 1,320 | 1,430 | 1,550 | 8 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-9

## Customer Services Revenues, 1991 - Sweden (SK Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 693 | 33 | 0 | 65 | 28 | 1 | 820 | 355 |
| Digital | 499 | 105 | 39 | 54 | 28 | 11 | 736 | 93 |
| ICL | 554 | 28 | 66 | 17 | 22 | 0 | 687 | 66 |
| Unisys | 166 | 22 | 22 | 17 | 11 | 6 | 244 | 68 |
| AT&T/NCR | 161 | 22 | 6 | 22 | 17 | 0 | 228 | 55 |
| Siemens Nixdorf | 111 | 17 | 0 | 11 | 6 | 0 | 145 | 21 |
| Wang | 55 | 8 | 14 | 6 | 6 | 0 | 89 | 0 |
| Norsk Data | 68 | 3 | 26 | 15 | 12 | 0 | 124 | 0 |
| Bull | 72 | 6 | 11 | 6 | 0 | 0 | 95 | 33 |
| Hewlett-Packard | 78 | 3 | 2 | 3 | 3 | 0 | 89 | 0 |
| PrimeService | 50 | 11 | 11 | 11 | 6 | 0 | 89 | 0 |
| Other System Vendors | 412 | 55 | 103 | 45 | 76 | 10 | 701 | 79 |
| IMOs (1) | 290 | 3 | 3 | 3 | 4 | 5 | 308 | 0 |
| VARs (2) | 120 | 2 | 3 | 3 | 2 | 0 | 130 | 0 |
| ISVs (3) | 25 | 2 | 64 | 42 | 2 | 30 | 165 | 0 |
| Non-Industry | 0 | 1,450 | 0 | 0 | 0 | 0 | 1,450 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 3,354 | 1,770 | 370 | 320 | 223 | 63 | 6,100 | 770 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-10

## Customer Services Market Forecast, 1992-1997
## Sweden

| | Market Size (SK Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 3,354 | 6 | 3,545 | 3,690 | 3,800 | 3,880 | 3,940 | 4,000 | 2 |
| Environmental Services | 1,770 | 5 | 1,862 | 1,960 | 2,060 | 2,160 | 2,270 | 2,400 | 5 |
| Systems Software Support | 370 | 12 | 415 | 460 | 510 | 560 | 600 | 640 | 9 |
| Education and Training | 320 | 0 | 320 | 350 | 380 | 410 | 430 | 450 | 7 |
| Other Professional Services | 223 | 17 | 260 | 290 | 320 | 360 | 400 | 430 | 11 |
| Business Continuity Services | 63 | 8 | 68 | 80 | 90 | 100 | 120 | 140 | 16 |
| TOTAL CUSTOMER SERVICES | 6,100 | 6 | 6,470 | 6,830 | 7,160 | 7,470 | 7,760 | 8,060 | 4 |
| Annual Growth (Percent) | | | 6 | 6 | 5 | 4 | 4 | 4 | |
| *ALL OTHER SERVICES | 770 | 8 | 830 | 900 | 960 | 1,020 | 1,070 | 1,120 | 6 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-11

## Customer Services Revenues, 1991 - Denmark (DK Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 530 | 47 | 0 | 43 | 30 | 0 | 650 | 477 |
| ICL | 218 | 12 | 0 | 6 | 0 | 0 | 236 | 18 |
| Olivetti | 206 | 1 | 3 | 2 | 2 | 0 | 214 | 0 |
| Digital | 130 | 35 | 12 | 18 | 12 | 0 | 207 | 27 |
| AT&T/NCR | 82 | 12 | 6 | 12 | 6 | 0 | 118 | 29 |
| Siemens Nixdorf | 89 | 6 | 0 | 12 | 6 | 0 | 113 | 18 |
| PrimeService | 82 | 12 | 6 | 6 | 6 | 0 | 112 | 0 |
| Unisys | 59 | 12 | 12 | 6 | 6 | 0 | 95 | 27 |
| Bull | 41 | 12 | 6 | 6 | 12 | 0 | 77 | 24 |
| Hewlett-Packard | 59 | 1 | 1 | 3 | 2 | 0 | 66 | 0 |
| Other System Vendors | 300 | 18 | 95 | 40 | 15 | 0 | 468 | 25 |
| IMOs (1) | 47 | 13 | 15 | 2 | 12 | 2 | 91 | 0 |
| VARs (2) | 12 | 2 | 2 | 2 | 1 | 1 | 20 | 10 |
| ISVs (3) | 20 | 0 | 40 | 10 | 0 | 7 | 77 | 0 |
| Non-Industry | 0 | 900 | 0 | 0 | 0 | 0 | 900 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 1,875 | 1,083 | 198 | 168 | 110 | 10 | 3,444 | 655 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-12

## Customer Services Market Forecast, 1992-1997
## Denmark

| SERVICE SECTOR | Market Size (DK Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 1,875 | -1 | 1,850 | 1,820 | 1,790 | 1,760 | 1,730 | 1,700 | -2 |
| Environmental Services | 1,083 | 2 | 1,100 | 1,155 | 1,225 | 1,310 | 1,415 | 1,500 | 6 |
| Systems Software Support | 198 | 11 | 220 | 240 | 260 | 280 | 300 | 320 | 8 |
| Education and Training | 168 | 1 | 170 | 170 | 170 | 180 | 190 | 210 | 4 |
| Other Professional Services | 110 | 18 | 130 | 150 | 170 | 190 | 210 | 240 | 13 |
| Business Continuity Services | 10 | 20 | 12 | 14 | 16 | 20 | 25 | 30 | 20 |
| TOTAL CUSTOMER SERVICES | 3,444 | 0 | 3,482 | 3,550 | 3,630 | 3,740 | 3,870 | 4,000 | 3 |
| Annual Growth (Percent) | | | 1 | 2 | 2 | 3 | 3 | 3 | |
| *ALL OTHER SERVICES | 655 | 10 | 720 | 780 | 830 | 880 | 920 | 970 | 6 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-13

## Customer Services Revenues, 1991 - Norway (NK Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Norsk Data | 290 | 28 | 120 | 60 | 30 | 3 | 531 | 0 |
| IBM | 330 | 30 | 0 | 35 | 18 | 2 | 415 | 180 |
| Digital | 132 | 18 | 12 | 15 | 6 | 0 | 183 | 24 |
| Olivetti | 144 | 6 | 6 | 1 | 1 | 0 | 158 | 0 |
| ICL | 108 | 18 | 10 | 15 | 0 | 0 | 151 | 0 |
| Siemens Nixdorf | 108 | 6 | 0 | 12 | 3 | 0 | 129 | 12 |
| AT&T/NCR | 78 | 12 | 6 | 12 | 13 | 0 | 121 | 24 |
| Bull | 66 | 6 | 12 | 6 | 12 | 0 | 102 | 0 |
| Wang | 25 | 2 | 4 | 3 | 2 | 0 | 36 | 0 |
| PrimeService | 30 | 6 | 6 | 6 | 3 | 0 | 51 | 0 |
| Other System Vendors | 406 | 44 | 67 | 87 | 29 | 2 | 635 | 20 |
| IMOs (1) | 70 | 10 | 2 | 2 | 5 | 1 | 90 | 0 |
| VARs (2) | 13 | 3 | 0 | 1 | 2 | 1 | 20 | 0 |
| ISVs (3) | 20 | 1 | 40 | 15 | 3 | 29 | 108 | 0 |
| Non-Industry | 0 | 850 | 0 | 0 | 0 | 0 | 850 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 1,820 | 1,040 | 285 | 270 | 127 | 38 | 3,580 | 260 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-14

## Customer Services Market Forecast, 1992-1997
## Norway

| | Market Size (NK Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 1,820 | 0 | 1,825 | 1,830 | 1,840 | 1,860 | 1,880 | 1,920 | 1 |
| Environmental Services | 1,040 | 7 | 1,110 | 1,180 | 1,250 | 1,310 | 1,380 | 1,460 | 6 |
| Systems Software Support | 285 | 5 | 300 | 320 | 340 | 370 | 400 | 440 | 8 |
| Education and Training | 270 | 7 | 290 | 300 | 310 | 310 | 330 | 350 | 4 |
| Other Professional Services | 127 | 10 | 140 | 150 | 160 | 170 | 180 | 190 | 6 |
| Business Continuity Services | 38 | 18 | 45 | 50 | 60 | 70 | 90 | 110 | 20 |
| TOTAL CUSTOMER SERVICES | 3,580 | 4 | 3,710 | 3,830 | 3,960 | 4,090 | 4,260 | 4,470 | 4 |
| Annual Growth (Percent) | | | 4 | 3 | 3 | 3 | 4 | 5 | |
| *ALL OTHER SERVICES | 260 | 8 | 280 | 310 | 330 | 350 | 370 | 400 | 7 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-15

## Customer Services Revenues, 1991 - Finland (FM Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| ICL | 394 | 21 | 42 | 8 | 21 | 1 | 487 | 17 |
| Digital | 137 | 33 | 17 | 17 | 8 | 4 | 216 | 27 |
| IBM | 166 | 17 | 0 | 14 | 8 | 1 | 206 | 87 |
| Unisys | 62 | 8 | 4 | 6 | 5 | 0 | 85 | 21 |
| Siemens Nixdorf | 66 | 4 | 5 | 2 | 1 | 0 | 78 | 4 |
| AT&T/NCR | 25 | 4 | 0 | 4 | 4 | 0 | 37 | 8 |
| Olivetti | 29 | 0 | 0 | 1 | 0 | 0 | 30 | 0 |
| Rank Xerox | 21 | 0 | 0 | 2 | 1 | 0 | 24 | 0 |
| PrimeService | 10 | 4 | 4 | 2 | 1 | 0 | 21 | 0 |
| Memorex | 12 | 0 | 0 | 0 | 0 | 0 | 12 | 0 |
| Other System Vendors | 63 | 13 | 27 | 33 | 12 | 2 | 150 | 0 |
| IMOs (1) | 37 | 1 | 1 | 0 | 1 | 1 | 41 | 0 |
| VARs (2) | 8 | 1 | 0 | 1 | 0 | 0 | 10 | 0 |
| ISVs (3) | 10 | 0 | 20 | 6 | 1 | 23 | 60 | 0 |
| Non-Industry Vendors (4) | 0 | 434 | 0 | 0 | 0 | 0 | 434 | 0 |
| TOTAL MARKET | 1,040 | 540 | 120 | 95 | 63 | 32 | 1,890 | 164 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-16

## Customer Services Market Forecast, 1992-1997
## Finland

| SERVICE SECTOR | Market Size (FM Millions) 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
|---|---|---|---|---|---|---|---|---|---|
| Hardware Service | 1,040 | 1 | 1,050 | 1,060 | 1,070 | 1,080 | 1,090 | 1,100 | 1 |
| Environmental Services | 540 | 6 | 570 | 600 | 630 | 660 | 690 | 720 | 5 |
| Systems Software Support | 120 | 8 | 130 | 140 | 150 | 160 | 170 | 190 | 8 |
| Education and Training | 95 | -1 | 94 | 94 | 96 | 98 | 101 | 104 | 2 |
| Other Professional Services | 63 | 11 | 70 | 80 | 90 | 100 | 110 | 120 | 11 |
| Business Continuity Services | 32 | 13 | 36 | 40 | 50 | 60 | 70 | 90 | 20 |
| TOTAL CUSTOMER SERVICES | 1,890 | 0 | 1,950 | 2,010 | 2,090 | 2,160 | 2,230 | 2,320 | 4 |
| Annual Growth (Percent) | | | 3 | 3 | 4 | 3 | 3 | 4 | |
| *ALL OTHER SERVICES | 164 | 10 | 180 | 200 | 220 | 240 | 260 | 280 | 9 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-17

## Customer Services Revenues, 1991 - Netherlands (Dfl Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Digital | 260 | 48 | 21 | 26 | 10 | 3 | 368 | 47 |
| Getronics | 144 | 55 | 60 | 5 | 77 | 17 | 358 | 34 |
| IBM | 282 | 26 | 0 | 27 | 15 | 2 | 352 | 156 |
| Unisys | 86 | 14 | 12 | 10 | 5 | 2 | 129 | 36 |
| AT&T/NCR | 65 | 9 | 2 | 10 | 7 | 0 | 93 | 19 |
| Bull | 51 | 5 | 7 | 5 | 3 | 0 | 71 | 24 |
| Hewlett-Packard | 51 | 3 | 2 | 5 | 2 | 3 | 66 | 0 |
| Siemens Nixdorf | 55 | 3 | 0 | 3 | 0 | 1 | 62 | 10 |
| Olivetti | 48 | 1 | 1 | 1 | 1 | 0 | 52 | 0 |
| ICL | 36 | 3 | 5 | 2 | 0 | 0 | 46 | 12 |
| Other System Vendors | 300 | 24 | 34 | 10 | 4 | 2 | 374 | 12 |
| IMOs (1) | 110 | 1 | 5 | 2 | 0 | 0 | 118 | 0 |
| VARs (2) | 20 | 1 | 1 | 1 | 1 | 0 | 24 | 0 |
| ISVs (3) | 12 | 2 | 20 | 23 | 0 | 5 | 62 | 0 |
| Non-Industry | 0 | 605 | 0 | 0 | 0 | 0 | 605 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 1,520 | 800 | 170 | 130 | 125 | 35 | 2,780 | 350 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-18

## Customer Services Market Forecast, 1992-1997
## Netherlands

| | Market Size (Dfl Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 1,520 | 3 | 1,570 | 1,620 | 1,670 | 1,720 | 1,770 | 1,820 | 3 |
| Environmental Services | 800 | 3 | 825 | 860 | 900 | 970 | 1,070 | 1,210 | 8 |
| Systems Software Support | 170 | 9 | 185 | 200 | 210 | 220 | 230 | 240 | 5 |
| Education and Training | 130 | 0 | 130 | 130 | 130 | 130 | 140 | 150 | 3 |
| Other Professional Services | 125 | 12 | 140 | 150 | 170 | 180 | 200 | 230 | 10 |
| Business Continuity Services | 35 | 14 | 40 | 50 | 60 | 70 | 80 | 100 | 20 |
| TOTAL CUSTOMER SERVICES | 2,780 | 4 | 2,890 | 3,010 | 3,140 | 3,290 | 3,490 | 3,750 | 5 |
| Annual Growth (Percent) | | | 4 | 4 | 4 | 5 | 6 | 7 | |
| *ALL OTHER SERVICES | 350 | 7 | 375 | 400 | 430 | 460 | 490 | 530 | 7 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-19

## Customer Services Revenues, 1991 - Belgium (BF Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 2,501 | 219 | 0 | 205 | 156 | 0 | 3,081 | 1,407 |
| Digital | 1,726 | 281 | 306 | 125 | 63 | 0 | 2,501 | 313 |
| Siemens Nixdorf | 1,407 | 94 | 0 | 63 | 16 | 0 | 1,580 | 281 |
| Unisys | 938 | 94 | 94 | 94 | 31 | 0 | 1,251 | 350 |
| Bull | 907 | 94 | 94 | 63 | 31 | 0 | 1,189 | 375 |
| Olivetti | 1,000 | 9 | 63 | 47 | 63 | 0 | 1,182 | 0 |
| Hewlett-Packard | 700 | 31 | 69 | 63 | 31 | 63 | 957 | 0 |
| Memorex | 691 | 0 | 0 | 0 | 0 | 0 | 691 | 0 |
| AT&T/NCR | 469 | 63 | 31 | 63 | 31 | 0 | 657 | 125 |
| Wang | 394 | 38 | 63 | 44 | 31 | 0 | 570 | 0 |
| Other System Vendors | 942 | 152 | 140 | 178 | 100 | 16 | 1,528 | 49 |
| IMOs (1) | 1,700 | 20 | 20 | 15 | 1 | 21 | 1,777 | 0 |
| VARs (2) | 300 | 0 | 10 | 6 | 6 | 0 | 322 | 0 |
| ISVs (3) | 75 | 5 | 290 | 164 | 10 | 100 | 644 | 0 |
| Non-Industry | 0 | 4,600 | 0 | 0 | 0 | 0 | 4,600 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 13,750 | 5,700 | 1,180 | 1,130 | 570 | 200 | 22,530 | 2,900 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-20

## Customer Services Market Forecast, 1992-1997
## Belgium

| SERVICE SECTOR | Market Size (BF Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 13,750 | 5 | 14,400 | 14,980 | 15,500 | 15,970 | 16,450 | 16,940 | 3 |
| Environmental Services | 5,700 | 5 | 5,975 | 6,270 | 6,580 | 6,910 | 7,260 | 7,620 | 5 |
| Systems Software Support | 1,180 | 10 | 1,300 | 1,430 | 1,570 | 1,730 | 1,900 | 2,090 | 10 |
| Education and Training | 1,130 | 1 | 1,145 | 1,160 | 1,180 | 1,220 | 1,280 | 1,370 | 4 |
| Other Professional Services | 570 | 9 | 620 | 680 | 750 | 830 | 930 | 1,060 | 11 |
| Business Continuity Services | 200 | 5 | 210 | 230 | 250 | 290 | 340 | 430 | 15 |
| TOTAL CUSTOMER SERVICES | 22,530 | 5 | 23,650 | 24,750 | 25,830 | 26,950 | 28,160 | 29,510 | 5 |
| Annual Growth (Percent) | | | 5 | 5 | 4 | 4 | 4 | 5 | |
| *ALL OTHER SERVICES | 2,900 | 10 | 3,200 | 3,520 | 3,870 | 4,260 | 4,690 | 5,160 | 10 |

SOURCE: INPUT
*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.
Totals may not add due to rounding.

EXHIBIT V-21

## Customer Services Revenues, 1991 - Spain (Pta Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 13,950 | 1,732 | 0 | 1,280 | 673 | 0 | 17,635 | 7,700 |
| Digital | 7,000 | 1,154 | 1,369 | 433 | 289 | 0 | 10,245 | 1,251 |
| AT&T/NCR | 7,215 | 962 | 289 | 962 | 577 | 96 | 10,101 | 2,500 |
| Siemens Nixdorf | 6,253 | 385 | 0 | 577 | 192 | 0 | 7,407 | 962 |
| Unisys | 4,811 | 480 | 866 | 482 | 192 | 48 | 6,879 | 1,924 |
| Hewlett-Packard | 4,502 | 289 | 885 | 481 | 289 | 0 | 6,446 | 0 |
| Olivetti | 5,772 | 192 | 241 | 48 | 48 | 0 | 6,301 | 0 |
| Bull | 2,886 | 96 | 385 | 192 | 96 | 0 | 3,655 | 963 |
| Eltec | 3,400 | 0 | 0 | 0 | 0 | 0 | 3,400 | 0 |
| PrimeService | 1,441 | 289 | 241 | 290 | 144 | 0 | 2,405 | 0 |
| Other System Vendors | 4,500 | 261 | 494 | 450 | 100 | 11 | 5,816 | 100 |
| IMOs (1) | 8,050 | 50 | 40 | 45 | 50 | 5 | 8,240 | 0 |
| VARs (2) | 1,220 | 10 | 40 | 20 | 50 | 0 | 1,340 | 0 |
| ISVs (3) | 0 | 0 | 1,150 | 250 | 0 | 240 | 1,640 | 0 |
| Non-Industry | 0 | 25,000 | 0 | 0 | 0 | 0 | 25,000 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 71,000 | 30,900 | 6,000 | 5,510 | 2,700 | 400 | 116,510 | 15,400 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-22

## Customer Services Market Forecast, 1992-1997
## Spain

| SERVICE SECTOR | Market Size (Pta Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 71,000 | 6 | 75,250 | 79,770 | 83,760 | 87,950 | 91,470 | 94,000 | 5 |
| Environmental Services | 30,900 | 10 | 34,000 | 37,400 | 41,140 | 45,250 | 49,780 | 55,000 | 10 |
| Systems Software Support | 6,000 | 13 | 6,800 | 7,680 | 8,680 | 8,810 | 11,000 | 12,300 | 13 |
| Education and Training | 5,510 | 4 | 5,750 | 5,980 | 6,220 | 6,410 | 6,600 | 6,900 | 4 |
| Other Professional Services | 2,700 | 20 | 3,250 | 3,840 | 4,420 | 5,080 | 5,740 | 6,400 | 15 |
| Business Continuity Services | 400 | 13 | 450 | 520 | 620 | 780 | 980 | 1,200 | 22 |
| TOTAL CUSTOMER SERVICES | 116,510 | 8 | 125,500 | 135,200 | 144,800 | 155,300 | 165,600 | 175,800 | 7 |
| Annual Growth (Percent) | | | 8 | 8 | 7 | 7 | 7 | 6 | |
| *ALL OTHER SERVICES | 15,400 | 13 | 17,400 | 20,010 | 23,410 | 28,090 | 33,150 | 38,120 | 17 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-23

## Customer Services Revenues, 1991 - Switzerland (SF Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Digital | 120 | 28 | 11 | 14 | 7 | 1 | 181 | 23 |
| AT&T/NCR | 128 | 16 | 4 | 20 | 11 | 1 | 180 | 42 |
| IBM | 122 | 8 | 0 | 8 | 5 | 1 | 144 | 62 |
| Unisys | 88 | 7 | 12 | 9 | 1 | 0 | 117 | 33 |
| Siemens Nixdorf | 65 | 5 | 0 | 4 | 1 | 0 | 75 | 12 |
| Hewlett Packard | 27 | 1 | 4 | 1 | 1 | 1 | 35 | 0 |
| Bull | 26 | 1 | 1 | 1 | 0 | 0 | 29 | 8 |
| Olivetti | 24 | 0 | 1 | 0 | 0 | 0 | 25 | 0 |
| PrimeService | 8 | 2 | 1 | 1 | 1 | 0 | 13 | 0 |
| ICL | 9 | 1 | 1 | 0 | 0 | 0 | 11 | 0 |
| Memorex | 11 | 0 | 0 | 0 | 0 | 0 | 11 | 0 |
| Other System Vendors | 110 | 12 | 25 | 20 | 20 | 1 | 188 | 20 |
| IMOs (1) | 21 | 2 | 2 | 0 | 1 | 1 | 27 | 0 |
| VARs (2) | 11 | 1 | 0 | 0 | 0 | 0 | 12 | 0 |
| ISVs (3) | 0 | 1 | 20 | 10 | 0 | 4 | 35 | 0 |
| Non-Industry | 0 | 420 | 0 | 0 | 0 | 0 | 420 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 770 | 505 | 82 | 88 | 48 | 10 | 1,500 | 200 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-24

## Customer Services Market Forecast, 1992-1997
## Switzerland

| | Market Size (SF Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 770 | 1 | 780 | 790 | 800 | 810 | 830 | 850 | 2 |
| Environmental Services | 505 | 4 | 523 | 540 | 560 | 580 | 600 | 620 | 3 |
| Systems Software Support | 82 | 9 | 89 | 100 | 110 | 120 | 130 | 140 | 9 |
| Education and Training | 88 | -3 | 85 | 86 | 87 | 90 | 94 | 99 | 3 |
| Other Professional Services | 48 | 6 | 51 | 54 | 57 | 60 | 63 | 66 | 5 |
| Business Continuity Services | 10 | 20 | 12 | 14 | 17 | 20 | 23 | 28 | 18 |
| TOTAL CUSTOMER SERVICES | 1,503 | 2 | 1,540 | 1,580 | 16,30 | 1,680 | 1,740 | 1,800 | 3 |
| Annual Growth (Percent) | | | 2 | 3 | 3 | 3 | 4 | 3 | |
| *ALL OTHER SERVICES | 200 | 6 | 212 | 230 | 250 | 270 | 290 | 310 | 8 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-25

## Customer Services Revenues, 1991 - Austria
## (Sch Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Digital | 760.0 | 38.0 | 135.0 | 42.0 | 45.0 | 1.0 | 1,021.0 | 68.0 |
| IBM | 738.0 | 53.0 | 0.0 | 38.0 | 32.0 | 2.0 | 863.0 | 298.0 |
| Siemens Nixdorf | 578.0 | 21.0 | 0.0 | 37.0 | 11.0 | 0.0 | 647.0 | 64.0 |
| Unisys | 106.0 | 11.0 | 15.0 | 11.0 | 3.0 | 1.0 | 147.0 | 35.0 |
| Hewlett-Packard | 106.0 | 3.0 | 14.0 | 11.0 | 5.0 | 1.0 | 140.0 | 0.0 |
| PrimeService | 83.0 | 16.0 | 26.0 | 5.0 | 2.0 | 0.0 | 132.0 | 0.0 |
| AT&T/NCR | 74.0 | 11.0 | 11.0 | 21.0 | 0.0 | 11.0 | 128.0 | 21.0 |
| Rank Xerox | 63.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 64.0 | 0.0 |
| Thomainfor | 53.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 54.0 | 0.0 |
| Memorex | 51.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 51.0 | 0.0 |
| Other System Vendors | 260.0 | 50.0 | 87.0 | 50.0 | 0.0 | 1.0 | 448.0 | 14.0 |
| IMOs (1) | 65.5 | 35.0 | 5.0 | 2.0 | 0.0 | 0.0 | 107.5 | 0.0 |
| VARs (2) | 30.0 | 5.0 | 2.0 | 1.0 | 0.0 | 0.0 | 38.0 | 0.0 |
| ISVs (3) | 7.5 | 0.0 | 75.0 | 32.0 | 2.0 | 18.0 | 134.5 | 0.0 |
| Non-Industry Vendors (4) | 0.0 | 1,240.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1,240.0 | 0.0 |
| TOTAL MARKET | 2,975.0 | 1,485.0 | 370.0 | 250.0 | 100.0 | 35.0 | 5,215.0 | 500.0 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-26

## Customer Services Market Forecast, 1992-1997
## Austria

| SERVICE SECTOR | Market Size (Sch Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 2,975 | 3 | 3,050 | 3,120 | 3,190 | 3,250 | 3,300 | 3,330 | 2 |
| Environmental Services | 1,485 | 4 | 1,545 | 1,610 | 1,670 | 1,740 | 1,810 | 1,880 | 4 |
| Systems Software Support | 370 | 5 | 390 | 410 | 440 | 480 | 520 | 560 | 8 |
| Education and Training | 250 | -6 | 235 | 240 | 240 | 250 | 260 | 270 | 3 |
| Other Professional Services | 100 | 10 | 110 | 120 | 130 | 140 | 150 | 170 | 9 |
| Business Continuity Services | 35 | 14 | 40 | 50 | 60 | 70 | 80 | 100 | 20 |
| TOTAL CUSTOMER SERVICES | 5,215 | 3 | 5,370 | 5,550 | 5,730 | 5,930 | 6,120 | 6,310 | 3 |
| Annual Growth (Percent) | | | 3 | 3 | 3 | 3 | 3 | 3 | |
| *ALL OTHER SERVICES | 500 | 14 | 570 | 610 | 650 | 680 | 710 | 750 | 6 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-27

## Customer Services Revenues, 1991 - Greece (Dra Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 2,610 | 175 | 0 | 295 | 175 | 0 | 3,255 | 1,218 |
| Digital | 1,745 | 52 | 261 | 226 | 174 | 0 | 2,458 | 313 |
| Siemens Nixdorf | 875 | 175 | 0 | 35 | 0 | 0 | 1,085 | 174 |
| AT&T/NCR | 522 | 0 | 0 | 174 | 0 | 0 | 696 | 175 |
| Bull | 348 | 175 | 0 | 0 | 0 | 0 | 523 | 175 |
| Hewlett-Packard | 348 | 0 | 17 | 17 | 18 | 0 | 400 | 0 |
| Olivetti | 346 | 18 | 18 | 18 | 0 | 0 | 400 | 0 |
| PrimeService | 175 | 36 | 50 | 75 | 17 | 0 | 353 | 0 |
| Unisys | 175 | 50 | 17 | 55 | 0 | 0 | 297 | 0 |
| Sun Microsystems | 36 | 2 | 1 | 1 | 1 | 0 | 41 | 0 |
| Other System Vendors | 200 | 2 | 24 | 60 | 0 | 1 | 287 | 0 |
| IMOs (1) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| VARs (2) | 800 | 0 | 0 | 0 | 0 | 0 | 800 | 0 |
| ISVs (3) | 80 | 0 | 0 | 0 | 0 | 0 | 80 | 0 |
| Non-Industry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 8,260 | 685 | 388 | 956 | 385 | 1 | 10,675 | 2,055 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketeers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-28

## Customer Services Market Forecast, 1992-1997
## Greece

| SERVICE SECTOR | Market Size (Dra Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 8,260 | 5 | 8,700 | 9,140 | 9,600 | 10,080 | 10,580 | 11,110 | 5 |
| Environmental Services | 685 | 5 | 720 | 760 | 800 | 840 | 880 | 920 | 5 |
| Systems Software Support | 388 | 16 | 450 | 520 | 600 | 690 | 790 | 910 | 15 |
| Education and Training | 956 | 8 | 1,030 | 1,100 | 1,180 | 1,260 | 1,350 | 1,440 | 7 |
| Other Professional Services | 385 | 19 | 460 | 640 | 640 | 760 | 900 | 1,060 | 18 |
| Business Continuity Services | 1 | 9,900 | 100 | 200 | 200 | 200 | 200 | 200 | 15 |
| TOTAL CUSTOMER SERVICES | 10,675 | 7 | 11,460 | 12,360 | 13,020 | 13,830 | 14,700 | 15,640 | 6 |
| Annual Growth (Percent) | | | 7 | 8 | 5 | 6 | 6 | 6 | |
| *ALL OTHER SERVICES | 2,055 | 15 | 2,365 | 2,370 | 2,370 | 2,370 | 2,370 | 2,370 | 0 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-29

## Customer Services Revenues, 1991 - Ireland
## (IR £ Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Digital | 9.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 13.0 | 2.0 |
| IBM | 9.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 12.0 | 3.0 |
| Siemens/Nixdorf | 2.0 | 1.0 | 0.1 | 0.1 | 0.0 | 0.0 | 3.2 | 0.0 |
| AT&T/NCR | 2.0 | 0.0 | 0.2 | 0.8 | 0.0 | 0.0 | 3.0 | 1.0 |
| Bull | 2.0 | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | 2.3 | 1.0 |
| Hewlett-Packard | 1.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.2 | 1.6 | 0.0 |
| ICL | 1.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 1.4 | 0.0 |
| Sun Microsystems | 1.0 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 1.4 | 0.0 |
| Olivetti | 1.0 | 0.0 | 0.3 | 0.1 | 0.0 | 0.0 | 1.4 | 0.0 |
| PrimeService | 1.0 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 1.4 | 0.0 |
| Rank Xerox | 1.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 |
| Memorex | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Other System Vendors | 3.0 | 0.8 | 1.0 | 1.1 | 0.0 | 0.0 | 5.9 | 0.0 |
| IMOs (1) | 5.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 5.3 | 0.0 |
| VARs (2) | 0.5 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 |
| ISVs (3) | 0.5 | 0.0 | 5.0 | 0.3 | 0.0 | 2.5 | 8.3 | 0.0 |
| Non-Industry | 0.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.0 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 40.0 | 19.0 | 9.1 | 5.2 | 2.0 | 2.7 | 78.0 | 7.0 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-30

## Customer Services Market Forecast, 1992-1997
## Ireland

| | Market Size (IR £ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 40 | 5 | 42 | 44 | 45 | 46 | 47 | 48 | 3 |
| Environmental Services | 19 | 5 | 20 | 21 | 22 | 23 | 23 | 24 | 4 |
| Systems Software Support | 9 | 10 | 10 | 11 | 12 | 13 | 14 | 15 | 8 |
| Education and Training | 5 | 8 | 6 | 6 | 6 | 7 | 7 | 7 | 5 |
| Other Professional Services | 2 | 10 | 2 | 2 | 3 | 3 | 3 | 4 | 10 |
| Business Continuity Services | 3 | 19 | 3 | 4 | 5 | 6 | 7 | 8 | 21 |
| TOTAL CUSTOMER SERVICES | 78 | 6 | 83 | 88 | 93 | 98 | 101 | 106 | 5 |
| Annual Growth (Percent) | | | 6 | 6 | 5 | 5 | 4 | 5 | |
| *ALL OTHER SERVICES | 7 | 11 | 8 | 9 | 9 | 11 | 12 | 13 | 10 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-31

## Customer Services Revenues, 1991 - Portugal (Esc Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 2,698 | 270 | 0 | 229 | 135 | 0 | 3,332 | 1,484 |
| Digital | 2,158 | 405 | 235 | 135 | 135 | 0 | 3,068 | 378 |
| Siemens Nixdorf | 2,024 | 136 | 0 | 40 | 0 | 0 | 2,200 | 270 |
| AT&T/NCR | 675 | 135 | 0 | 135 | 135 | 0 | 1,080 | 135 |
| Olivetti | 675 | 13 | 27 | 13 | 0 | 0 | 728 | 0 |
| Unisys | 270 | 67 | 27 | 40 | 13 | 0 | 417 | 67 |
| Bull | 270 | 135 | 0 | 0 | 0 | 0 | 405 | 135 |
| Hewlett-Packard | 243 | 0 | 40 | 27 | 13 | 0 | 323 | 0 |
| Prime Service | 136 | 26 | 15 | 38 | 14 | 0 | 229 | 0 |
| Rank Xerox | 162 | 0 | 0 | 0 | 0 | 0 | 162 | 0 |
| Other System Vendors | 339 | 113 | 100 | 120 | 130 | 0 | 802 | 30 |
| IMOs (1) | 600 | 0 | 45 | 20 | 10 | 0 | 675 | 1 |
| VARs (2) | 250 | 0 | 11 | 3 | 15 | 0 | 279 | 0 |
| ISVs (3) | 0 | 0 | 1,100 | 0 | 0 | 400 | 1,500 | 0 |
| Non-Industry | 0 | 2,500 | 0 | 0 | 0 | 0 | 2,500 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 10,500 | 3,800 | 1,600 | 800 | 600 | 400 | 17,700 | 2,500 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketeers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-32

## Customer Services Market Forecast, 1992-1997
## Portugal

| SERVICE SECTOR | Market Size (Esc Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 10,500 | 8 | 11,350 | 12,400 | 13,600 | 15,000 | 16,500 | 17,800 | 9 |
| Environmental Services | 3,800 | 11 | 4,200 | 4,600 | 5,000 | 5,400 | 5,700 | 6,000 | 7 |
| Systems Software Support | 1,600 | 16 | 1,850 | 2,100 | 2,400 | 2,700 | 3,000 | 3,300 | 12 |
| Education and Training | 800 | 13 | 900 | 1,000 | 1,100 | 1,200 | 1,300 | 1,400 | 9 |
| Other Professional Services | 600 | 17 | 700 | 800 | 900 | 1,000 | 1,100 | 1,200 | 11 |
| Business Continuity Services | 400 | 25 | 500 | 600 | 700 | 900 | 1,100 | 1,300 | 21 |
| TOTAL CUSTOMER SERVICES | 17,700 | 10 | 19,500 | 21,500 | 23,700 | 26,200 | 28,700 | 31,000 | 10 |
| Annual Growth (Percent) | | | 10 | 10 | 10 | 11 | 10 | 8 | |
| *ALL OTHER SERVICES | 2,500 | 20 | 3,000 | 3,600 | 4,200 | 4,900 | 5,600 | 6,300 | 16 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

EXHIBIT V-33

## Customer Services Revenues, 1991 - Eastern Europe ($ Millions)

| Vendor Sector Revenue | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 30 | 1 | 0 | 1 | 2 | 0 | 34 | 10 |
| Digital | 10 | 8 | 1 | 2 | 2 | 0 | 23 | 3 |
| Siemens Nixdorf | 20 | 1 | 0 | 1 | 0 | 0 | 22 | 1 |
| AT&T/NCR | 4 | 1 | 1 | 1 | 0 | 0 | 7 | 2 |
| ICL | 4 | 1 | 1 | 1 | 0 | 0 | 7 | 1 |
| PrimeService | 2 | 1 | 1 | 0 | 1 | 0 | 5 | 0 |
| Hewlett-Packard | 1 | 1 | 1 | 0 | 0 | 0 | 3 | 0 |
| Unisys | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 |
| Bull | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Olivetti | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| Other System Vendors | 32 | 3 | 7 | 3 | 2 | 0 | 47 | 0 |
| IMOs (1) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| VARs (2) | 52 | 4 | 2 | 1 | 1 | 0 | 60 | 0 |
| ISVs (3) | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Non-Industry | 0 | 24 | 0 | 0 | 0 | 0 | 24 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 160 | 45 | 13 | 12 | 10 | 0 | 240 | 17 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketeers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT V-34

## Customer Services Market Forecast, 1992-1997
## Eastern Europe

| SERVICE SECTOR | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 160 | 3 | 164 | 172 | 185 | 204 | 235 | 294 | 12 |
| Environmental Services | 45 | 2 | 46 | 48 | 53 | 63 | 80 | 108 | 19 |
| Systems Software Support | 13 | 12 | 15 | 16 | 18 | 20 | 22 | 25 | 12 |
| Education and Training | 12 | 17 | 14 | 16 | 19 | 22 | 26 | 30 | 16 |
| Other Professional Services | 10 | 20 | 12 | 14 | 17 | 20 | 24 | 29 | 19 |
| Business Continuity Services | 0 | - | 1 | 2 | 4 | 10 | 20 | 36 | 105 |
| TOTAL CUSTOMER SERVICES | 240 | 5 | 252 | 270 | 400 | 340 | 410 | 520 | 16 |
| Annual Growth (Percent) | | | 5 | 7 | 11 | 13 | 21 | 27 | |
| *ALL OTHER SERVICES | 240 | 18 | 284 | 340 | 410 | 510 | 640 | 800 | 23 |

SOURCE: INPUT

*This line shows the expenditures for other information services spent with customer services vendors as defined in Chapter III section B-1.

Totals may not add due to rounding.

# A
# Leading Equipment Vendor Customer Services Revenues

EXHIBIT A-1

## European Revenues - Amdahl Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 125.3 | 4 | 20 | 10 | 8 | 1.7 | 169 | 0 |
| France | 19 | 0.5 | 3.5 | 1.1 | 1.5 | 0.4 | 26 | 0 |
| Germany | 31 | 1 | 6 | 2.8 | 2.5 | 0.5 | 43.8 | 0 |
| United Kingdom | 30 | 0.9 | 5 | 2.3 | 2.5 | 0.3 | 41 | 0 |
| Italy | 10.3 | 0.2 | 2 | 0.8 | 0.5 | 0.1 | 13.9 | 0 |
| Sweden | 5 | 0.2 | 0.7 | 0.5 | 0.1 | 0.1 | 6.6 | 0 |
| Denmark | 4 | 0.1 | 0.3 | 0.3 | 0.2 | 0 | 4.9 | 0 |
| Norway | 2 | 0.1 | 0.1 | 0.1 | 0.2 | 0 | 2.5 | 0 |
| Finland | 1 | 0 | 0.1 | 0.1 | 0.1 | 0 | 1.3 | 0 |
| Netherlands | 10 | 0.2 | 1 | 0.6 | 0.1 | 0.1 | 12 | 0 |
| Belgium/ Luxemburg | 6.2 | 0.1 | 0.3 | 0.2 | 0.1 | 0.1 | 7 | 0 |
| Spain | 4 | 0.2 | 0.7 | 0.7 | 0.1 | 0.1 | 5.8 | 0 |
| Switzerland | 2 | 0.2 | 0 | 0.1 | 0.1 | 0 | 2.4 | 0 |
| Austria | 0.5 | 0 | 0 | 0.1 | 0 | 0 | 0.6 | 0 |
| Portugal | 0 | 0 | 0.1 | 0.1 | 0 | 0 | 0.2 | 0 |
| Greece | 0 | 0 | 0.1 | 0 | 0 | 0 | 0.1 | 0 |
| Ireland | 0.1 | 0 | 0.1 | 0.1 | 0 | 0 | 0.3 | 0 |
| Eastern Europe | 0.2 | 0.3 | 0 | 0.1 | 0 | 0 | 0.6 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-2

## European Revenues - AT&T/NCR Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 727 | 101 | 26 | 112 | 66 | 8 | 1,040 | 255 |
| France | 120 | 17 | 3 | 18 | 11 | 1 | 170 | 41.5 |
| Germany | 135 | 19 | 4 | 20 | 12 | 2 | 192 | 47 |
| United Kingdom | 110 | 16 | 4 | 18 | 10 | 3 | 161 | 44.5 |
| Italy | 55 | 8 | 2 | 8 | 5 | 0 | 78 | 18 |
| Sweden | 29 | 4 | 1 | 4 | 3 | 0 | 41 | 10 |
| Denmark | 14 | 2 | 1 | 2 | 1 | 0 | 20 | 5 |
| Norway | 13 | 2 | 1 | 2 | 2 | 0 | 20 | 4 |
| Finland | 6 | 1 | 0 | 1 | 1 | 0 | 9 | 2 |
| Netherlands | 38 | 5 | 1 | 6 | 4 | 0 | 54 | 11 |
| Belgium/ Luxemburg | 15 | 2 | 1 | 2 | 1 | 0 | 21 | 4 |
| Spain | 75 | 10 | 3 | 10 | 6 | 1 | 105 | 26 |
| Switzerland | 95 | 12 | 3 | 15 | 8 | 1 | 134 | 35 |
| Austria | 7 | 1 | 1 | 2 | 1 | 0 | 12 | 2 |
| Portugal | 5 | 1 | 0 | 1 | 1 | 0 | 8 | 1 |
| Greece | 3 | 0 | 0 | 1 | 0 | 0 | 4 | 1 |
| Ireland | 3 | 0 | 0 | 1 | 0 | 0 | 4 | 1 |
| Eastern Europe | 4 | 1 | 1 | 1 | 0 | 0 | 7 | 2 |

Note: Totals may not add due to rounding.

EXHIBIT A-3

## European Revenues - Bull Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 895 | 45 | 75 | 65 | 33 | 7 | 1,120 | 375 |
| France | 445 | 10 | 30 | 37 | 10 | 4 | 536 | 188 |
| Germany | 74 | 6 | 6 | 4 | 5 | 1 | 96 | 32 |
| United Kingdom | 93 | 5 | 11 | 7 | 3 | 1 | 120 | 40 |
| Italy | 125 | 9 | 10 | 5 | 6 | 1 | 156 | 52 |
| Sweden | 13 | 1 | 2 | 1 | 0 | 0 | 17 | 6 |
| Denmark | 7 | 2 | 1 | 1 | 2 | 0 | 13 | 4 |
| Norway | 11 | 1 | 2 | 1 | 2 | 0 | 17 | 5 |
| Finland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Netherlands | 30 | 3 | 4 | 3 | 2 | 0 | 42 | 14 |
| Belgium/ Luxemburg | 29 | 3 | 3 | 2 | 1 | 0 | 38 | 12 |
| Spain | 30 | 1 | 4 | 2 | 1 | 0 | 38 | 10 |
| Switzerland | 19 | 1 | 1 | 1 | 0 | 0 | 22 | 6 |
| Austria | 10 | 1 | 1 | 1 | 1 | 0 | 14 | 3 |
| Portugal | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 1 |
| Greece | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 1 |
| Ireland | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 1 |
| Eastern Europe | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-4

## European Revenues - Comparex Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 120 | 0 | 0 | 0 | 0 | 0 | 120 | 0 |
| France | 14 | 0 | 0 | 0 | 0 | 0 | 14 | 0 |
| Germany | 68 | 0 | 0 | 0 | 0 | 0 | 68 | 0 |
| United Kingdom | 25 | 0 | 0 | 0 | 0 | 0 | 25 | 0 |
| Italy | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Sweden | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Denmark | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Norway | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Finland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Netherlands | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Belgium/ Luxemburg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spain | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Switzerland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Austria | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Portugal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greece | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ireland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Europe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-5

## European Revenues - Digital Equipment Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 1,587 | 315 | 269 | 159 | 83 | 17 | 2,430 | 270 |
| France | 210 | 37 | 18 | 21 | 10 | 2 | 298 | 37 |
| Germany | 285 | 54 | 25 | 33 | 13 | 3 | 413 | 42 |
| United Kingdom | 321 | 66 | 109 | 28 | 16 | 4 | 544 | 50 |
| Italy | 113 | 35 | 38 | 15 | 9 | 2 | 212 | 24 |
| Sweden | 90 | 19 | 7 | 10 | 5 | 2 | 133 | 17 |
| Denmark | 22 | 6 | 2 | 3 | 2 | 0 | 35 | 5 |
| Norway | 22 | 3 | 2 | 3 | 1 | 0 | 31 | 4 |
| Finland | 33 | 8 | 4 | 4 | 2 | 1 | 52 | 6 |
| Netherlands | 152 | 28 | 12 | 15 | 6 | 2 | 215 | 27 |
| Belgium/ Luxemburg | 54 | 9 | 11 | 4 | 2 | 0 | 80 | 10 |
| Spain | 73 | 12 | 14 | 5 | 3 | 0 | 107 | 13 |
| Switzerland | 89 | 21 | 9 | 10 | 5 | 1 | 135 | 17 |
| Austria | 71 | 4 | 13 | 4 | 4 | 0 | 96 | 8 |
| Portugal | 16 | 3 | 2 | 1 | 1 | 0 | 23 | 3 |
| Greece | 10 | 0 | 2 | 1 | 1 | 0 | 14 | 2 |
| Ireland | 16 | 2 | 1 | 2 | 1 | 0 | 22 | 3 |
| Eastern Europe | 10 | 8 | 1 | 2 | 2 | 0 | 23 | 3 |

Note: Totals may not add due to rounding.

EXHIBIT A-6

## European Revenues - Getronics Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 96 | 36.6 | 43 | 4 | 48 | 10 | 237.6 | 27 |
| France | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Germany | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| United Kingdom | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Italy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sweden | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Denmark | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norway | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Finland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Netherlands | 84 | 32 | 35 | 3 | 45 | 10 | 209 | 20 |
| Belgium/ Luxemburg | 9 | 3.4 | 6 | 1 | 3 | 0 | 22.4 | 5 |
| Spain | 3 | 1.2 | 2 | 0 | 0 | 0 | 6.2 | 2 |
| Switzerland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Austria | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Portugal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greece | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ireland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Europe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-7

## European Revenues - Granada Computer Services Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 238 | 19 | 0 | 0 | 0 | 0 | 257 | 0 |
| France | 20 | 0 | 0 | 0 | 0 | 0 | 20 | 0 |
| Germany | 10 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| United Kingdom | 151.8 | 19 | 0 | 0 | 0 | 0 | 170.8 | 0 |
| Italy | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Sweden | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Denmark | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norway | 0.1 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 |
| Finland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Netherlands | 20 | 0 | 0 | 0 | 0 | 0 | 20 | 0 |
| Belgium/ Luxemburg | 12 | 0 | 0 | 0 | 0 | 0 | 12 | 0 |
| Spain | 15 | 0 | 0 | 0 | 0 | 0 | 15 | 0 |
| Switzerland | 1.1 | 0 | 0 | 0 | 0 | 0 | 1.1 | 0 |
| Austria | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Portugal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greece | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ireland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Europe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-8

## European Revenues - Hewlett Packard Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 565.5 | 30 | 63 | 45 | 30 | 10 | 743.5 | 0 |
| France | 92 | 4 | 3 | 8 | 5 | 2 | 114 | 0 |
| Germany | 93 | 5 | 3.2 | 8 | 5 | 1 | 115.2 | 0 |
| United Kingdom | 152.5 | 8 | 28.5 | 11 | 9 | 3 | 212 | 0 |
| Italy | 62 | 3 | 10.5 | 4 | 3 | 0 | 82.5 | 0 |
| Sweden | 14 | 0.5 | 0.4 | 0.6 | 0.5 | 0 | 16 | 0 |
| Denmark | 10 | 0.2 | 0.2 | 0.5 | 0.3 | 0 | 11.2 | 0 |
| Norway | 6 | 0 | 0.2 | 0.2 | 0.2 | 0 | 6.6 | 0 |
| Finland | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Netherlands | 30 | 2 | 1 | 3 | 1 | 2 | 39 | 0 |
| Belgium/ Luxemburg | 22.4 | 1 | 2.2 | 2 | 1 | 2 | 30.6 | 0 |
| Spain | 46.8 | 3 | 9.2 | 5 | 3 | 0 | 67 | 0 |
| Switzerland | 20 | 1 | 2.7 | 1 | 1 | 0 | 25.7 | 0 |
| Austria | 10 | 0.3 | 1.3 | 1 | 0.5 | 0 | 13.1 | 0 |
| Portugal | 1.8 | 0 | 0.3 | 0.2 | 0.1 | 0 | 2.4 | 0 |
| Greece | 2 | 0 | 0.1 | 0.1 | 0.1 | 0 | 2.3 | 0 |
| Ireland | 1 | 0.3 | 0.1 | 0.2 | 0.1 | 0 | 1.7 | 0 |
| Eastern Europe | 1 | 1.7 | 0.1 | 0.2 | 0.2 | 0 | 3.2 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-9

## European Revenues - IBM Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 2,910.4 | 300 | 0 | 268.6 | 180 | 6 | 3,665 | 1,640 |
| France | 502.9 | 41 | 0 | 46.7 | 28 | 1 | 619.6 | 281 |
| Germany | 602.5 | 60 | 0 | 60 | 34 | 1 | 757.5 | 345 |
| United Kingdom | 421.3 | 80 | 0 | 37.6 | 45 | 2.35 | 586.25 | 264 |
| Italy | 450.7 | 40 | 0 | 41.7 | 25 | 0 | 557.4 | 230 |
| Sweden | 118.6 | 6 | 0 | 11.7 | 5 | 0 | 141.3 | 64 |
| Denmark | 90 | 8 | 0 | 8.3 | 5 | 0 | 111.3 | 81 |
| Norway | 55 | 5 | 0 | 6.7 | 3 | 0.4 | 70.1 | 30 |
| Finland | 40 | 4 | 0 | 3.3 | 2 | 0.25 | 49.55 | 21 |
| Netherlands | 165 | 15 | 0 | 16.7 | 9 | 1 | 206.7 | 91 |
| Belgium/ Luxemburg | 80 | 7 | 0 | 6.6 | 5 | 0 | 98.6 | 45 |
| Spain | 145 | 18 | 0 | 13.3 | 7 | 0 | 183.3 | 80 |
| Switzerland | 90 | 6 | 0 | 6 | 4 | 0 | 106 | 46 |
| Austria | 69.4 | 5 | 0 | 3.6 | 3 | 0 | 81 | 28 |
| Portugal | 20 | 2 | 0 | 1.7 | 1 | 0 | 24.7 | 11 |
| Greece | 15 | 1 | 0 | 1.7 | 1 | 0 | 18.7 | 7 |
| Ireland | 15 | 1 | 0 | 1.9 | 1 | 0 | 18.9 | 6 |
| Eastern Europe | 30 | 1 | 0 | 1.1 | 2 | 0 | 34.1 | 10 |

Note: Totals may not add due to rounding.

EXHIBIT A-10

## European Revenues - ICL Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 790 | 73 | 61.7 | 28.5 | 14 | 0 | 967.2 | 300 |
| France | 40 | 1 | 1 | 1 | 0 | 0 | 43 | 15 |
| Germany | 13 | 1 | 0 | 1 | 0 | 0 | 15 | 21 |
| United Kingdom | 430 | 50 | 31 | 15 | 5 | 0 | 531 | 234 |
| Italy | 9 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| Sweden | 100 | 5 | 12 | 3 | 4 | 0 | 124 | 12 |
| Denmark | 37 | 2 | 0 | 1 | 0 | 0 | 40 | 3 |
| Norway | 18 | 3 | 1.7 | 2.5 | 0 | 0 | 25.2 | 0 |
| Finland | 95 | 5 | 10 | 2 | 5 | 0 | 117 | 4 |
| Netherlands | 21 | 2 | 3 | 1 | 0 | 0 | 27 | 7 |
| Belgium/ Luxemburg | 6 | 1 | 1 | 0 | 0 | 0 | 8 | 3 |
| Spain | 5 | 1 | 1 | 1 | 0 | 0 | 8 | 0 |
| Switzerland | 7 | 1 | 0 | 0 | 0 | 0 | 8 | 0 |
| Austria | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Portugal | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Greece | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ireland | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Eastern Europe | 4 | 1 | 1 | 1 | 0 | 0 | 7 | 1 |

Note: Totals may not add due to rounding.

EXHIBIT A-11

## European Revenues - Memorex Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 391 | 0 | 0 | 0 | 0 | 0 | 391 | 0 |
| France | 78 | 0 | 0 | 0 | 0 | 0 | 78 | 0 |
| Germany | 97 | 0 | 0 | 0 | 0 | 0 | 97 | 0 |
| United Kingdom | 62 | 0 | 0 | 0 | 0 | 0 | 62 | 0 |
| Italy | 45 | 0 | 0 | 0 | 0 | 0 | 45 | 0 |
| Sweden | 18 | 0 | 0 | 0 | 0 | 0 | 18 | 0 |
| Denmark | 8 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| Norway | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Finland | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Netherlands | 25 | 0 | 0 | 0 | 0 | 0 | 25 | 0 |
| Belgium/ Luxemburg | 22 | 0 | 0 | 0 | 0 | 0 | 22 | 0 |
| Spain | 11 | 0 | 0 | 0 | 0 | 0 | 11 | 0 |
| Switzerland | 9 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| Austria | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Portugal | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Greece | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ireland | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Eastern Europe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-12

## European Revenues - Olivetti S&N Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 904 | 50.4 | 32.5 | 20.3 | 25.1 | 4 | 1,036.3 | 250 |
| France | 120 | 3 | 1 | 1 | 3 | 1 | 129 | 0 |
| Germany | 83 | 2 | 3 | 0.5 | 5 | 1 | 94.5 | 0 |
| United Kingdom | 125 | 0.4 | 2 | 12 | 3 | 1 | 143.4 | 0 |
| Italy | 355 | 40 | 18 | 3 | 10 | 1 | 427 | 250 |
| Sweden | 6 | 0 | 0.2 | 0.2 | 0 | 0 | 6.4 | 0 |
| Denmark | 35 | 0.1 | 0.5 | 0.3 | 0.4 | 0 | 36.3 | 0 |
| Norway | 24 | 1 | 1 | 0.1 | 0.1 | 0 | 26.2 | 0 |
| Finland | 7 | 0.1 | 0 | 0 | 0.1 | 0 | 7.2 | 0 |
| Netherlands | 28 | 0.6 | 0.5 | 0.5 | 0.5 | 0 | 30.1 | 0 |
| Belgium/ Luxemburg | 32 | 0.3 | 2 | 1.5 | 2 | 0 | 37.8 | 0 |
| Spain | 60 | 2 | 2.5 | 0.5 | 0.5 | 0 | 65.5 | 0 |
| Switzerland | 18 | 0.1 | 1 | 0.1 | 0 | 0 | 19.2 | 0 |
| Austria | 1 | 0.1 | 0.2 | 0.1 | 0 | 0 | 1.4 | 0 |
| Portugal | 5 | 0.1 | 0.2 | 0.1 | 0 | 0 | 5.4 | 0 |
| Greece | 2 | 0.1 | 0.1 | 0.1 | 0 | 0 | 2.3 | 0 |
| Ireland | 2 | 0.1 | 0.1 | 0.1 | 0 | 0 | 2.3 | 0 |
| Eastern Europe | 1 | 0.4 | 0.2 | 0.2 | 0.5 | 0 | 2.3 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-13

## European Revenues - PrimeService Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 326 | 68 | 85 | 55 | 31 | 1 | 566 | 0 |
| France | 44 | 10 | 5 | 7 | 5 | 0 | 71 | 0 |
| Germany | 75 | 13 | 12 | 10 | 6 | 0 | 116 | 0 |
| United Kingdom | 85 | 20 | 39 | 20 | 8 | 0 | 172 | 0 |
| Italy | 25 | 6 | 14 | 4 | 3 | 0 | 52 | 0 |
| Sweden | 21 | 2 | 2 | 2 | 1 | 0 | 28 | 0 |
| Denmark | 14 | 2 | 1 | 1 | 1 | 0 | 19 | 0 |
| Norway | 5 | 1 | 1 | 1 | 1 | 0 | 9 | 0 |
| Finland | 3 | 1 | 1 | 1 | 0 | 0 | 5 | 0 |
| Netherlands | 15 | 4 | 2 | 3 | 2 | 0 | 26 | 0 |
| Belgium/ Luxemburg | 6 | 2 | 1 | 1 | 1 | 0 | 10 | 0 |
| Spain | 15 | 3 | 3 | 3 | 2 | 0 | 25 | 0 |
| Switzerland | 6 | 2 | 1 | 1 | 1 | 0 | 11 | 0 |
| Austria | 8 | 2 | 2 | 1 | 0 | 0 | 12 | 0 |
| Portugal | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Greece | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Ireland | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Eastern Europe | 2 | 1 | 0 | 0 | 1 | 0 | 4 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-14

## European Revenues - Rank Xerox Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 184.3 | 1.5 | 2.3 | 2.1 | 2.4 | 0 | 192.6 | 0 |
| France | 43.1 | 0.2 | 0 | 0.2 | 0.3 | 0 | 43.8 | 0 |
| Germany | 37.5 | 0.1 | 1.5 | 0.3 | 0.3 | 0 | 39.7 | 0 |
| United Kingdom | 34 | 0.2 | 0 | 0.5 | 0.6 | 0 | 35.3 | 0 |
| Italy | 6.2 | 0.1 | 0 | 0.1 | 0.2 | 0 | 6.6 | 0 |
| Sweden | 8.6 | 0.1 | 0 | 0.1 | 0.2 | 0 | 9 | 0 |
| Denmark | 6 | 0.2 | 0 | 0 | 0 | 0 | 6.2 | 0 |
| Norway | 5.5 | 0.1 | 0.2 | 0.1 | 0.2 | 0 | 6.1 | 0 |
| Finland | 5 | 0.1 | 0 | 0.2 | 0.2 | 0 | 5.5 | 0 |
| Netherlands | 10.7 | 0.1 | 0.4 | 0.2 | 0.1 | 0 | 11.5 | 0 |
| Belgium/ Luxemburg | 6 | 0.1 | 0 | 0 | 0 | 0 | 6.1 | 0 |
| Spain | 8.5 | 0.1 | 0.2 | 0.3 | 0.3 | 0 | 9.4 | 0 |
| Switzerland | 4.4 | 0 | 0 | 0.1 | 0 | 0 | 4.5 | 0 |
| Austria | 5.9 | 0.1 | 0 | 0 | 0 | 0 | 6 | 0 |
| Portugal | 1.2 | 0 | 0 | 0 | 0 | 0 | 1.2 | 0 |
| Greece | 0.2 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0 |
| Ireland | 1.4 | 0 | 0 | 0 | 0 | 0 | 1.4 | 0 |
| Eastern Europe | 0.1 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-15

## European Revenues - Siemens Nixdorf Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 1,311.4 | 93 | 1.2 | 85.55 | 34.55 | 9.3 | 1,535 | 204.8 |
| France | 130 | 6 | 0 | 7 | 3 | 1 | 147 | 20 |
| Germany | 720 | 48 | 0 | 45 | 10 | 5 | 828 | 100 |
| United Kingdom | 45 | 10 | 0 | 3.85 | 12.35 | 2 | 73.2 | 21 |
| Italy | 60 | 4 | 0 | 5 | 2 | 1 | 72 | 10 |
| Sweden | 20 | 3 | 0 | 2 | 1 | 0 | 26 | 3.8 |
| Denmark | 15 | 1 | 0 | 2 | 1 | 0 | 19 | 3 |
| Norway | 18 | 1 | 0 | 2 | 0.5 | 0 | 21.5 | 2 |
| Finland | 16 | 1 | 1.2 | 0.5 | 0.2 | 0 | 18.9 | 1 |
| Netherlands | 32 | 2 | 0 | 2 | 0 | 0.3 | 36.3 | 6 |
| Belgium/ Luxemburg | 45 | 3 | 0 | 2 | 0.5 | 0 | 50.5 | 9 |
| Spain | 65 | 4 | 0 | 6 | 2 | 0 | 77 | 10 |
| Switzerland | 48 | 4 | 0 | 3 | 1 | 0 | 56 | 9 |
| Austria | 54.4 | 2 | 0 | 3.5 | 1 | 0 | 60.9 | 6 |
| Portugal | 15 | 1 | 0 | 0.3 | 0 | 0 | 16.3 | 2 |
| Greece | 5 | 1 | 0 | 0.2 | 0 | 0 | 6.2 | 1 |
| Ireland | 3 | 1 | 0 | 0.2 | 0 | 0 | 4.2 | 0 |
| Eastern Europe | 20 | 1 | 0 | 1 | 0 | 0 | 22 | 1 |

Note: Totals may not add due to rounding.

EXHIBIT A-16

## European Revenues - Sun Microsystems Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 189 | 13 | 4 | 6 | 2 | 0 | 214 | 13 |
| France | 38 | 3 | 1 | 1 | 1 | 0 | 43 | 3 |
| Germany | 47 | 3 | 1 | 2 | 1 | 0 | 54 | 3 |
| United Kingdom | 40 | 3 | 1 | 1 | 1 | 0 | 45 | 3 |
| Italy | 17 | 1 | 0 | 1 | 0 | 0 | 19 | 2 |
| Sweden | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Denmark | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Norway | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Finland | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Netherlands | 9 | 1 | 0 | 0 | 0 | 0 | 10 | 1 |
| Belgium/ Luxemburg | 7 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| Spain | 11 | 1 | 0 | 0 | 0 | 0 | 13 | 1 |
| Switzerland | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Austria | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Portugal | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Greece | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ireland | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Eastern Europe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-17

## European Revenues - Tandem Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 119 | 10 | 4 | 4 | 2 | 0 | 139 | 0 |
| France | 24 | 2 | 1 | 0 | 1 | 0 | 27 | 0 |
| Germany | 36 | 3 | 1 | 2 | 1 | 0 | 42 | 0 |
| United Kingdom | 30 | 3 | 1 | 1 | 1 | 0 | 35 | 0 |
| Italy | 8 | 1 | 0 | 0 | 0 | 0 | 9 | 0 |
| Sweden | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Denmark | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Norway | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Finland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Netherlands | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Belgium/ Luxemburg | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| Spain | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Switzerland | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Austria | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Portugal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greece | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ireland | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Eastern Europe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-18

## European Revenues - Thomainfor Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 225 | 0 | 0 | 0 | 0 | 0 | 225 | 0 |
| France | 187 | 0 | 0 | 0 | 0 | 0 | 187 | 0 |
| Germany | 12 | 0 | 0 | 0 | 0 | 0 | 12 | 0 |
| United Kingdom | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Italy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sweden | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Denmark | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Norway | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Finland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Netherlands | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Belgium/ Luxemburg | 9 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| Spain | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Switzerland | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Austria | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| Portugal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greece | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ireland | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Europe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Totals may not add due to rounding.

EXHIBIT A-19

## European Revenues - Unisys Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 601 | 123.8 | 71.9 | 68.5 | 46.1 | 13.5 | 924.8 | 262.4 |
| France | 90 | 40 | 10 | 15 | 15 | 2 | 172 | 49 |
| Germany | 60 | 15 | 5 | 8 | 6 | 3 | 97 | 28 |
| United Kingdom | 135 | 30 | 15 | 12 | 10 | 5 | 207 | 60 |
| Italy | 45 | 7 | 5 | 4 | 2 | 1 | 64 | 21.2 |
| Sweden | 30 | 4 | 4 | 3 | 2 | 1 | 44 | 12.3 |
| Denmark | 10 | 2 | 2 | 1 | 1 | 0 | 16 | 4.6 |
| Norway | 4 | 1 | 1 | 1 | 1 | 0 | 8 | 2 |
| Finland | 15 | 2 | 1 | 1.5 | 1.2 | 0 | 20.7 | 5 |
| Netherlands | 50 | 8 | 7 | 6 | 3 | 1 | 75 | 21 |
| Belgium/ Luxemburg | 30 | 3 | 3 | 3 | 1 | 0 | 40 | 11.2 |
| Spain | 50 | 5 | 9 | 5 | 2 | 0.5 | 71.5 | 20 |
| Switzerland | 65 | 5 | 9 | 7 | 1 | 0 | 87 | 24.1 |
| Austria | 10 | 1 | 0.5 | 1 | 0.3 | 0 | 12.8 | 3.3 |
| Portugal | 2 | 0.5 | 0.2 | 0.3 | 0.1 | 0 | 3.1 | 0.5 |
| Greece | 1 | 0.3 | 0.1 | 0.3 | 0 | 0 | 1.7 | 0 |
| Ireland | 2 | 0 | 0.1 | 0.2 | 0 | 0 | 2.3 | 0 |
| Eastern Europe | 2 | 0 | 0 | 0.2 | 0.5 | 0 | 2.7 | 0.2 |

Note: Totals may not add due to rounding.

EXHIBIT A-20

## European Revenues - Wang Customer Services, 1991 ($ Millions)

| COUNTRY | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Customer Service Vendor Revenues | 236 | 32 | 45 | 32 | 28 | 0 | 373 | 0 |
| France | 61 | 9 | 12 | 7 | 7 | 0 | 95 | 0 |
| Germany | 36 | 5 | 7 | 3 | 2 | 0 | 53 | 0 |
| United Kingdom | 68 | 11 | 12 | 12 | 11 | 0 | 114 | 0 |
| Italy | 17 | 2 | 3 | 2 | 1 | 0 | 25 | 0 |
| Sweden | 10 | 2 | 3 | 1 | 1 | 0 | 16 | 0 |
| Denmark | 4 | 1 | 1 | 1 | 1 | 0 | 7 | 0 |
| Norway | 4 | 0 | 1 | 1 | 0 | 0 | 6 | 0 |
| Finland | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Netherlands | 10 | 1 | 1 | 2 | 2 | 0 | 16 | 0 |
| Belgium/ Luxemburg | 13 | 1 | 2 | 1 | 1 | 0 | 18 | 0 |
| Spain | 7 | 1 | 2 | 2 | 1 | 0 | 12 | 0 |
| Switzerland | 3 | 0 | 1 | 1 | 0 | 0 | 4 | 0 |
| Austria | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 0 |
| Portugal | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Greece | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ireland | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Eastern Europe | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Totals may not add due to rounding.

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# B
# Market Forecast Reconciliation

In 1990 and previous years INPUT's forecast for the customer services market in Europe (Western Europe) focused on user expenditure with customer services vendors. These vendors were defined as:

- Equipment vendors
- Independent Maintenance Organisations (IMOs)
- Dealers and Distributors.

Further, previous market forecasts focused specifically on user expenditure with the customer services organisations of customer services vendors. Other parts of the vendors' organisations providing customer services were excluded.

In 1991 market definitions were changed to more accurately focus on the total customer services market and provide a forecast for total user expenditure for customer services. Therefore, all vendors and organisations providing the services defined within the Customer Services sectors were included in INPUT's 1991 forecasts. These comprised:

- Customer Services vendors

- Independent Software and Services vendors

- Non-industry vendors

- All organisations within a vendor's company that accrue customer services revenues.

The main impact that the new market definition had on the 1991 forecasts was to substantially increase the size of the professional services sector as a consequence of including non-industry vendors.

The growth forecast for the professional services sector has in 1992 decreased substantially to about 11% CAGR, due to bringing this sector into line with the definitions used in INPUT's overall Information Services database.

In 1992 other improvements to the market sizing and forecasting were added principally at the request of the INPUT client base in order to align the market sectors more closely with those used internally within client companies. The new changes for 1992 are:

- Two new sectors have been added (see Chapter III for details)
  - Environmental services
  - Business continuity services.
- Eastern Europe has been added to the market and is currently being treated as a single group of countries.

The effect of these changes on the market sector reconciliations as shown in Exhibits B1 and B2 are:

- It is not possible to show a variance for the new service categories/ countries
- Professional Services sector registers a very large (-91%) drop over the 1991 figures because the old sector has been split to form Environmental Services and the new Professional Services.

Variances in market sector sizes (see Exhibit B1) are otherwise small and all within the limits of the new conversion factors used (see Appendix D). There were also some small differences due to vendor estimates of revenues to be gained in 1991 differing from the revenues actually obtained. In addition an adjustment was made to increase the size of Education and Training by an amount which a major vendor had not reported to us, but this was compensated for by a real drop in sector revenues on the part of many vendors active in the sector.

Variances in country market sizes (see Exhibit B-2) are mostly in the negative direction, usually the result of differences between 1991 vendor estimates and what was reported in 1992.

The major changes highlighted by this reconciliation, however, are in the 5-year growth rates. In most countries the previous forecast CAGRs have been approximately halved due to the continuing poor economic climate in Europe and worldwide. Sector growth rates have been similarly marked down by between 16% and 72% to give an overall CAGR for the forward five years which is 55% of the equivalent CAGR given in the 1991 report.

EXHIBIT B-1

## Customer Services Market Forecast Reconciliation
## Service Sectors

| SERVICE SECTOR | 1991 ESTIMATED SIZE OF 1991 MARKET ($MILLIONS) | 1992 MEASURED SIZE OF 1991 MARKET ($MILLIONS) | VARIANCE IN 1991 SIZES (PERCENT) | CAGR FORECAST IN 1991 REPORT 1991-1996 (PERCENT) | CAGR FORECAST IN 1992 REPORT 1992-1997 (PERCENT) | VARIANCE IN CAGR (PERCENT) |
|---|---|---|---|---|---|---|
| Hardware Service | 15,300 | 15,700 | +3% | 2.5 | 1.9 | -24% |
| Environmental Services | NA | 7,500 | - | NA | 5.4 | - |
| Systems Software Support | 1,800 | 1,730 | -4% | 13.5 | 8.1 | -40% |
| Education and Training | 1,300 | 1,350 | +4% | 13.0 | 3.7 | -72% |
| Professional Services | 8,700 | 740 | -91% | 13.0 | 10.9 | -16% |
| Business Continuity Services | NA | 300 | - | NA | 19.6 | - |
| **TOTAL** | **27,100** | **27,320** | **+0.8%** | **7.5** | **4.1** | **-45%** |

EXHIBIT B-2

## Customer Services Market Forecast Reconciliation
## Country Markets

| COUNTRY MARKET | 1991 FORECAST OF 1991 MARKET | 1992 MEASUREMENT OF 1991 MARKET | CAGR FORECAST IN 1991 REPORT 1991-1996 (PERCENT) | CAGR FORECAST IN 1992 REPORT 1992-1997 (PERCENT) |
|---|---|---|---|---|
| FRANCE | FF 24,700 M | FF 23,975 M | 6.5 | 2.4 |
| GERMANY | DM 8,250 M | DM 8,070 M | 6.0 | 3.1 |
| UNITED KINGDOM | £3,070 M | £2,945 M | 7.0 | 3.5 |
| ITALY | LIRA 3,950 B | LIRA 3,870 B | 8.0 | 4.4 |
| SWEDEN | SK 6,600 M | SK 6,100 M | 8.5 | 4.6 |
| DENMARK | DK 3,880 M | DK 3,445 M | 7.0 | 2.9 |
| NORWAY | NK 3,620 M | NK 3,580 M | 9.0 | 3.9 |
| FINLAND | FM 1,950 M | FM 1,890 M | 5.5 | 3.6 |
| NETHERLANDS | Dfl 2,740 M | Dfl 2,780 M | 9.0 | 5.3 |
| BELGIUM | BF 22,900 M | BF 22,530 M | 8.0 | 4.7 |
| SPAIN | PTA 123,000 M | PTA 116,500 M | 10.0 | 7.0 |
| SWITZERLAND | SF 1,620 M | SF 1,505 M | 9.5 | 3.6 |
| AUSTRIA | AS 5,750 M | AS 5,220 M | 8.0 | 3.5 |
| REST OF EUROPE | $508 M | $570 M | 10.5 | 11.1 |

NOTE: Rounded Numbers

# C
# Country Markets Database

EXHIBIT C-1

## Customer Services Revenues, 1991 - France
## ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 530 | 41 | 0 | 43 | 28 | 1 | 642 | 281 |
| Bull | 445 | 10 | 30 | 37 | 10 | 4 | 536 | 188 |
| Digital | 210 | 37 | 18 | 21 | 10 | 2 | 298 | 38 |
| Thomainfor | 187 | 0 | 0 | 0 | 0 | 0 | 187 | 0 |
| Unisys | 90 | 40 | 10 | 15 | 15 | 2 | 172 | 49 |
| AT&T/NCR | 120 | 17 | 3 | 18 | 11 | 1 | 170 | 42 |
| Siemens Nixdorf | 130 | 6 | 0 | 7 | 3 | 1 | 147 | 20 |
| Olivetti | 120 | 3 | 1 | 1 | 3 | 1 | 129 | 0 |
| Hewlett-Packard | 92 | 4 | 3 | 8 | 5 | 2 | 114 | 0 |
| Wang | 61 | 9 | 12 | 7 | 7 | 0 | 95 | 0 |
| Other System Vendors | 496 | 36 | 50 | 30 | 27 | 1 | 639 | 18 |
| IMOs (1) | 215 | 4 | 4 | 3 | 12 | 3 | 240 | 0 |
| VARs (2) | 43 | 1 | 2 | 2 | 1 | 0 | 49 | 0 |
| ISVs (3) | 39 | 0 | 73 | 55 | 0 | 40 | 207 | 0 |
| Non-Industry | 0 | 1,004 | 0 | 0 | 0 | 0 | 1,004 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 2,776 | 1,211 | 206 | 246 | 132 | 57 | 4,628 | 635 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-2

## Customer Services Market Forecast, 1992-1997
## France

| SERVICE SECTOR | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 2,776 | 1 | 2,799 | 2,830 | 2,860 | 2,890 | 2,920 | 2,960 | 1 |
| Environmental Services | 1,211 | 5 | 1,272 | 1,340 | 1,410 | 1,480 | 1,550 | 1,630 | 5 |
| Systems Software Support | 206 | 3 | 212 | 220 | 230 | 240 | 250 | 260 | 4 |
| Education and Training | 246 | -6 | 232 | 230 | 230 | 240 | 250 | 280 | 4 |
| Other Professional Services | 132 | 13 | 149 | 170 | 190 | 210 | 230 | 250 | 11 |
| Business Continuity Services | 57 | 16 | 66 | 80 | 90 | 110 | 130 | 150 | 18 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **4,628** | **2** | **4,730** | **4,870** | **5,010** | **5,170** | **5,330** | **5,530** | **3** |
| Annual Growth (Percent) | | | 2 | 3 | 3 | 3 | 3 | 4 | |
| ALL OTHER SERVICES | 635 | 6 | 676 | 720 | 780 | 850 | 940 | 1,050 | 9 |

SOURCE: INPUT
Note: Totals may not add due to rounding.

EXHIBIT C-3

## Customer Services Revenues, 1991 - Germany ($Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Siemens Nixdorf | 719.7 | 48.0 | 0.0 | 44.7 | 9.9 | 5.3 | 827.6 | 100.0 |
| IBM | 634.9 | 59.9 | 0.0 | 59.9 | 34.2 | 1.3 | 790.1 | 344.7 |
| Digital | 284.9 | 53.9 | 25.0 | 32.9 | 13.2 | 3.3 | 413.2 | 52.0 |
| AT&T/NCR | 134.9 | 19.1 | 3.9 | 19.7 | 11.8 | 2.0 | 191.4 | 46.7 |
| PrimeService | 75.0 | 13.2 | 11.8 | 9.9 | 5.9 | 0.7 | 116.4 | 0.0 |
| Hewlett-Packard | 92.8 | 5.3 | 3.3 | 7.9 | 5.3 | 1.3 | 115.8 | 0.0 |
| Memorex | 97.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 97.4 | 0.0 |
| Unisys | 59.9 | 15.1 | 5.3 | 7.9 | 5.9 | 3.3 | 97.4 | 28.3 |
| Bull | 73.7 | 5.9 | 5.9 | 3.9 | 5.3 | 1.3 | 96.1 | 32.2 |
| Olivetti | 82.9 | 2.0 | 3.3 | 0.7 | 5.3 | 1.3 | 95.4 | 0.0 |
| Other System Vendors | 559.2 | 32.9 | 65.8 | 32.9 | 0.0 | 3.3 | 694.1 | 0.0 |
| IMOs (1) | 134.9 | 0.0 | 6.6 | 6.6 | 0.0 | 1.3 | 149.3 | 0.0 |
| VARs (2) | 105.3 | 6.6 | 32.9 | 3.3 | 0.0 | 0.0 | 148.0 | 0.0 |
| ISVs (3) | 46.1 | 0.0 | 184.2 | 52.6 | 0.0 | 42.8 | 325.7 | 0.0 |
| Non-Industry | 0.0 | 1,151.3 | 0.0 | 0.0 | 0.0 | 0.0 | 1,151.3 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 3,101.3 | 1,413.2 | 348.0 | 282.9 | 96.7 | 67.1 | 5,309.2 | 603.9 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketeers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-4

## Customer Services Market Forecast, 1992-1997
## Germany

| | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 3,101 | 1 | 3,125 | 3,150 | 3,180 | 3,210 | 3,260 | 3,330 | 1 |
| Environmental Services | 1,413 | 7 | 1,513 | 1,600 | 1,680 | 1,750 | 1,800 | 1,890 | 5 |
| Systems Software Support | 348 | 8 | 375 | 400 | 430 | 460 | 490 | 520 | 7 |
| Education and Training | 283 | 0 | 283 | 286 | 292 | 301 | 313 | 329 | 3 |
| Other Professional Services | 97 | 9 | 105 | 115 | 125 | 136 | 148 | 161 | 9 |
| Business Continuity Services | 67 | 8 | 72 | 80 | 89 | 101 | 116 | 136 | 13 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **5,309** | **3** | **5,474** | **5,630** | **5,800** | **5,960** | **6,130** | **6,370** | **3** |
| Annual Growth (Percent) | | | 3 | 3 | 3 | 3 | 3 | 4 | |
| ALL OTHER SERVICES | 604 | 9 | 658 | 710 | 760 | 810 | 850 | 890 | 6 |

SOURCE: INPUT
Note: Totals may not add due to rounding.

EXHIBIT C-5

## Customer Services Revenues, 1991 - United Kingdom ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 444 | 81 | 0 | 38 | 45 | 2 | 609 | 263 |
| Digital | 321 | 66 | 109 | 27 | 17 | 4 | 544 | 70 |
| ICL | 430 | 51 | 30 | 15 | 6 | 0 | 532 | 233 |
| Hewlett-Packard | 152 | 8 | 28 | 11 | 9 | 4 | 212 | 0 |
| Unisys | 135 | 30 | 15 | 12 | 9 | 6 | 208 | 60 |
| PrimeService | 85 | 21 | 39 | 21 | 8 | 0 | 173 | 0 |
| Granada | 152 | 19 | 0 | 0 | 0 | 0 | 171 | 0 |
| AT&T/NCR | 111 | 17 | 4 | 19 | 9 | 4 | 164 | 45 |
| Olivetti | 126 | 0 | 2 | 11 | 4 | 2 | 145 | 0 |
| Bull | 92 | 6 | 11 | 8 | 4 | 2 | 122 | 39 |
| Other System Vendors | 459 | 43 | 81 | 34 | 34 | 6 | 656 | 6 |
| IMOs (1) | 430 | 6 | 4 | 4 | 4 | 6 | 453 | 0 |
| VARs (2) | 47 | 2 | 6 | 4 | 2 | 0 | 60 | 0 |
| ISVs (3) | 41 | 0 | 150 | 28 | 0 | 47 | 267 | 0 |
| Non-Industry | 0 | 1,222 | 0 | 0 | 0 | 0 | 1,222 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 3,026 | 1,570 | 479 | 231 | 150 | 81 | 5,538 | 716 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketeers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-6

## Customer Services Market Forecast, 1992-1997
## United Kingdom

| | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 3,026 | -1 | 3,008 | 3,040 | 3,080 | 3,120 | 3,170 | 3,230 | 1 |
| Environmental Services | 1,570 | 2 | 1,598 | 1,610 | 1,640 | 1,690 | 1,760 | 1,850 | 3 |
| Systems Software Support | 479 | 8 | 517 | 570 | 620 | 670 | 720 | 780 | 9 |
| Education and Training | 231 | -15 | 195 | 180 | 180 | 180 | 190 | 200 | 0 |
| Other Professional Services | 150 | 13 | 169 | 190 | 210 | 230 | 260 | 300 | 12 |
| Business Continuity Services | 81 | 28 | 103 | 130 | 160 | 200 | 240 | 280 | 22 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **5,538** | **1** | **5,590** | **5,720** | **5,890** | **6,090** | **6,340** | **6,640** | **4** |
| Annual Growth (Percent) | | | 1 | 2 | 3 | 3 | 4 | 5 | |
| ALL OTHER SERVICES | 697 | 8 | 752 | 820 | 900 | 990 | 1,090 | 1,250 | 11 |

SOURCE: INPUT

Note: Totals may not add due to rounding.

EXHIBIT C-7

## Customer Services Revenues, 1991 - Italy ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 461.7 | 40.0 | 0.0 | 38.3 | 25.2 | 0.0 | 565.2 | 230.4 |
| Olivetti | 354.8 | 40.0 | 18.3 | 2.6 | 10.4 | 0.9 | 427.0 | 250.4 |
| Digital | 113.0 | 34.8 | 37.4 | 14.8 | 8.7 | 1.7 | 210.4 | 185.2 |
| Bull | 125.2 | 8.7 | 10.4 | 5.2 | 6.1 | 0.9 | 156.5 | 52.2 |
| AT&T/NCR | 54.8 | 7.8 | 1.7 | 7.8 | 5.2 | 0.0 | 77.4 | 18.3 |
| Hewlett-Packard | 61.7 | 2.6 | 10.4 | 4.3 | 2.6 | 0.0 | 81.7 | 0.0 |
| Siemens Nixdorf | 60.0 | 4.3 | 0.0 | 5.2 | 1.7 | 0.9 | 72.2 | 10.4 |
| Unisys | 45.2 | 7.0 | 5.2 | 4.3 | 1.7 | 0.9 | 64.3 | 20.9 |
| Memorex | 45.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 45.2 | 0.0 |
| PrimeService | 25.2 | 6.1 | 13.9 | 4.3 | 2.6 | 0.0 | 52.2 | 0.0 |
| Other System Vendors | 478.3 | 48.7 | 39.1 | 41.7 | 15.7 | 15.7 | 639.1 | 75.7 |
| IMOs (1) | 143.3 | 4.3 | 1.7 | 0.9 | 1.7 | 0.0 | 152.2 | 0.0 |
| VARs (2) | 56.5 | 4.3 | 0.9 | 1.7 | 1.7 | 0.0 | 65.2 | 0.0 |
| ISVs (3) | 5.2 | 0.0 | 43.5 | 12.2 | 0.0 | 0.0 | 60.9 | 0.0 |
| Non-Industry | 0.0 | 695.7 | 0.0 | 0.0 | 0.0 | 0.0 | 695.7 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 2,030.4 | 904.3 | 182.6 | 143.5 | 83.5 | 20.9 | 3,365.2 | 843.5 |

SOURCE: INPUT
NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors
Totals may not add due to rounding.

EXHIBIT C-8

## Customer Services Market Forecast, 1992-1997
## Italy

| | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 2,030 | 1 | 2,048 | 2,079 | 2,110 | 2,142 | 2,174 | 2,207 | 2 |
| Environmental Services | 904 | 7 | 968 | 1,036 | 1,109 | 1,187 | 1,270 | 1,358 | 7 |
| Systems Software Support | 183 | 10 | 200 | 220 | 243 | 270 | 297 | 326 | 10 |
| Education and Training | 143 | -3 | 139 | 141 | 145 | 154 | 170 | 187 | 6 |
| Other Professional Services | 83 | 15 | 96 | 108 | 121 | 134 | 149 | 165 | 12 |
| Business Continuity Services | 21 | 12 | 23 | 27 | 31 | 36 | 43 | 53 | 18 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **3,365** | **3** | **3,474** | **3,610** | **3,760** | **3,920** | **4,100** | **4,300** | **4** |
| Annual Growth (Percent) | | | 3 | 4 | 4 | 4 | 5 | 5 | |
| ALL OTHER SERVICES | 843 | 8 | 913 | 990 | 1,070 | 1,160 | 1,250 | 1,360 | 8 |

SOURCE: INPUT
Note: Totals may not add due to rounding.

EXHIBIT C-9

## Customer Services Revenues, 1991 - Sweden ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 125.1 | 6.0 | 7.0 | 11.7 | 5.1 | 0.2 | 155.1 | 64.1 |
| Digital | 90.1 | 19.0 | 11.9 | 9.7 | 5.1 | 2.0 | 137.7 | 16.8 |
| ICL | 100.0 | 5.1 | 4.0 | 3.1 | 4.0 | 0.0 | 116.1 | 11.9 |
| Unisys | 30.0 | 4.0 | 1.1 | 3.1 | 2.0 | 1.1 | 41.2 | 12.3 |
| AT&T/NCR | 29.1 | 4.0 | 0.0 | 4.0 | 3.1 | 0.0 | 40.1 | 9.9 |
| Siemens Nixdorf | 20.0 | 3.1 | 2.5 | 2.0 | 1.1 | 0.0 | 28.7 | 3.8 |
| Wang | 9.9 | 1.4 | 4.7 | 1.1 | 1.1 | 0.0 | 18.2 | 0.0 |
| Norsk Data | 12.3 | 0.5 | 4.7 | 2.7 | 2.2 | 0.0 | 22.4 | 0.0 |
| Bull | 13.0 | 1.1 | 2.0 | 1.1 | 0.0 | 0.0 | 17.1 | 6.0 |
| Hewlett-Packard | 14.1 | 0.5 | 0.4 | 0.5 | 0.5 | 0.0 | 16.1 | 0.0 |
| PrimeService | 9.0 | 2.0 | 2.0 | 2.0 | 1.1 | 0.0 | 16.1 | |
| Other System Vendors | 74.4 | 9.9 | 18.6 | 8.1 | 13.7 | 1.8 | 126.5 | 14.3 |
| IMOs (1) | 52.3 | 0.5 | 0.5 | 0.5 | 0.7 | 0.9 | 55.6 | 0.0 |
| VARs (2) | 21.7 | 0.4 | 0.5 | 0.5 | 0.4 | 0.0 | 23.5 | 0.0 |
| ISVs (3) | 4.5 | 0.4 | 11.6 | 7.6 | 0.4 | 5.4 | 29.8 | 0.0 |
| Non-Industry | 0.0 | 261.7 | 0.0 | 0.0 | 0.0 | 0.0 | 261.7 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 605.4 | 319.5 | 71.5 | 57.8 | 40.3 | 11.4 | 1,105.8 | 139.0 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-10

## Customer Services Market Forecast, 1992-1997
## Sweden

| SERVICE SECTOR | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 605 | 6 | 640 | 670 | 690 | 700 | 710 | 720 | 2 |
| Environmental Services | 319 | 5 | 336 | 350 | 370 | 390 | 410 | 430 | 5 |
| Systems Software Support | 67 | 12 | 75 | 80 | 90 | 100 | 110 | 120 | 10 |
| Education and Training | 58 | 0 | 58 | 63 | 68 | 73 | 77 | 81 | 7 |
| Other Professional Services | 40 | 17 | 47 | 53 | 59 | 66 | 73 | 78 | 11 |
| Business Continuity Services | 11 | 8 | 12 | 14 | 16 | 18 | 22 | 26 | 16 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **1,101** | **6** | **1,168** | **1,230** | **1,290** | **1,350** | **1,400** | **1,460** | **5** |
| Annual Growth (Percent) | | | 6 | 5 | 5 | 5 | 4 | 4 | |
| ALL OTHER SERVICES | 139 | 8 | 150 | 160 | 170 | 180 | 190 | 200 | 6 |

SOURCE: INPUT
Note: Totals may not add due to rounding.

EXHIBIT C-11

## Customer Services Revenues, 1991 - Denmark
## ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 90.0 | 8.0 | 0.0 | 7.3 | 5.1 | 0.0 | 110.4 | 81.0 |
| ICL | 37.0 | 2.0 | 0.0 | 1.0 | 0.0 | 0.0 | 40.1 | 3.1 |
| Olivetti | 35.0 | 0.2 | 0.5 | 0.3 | 0.3 | 0.0 | 36.3 | 0.0 |
| Digital | 22.1 | 5.9 | 2.0 | 3.1 | 2.0 | 0.0 | 35.1 | 4.6 |
| AT&T/NCR | 13.9 | 2.0 | 1.0 | 2.0 | 1.0 | 0.0 | 20.0 | 4.9 |
| Siemens Nixdorf | 15.1 | 1.0 | 0.0 | 2.0 | 1.0 | 0.0 | 19.2 | 3.1 |
| PrimeService | 13.9 | 2.0 | 1.0 | 1.0 | 1.0 | 0.0 | 19.0 | 0.0 |
| Unisys | 10.0 | 2.0 | 2.0 | 1.0 | 1.0 | 0.0 | 16.1 | 4.6 |
| Bull | 7.0 | 2.0 | 1.0 | 1.0 | 2.0 | 0.0 | 13.1 | 4.1 |
| Hewlett-Packard | 10.0 | 0.2 | 0.2 | 0.5 | 0.3 | 0.0 | 11.2 | 0.0 |
| Other System | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Vendors | 50.9 | 3.1 | 16.1 | 6.8 | 2.5 | 0.0 | 79.5 | 4.2 |
| IMOs (1) | 8.0 | 2.2 | 2.5 | 0.3 | 2.0 | 0.3 | 15.4 | 0.0 |
| VARs (2) | 2.0 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 3.4 | 1.7 |
| ISVs (3) | 3.4 | 0.0 | 6.8 | 1.7 | 0.0 | 1.2 | 13.1 | 0.0 |
| Non-Industry | 0.0 | 152.8 | 0.0 | 0.0 | 0.0 | 0.0 | 152.8 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 318.3 | 183.9 | 33.6 | 28.5 | 18.7 | 1.7 | 584.7 | 111.2 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-12

## Customer Services Market Forecast, 1992-1997
## Denmark

| | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 318 | -1 | 314 | 309 | 304 | 299 | 295 | 290 | -2 |
| Environmental Services | 184 | 2 | 187 | 196 | 208 | 223 | 241 | 255 | 6 |
| Systems Software Support | 34 | 11 | 37 | 41 | 45 | 49 | 53 | 57 | 9 |
| Education and Training | 29 | 1 | 29 | 29 | 29 | 30 | 32 | 35 | 4 |
| Other Professional Services | 19 | 18 | 22 | 25 | 29 | 33 | 37 | 41 | 13 |
| Business Continuity Services | 2 | 20 | 2 | 2 | 3 | 4 | 4 | 5 | 21 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **585** | **1** | **591** | **600** | **620** | **640** | **660** | **680** | **3** |
| Annual Growth (Percent) | | | 1 | 1 | 3 | 3 | 3 | 3 | |
| ALL OTHER SERVICES | 111 | 10 | 122 | 130 | 140 | 150 | 160 | 170 | 7 |

SOURCE: INPUT

Note: Totals may not add due to rounding.

EXHIBIT C-13

## Customer Services Revenues, 1991 - Norway
## ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Norsk Data | 48.5 | 4.7 | 20.1 | 10.0 | 5.0 | 0.5 | 88.8 | 0.0 |
| IBM | 55.2 | 5.0 | 0.0 | 5.9 | 3.0 | 0.3 | 69.4 | 30.1 |
| Digital | 22.1 | 3.0 | 2.0 | 2.5 | 1.0 | 0.0 | 30.6 | 4.0 |
| Olivetti | 24.1 | 1.0 | 1.0 | 0.2 | 0.2 | 0.0 | 26.4 | 0.0 |
| ICL | 18.1 | 3.0 | 1.7 | 2.5 | 0.0 | 0.0 | 25.3 | 0.0 |
| Siemens Nixdorf | 18.1 | 1.0 | 0.0 | 2.0 | 0.5 | 0.0 | 21.6 | 2.0 |
| AT&T/NCR | 13.0 | 2.0 | 1.0 | 2.0 | 2.2 | 0.0 | 20.2 | 4.0 |
| Bull | 11.0 | 1.0 | 2.0 | 1.0 | 2.0 | 0.0 | 17.1 | 0.0 |
| Wang | 4.2 | 0.3 | 0.7 | 0.5 | 0.3 | 0.0 | 6.0 | 0.0 |
| PrimeService | 5.0 | 1.0 | 1.0 | 1.0 | 0.5 | 0.0 | 8.5 | 0.0 |
| Other System Vendors | 67.9 | 7.4 | 11.2 | 14.5 | 4.8 | 0.3 | 106.2 | 3.3 |
| IMOs (1) | 11.7 | 1.7 | 0.3 | 0.3 | 0.8 | 0.2 | 15.1 | 0.0 |
| VARs (2) | 2.2 | 0.5 | 0.0 | 0.2 | 0.3 | 0.2 | 3.3 | 0.0 |
| ISVs (3) | 3.3 | 0.2 | 6.7 | 2.5 | 0.5 | 4.8 | 18.1 | 0.0 |
| Non-Industry | 0.0 | 142.1 | 0.0 | 0.0 | 0.0 | 0.0 | 142.1 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 304.3 | 173.9 | 47.7 | 45.2 | 21.2 | 6.4 | 598.7 | 43.5 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-14

## Customer Services Market Forecast, 1992-1997
## Norway

| SERVICE SECTOR | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 304 | 0 | 305 | 306 | 308 | 311 | 315 | 321 | 1 |
| Environmental Services | 174 | 7 | 186 | 97 | 209 | 219 | 230 | 244 | 6 |
| Systems Software Support | 48 | 5 | 50 | 53 | 57 | 62 | 67 | 73 | 8 |
| Education and Training | 45 | 7 | 48 | 51 | 52 | 52 | 55 | 58 | 4 |
| Other Professional Services | 21 | 10 | 23 | 26 | 28 | 30 | 32 | 34 | 7 |
| Business Continuity Services | 6 | 18 | 8 | 9 | 11 | 14 | 17 | 20 | 22 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **599** | **4** | **620** | **640** | **670** | **690** | **720** | **750** | **4** |
| Annual Growth (Percent) | | | 4 | 3 | 5 | 3 | 4 | 4 | |
| ALL OTHER SERVICES | 43 | 8 | 47 | 51 | 55 | 59 | 63 | 67 | 7 |

SOURCE: INPUT

Note: Totals may not add due to rounding.

EXHIBIT C-15

## Customer Services Revenues, 1991 - Finland ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| ICL | 94.9 | 5.1 | 10.1 | 1.9 | 5.1 | 0.2 | 117.3 | 4.1 |
| Digital | 33.0 | 8.0 | 4.1 | 4.1 | 1.9 | 1.0 | 52.0 | 6.5 |
| IBM | 40.0 | 4.1 | 0.0 | 3.4 | 1.9 | 0.2 | 49.6 | 21.0 |
| Unisys | 14.9 | 1.9 | 1.0 | 1.4 | 1.2 | 0.0 | 20.5 | 5.1 |
| Siemens Nixdorf | 15.9 | 1.0 | 1.2 | 0.5 | 0.2 | 0.0 | 18.8 | 1.0 |
| AT&T/NCR | 6.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 8.9 | 1.9 |
| Olivetti | 7.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 7.2 | 0.0 |
| Rank Xerox | 5.1 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 5.5 | 0.0 |
| PrimeService | 2.4 | 1.0 | 1.0 | 0.5 | 0.2 | 0.0 | 5.1 | 0.0 |
| Memorex | 2.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.9 | 0.0 |
| Other System Vendors | 15.2 | 3.1 | 6.5 | 8.0 | 2.9 | 0.5 | 36.1 | 0.0 |
| IMOs (1) | 8.9 | 0.2 | 0.2 | 0.0 | 0.2 | 0.2 | 9.9 | 0.0 |
| VARs (2) | 1.9 | 0.2 | 0.0 | 0.2 | 0.0 | 0.0 | 2.4 | 0.0 |
| ISVs (3) | 2.4 | 0.0 | 4.8 | 1.4 | 0.2 | 5.5 | 14.5 | 0.0 |
| Non-Industry | 0.0 | 104.6 | 0.0 | 0.0 | 0.0 | 0.0 | 104.6 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 251 | 130 | 29 | 23 | 15 | 8 | 455 | 40 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketeers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-16

## Customer Services Market Forecast, 1992-1997
## Finland

| | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 251 | 1 | 253 | 256 | 259 | 262 | 265 | 268 | 1 |
| Environmental Services | 130 | 6 | 137 | 144 | 151 | 159 | 167 | 175 | 5 |
| Systems Software Support | 29 | 8 | 31 | 34 | 37 | 40 | 43 | 47 | 8 |
| Education and Training | 23 | -1 | 23 | 23 | 23 | 23 | 24 | 25 | 2 |
| Other Professional Services | 15 | 11 | 17 | 19 | 21 | 23 | 25 | 28 | 11 |
| Business Continuity Services | 8 | 12 | 9 | 10 | 11 | 13 | 15 | 18 | 16 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **455** | **3** | **470** | **490** | **500** | **520** | **540** | **560** | **4** |
| Annual Growth (Percent) | | | 3 | 4 | 2 | 4 | 4 | 4 | |
| ALL OTHER SERVICES | 40 | 10 | 43 | 50 | 50 | 50 | 50 | 50 | 3 |

SOURCE: INPUT

Note: Totals may not add due to rounding.

EXHIBIT C-17

## Customer Services Revenues, 1991 - Netherlands ($Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Digital | 152.0 | 28.1 | 12.3 | 15.2 | 5.8 | 1.8 | 215.2 | 27.5 |
| Getronics | 84.2 | 32.2 | 35.1 | 2.9 | 45.0 | 9.9 | 209.4 | 19.9 |
| IBM | 164.9 | 15.2 | 0.0 | 15.8 | 8.8 | 1.2 | 205.8 | 91.2 |
| Unisys | 50.3 | 8.2 | 7.0 | 5.8 | 2.9 | 1.2 | 75.4 | 21.1 |
| AT&T/NCR | 38.0 | 5.3 | 1.2 | 5.8 | 4.1 | 0.0 | 54.4 | 11.1 |
| Bull | 29.8 | 2.9 | 4.1 | 2.9 | 1.8 | 0.0 | 41.5 | 14.0 |
| Hewlett-Packard | 29.8 | 1.8 | 1.2 | 2.9 | 1.2 | 1.8 | 38.6 | 0.0 |
| Siemens Nixdorf | 32.2 | 1.8 | 0.0 | 1.8 | 0.0 | 0.6 | 36.3 | 5.8 |
| Olivetti | 28.1 | 0.6 | 0.6 | 0.6 | 0.6 | 0.0 | 30.4 | 0.0 |
| ICL | 21.1 | 1.8 | 2.9 | 1.2 | 0.0 | 0.0 | 26.9 | 7.0 |
| Other System Vendors | 175.4 | 14.0 | 19.9 | 5.8 | 2.3 | 1.2 | 218.7 | 7.0 |
| IMOs (1) | 64.3 | 0.6 | 2.9 | 1.2 | 0.0 | 0.0 | 69.0 | 0.0 |
| VARs (2) | 11.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.0 | 14.0 | 0.0 |
| ISVs (3) | 7.0 | 1.2 | 11.7 | 13.5 | 0.0 | 2.9 | 36.3 | 0.0 |
| Non-Industry | 0.0 | 353.8 | 0.0 | 0.0 | 0.0 | 0.0 | 353.8 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 888.9 | 467.8 | 99.4 | 76.0 | 73.1 | 20.5 | 1,625.7 | 204.7 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketeers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-18

## Customer Services Market Forecast, 1992-1997
## Netherlands

| SERVICE SECTOR | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 889 | 3 | 918 | 946 | 974 | 1,003 | 1,033 | 1,064 | 3 |
| Environmental Services | 468 | 3 | 482 | 502 | 527 | 567 | 624 | 703 | 8 |
| Systems Software Support | 99 | 9 | 108 | 116 | 123 | 129 | 135 | 141 | 5 |
| Education and Training | 76 | 0 | 76 | 76 | 77 | 79 | 83 | 90 | 3 |
| Other Professional Services | 73 | 12 | 82 | 90 | 99 | 107 | 119 | 138 | 11 |
| Business Continuity Services | 20 | 14 | 23 | 27 | 31 | 37 | 45 | 56 | 19 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **1,626** | **4** | **1,690** | **1,760** | **1,830** | **1,920** | **2,040** | **2,190** | **5** |
| Annual Growth (Percent) | | | 4 | 4 | 4 | 5 | 6 | 7 | |
| ALL OTHER SERVICES | 205 | 7 | 219 | 234 | 249 | 265 | 285 | 310 | 7 |

SOURCE: INPUT

Note: Totals may not add due to rounding.

EXHIBIT C-19

## Customer Services Revenues, 1991 - Belgium ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 80.0 | 7.0 | 0.0 | 6.6 | 5.0 | 0.0 | 98.6 | 45.0 |
| Digital | 55.2 | 9.0 | 9.8 | 4.0 | 2.0 | 0.0 | 80.0 | 10.0 |
| Siemens Nixdorf | 45.0 | 3.0 | 0.0 | 2.0 | 0.5 | 0.0 | 50.5 | 9.0 |
| Unisys | 30.0 | 3.0 | 3.0 | 3.0 | 1.0 | 0.0 | 40.0 | 11.2 |
| Bull | 29.0 | 3.0 | 3.0 | 2.0 | 1.0 | 0.0 | 38.0 | 12.0 |
| Olivetti | 32.0 | 0.3 | 2.0 | 1.5 | 2.0 | 0.0 | 37.8 | 0.0 |
| Hewlett-Packard | 22.4 | 1.0 | 2.2 | 2.0 | 1.0 | 2.0 | 30.6 | 0.0 |
| Memorex | 22.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 22.1 | 0.0 |
| AT&T/NCR | 15.0 | 2.0 | 1.0 | 2.0 | 1.0 | 0.0 | 21.0 | 4.0 |
| Wang | 12.6 | 1.2 | 2.0 | 1.4 | 1.0 | 0.0 | 18.2 | 0.0 |
| Other System Vendors | 30.1 | 4.9 | 4.5 | 5.7 | 3.2 | 0.5 | 48.9 | 1.6 |
| IMOs (1) | 54.4 | 0.6 | 0.6 | 0.5 | 0.0 | 0.7 | 56.8 | 0.0 |
| VARs (2) | 9.6 | 0.0 | 0.3 | 0.2 | 0.2 | 0.0 | 10.3 | 0.0 |
| ISVs (3) | 2.4 | 0.2 | 9.3 | 5.2 | 0.3 | 3.2 | 20.6 | 0.0 |
| Non-Industry | 0.0 | 147.2 | 0.0 | 0.0 | 0.0 | 0.0 | 147.2 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 439.9 | 182.3 | 37.7 | 36.1 | 18.2 | 6.4 | 720.7 | 92.8 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketeters

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-20

## Customer Services Market Forecast, 1992-1997
## Belgium

| | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 440 | 5 | 461 | 479 | 496 | 511 | 526 | 542 | 3 |
| Environmental Services | 182 | 5 | 191 | 201 | 211 | 222 | 233 | 245 | 5 |
| Systems Software Support | 38 | 10 | 42 | 46 | 51 | 56 | 62 | 68 | 10 |
| Education and Training | 36 | 1 | 37 | 37 | 38 | 39 | 41 | 44 | 4 |
| Other Professional Services | 18 | 9 | 20 | 22 | 24 | 27 | 30 | 34 | 11 |
| Business Continuity Services | 6 | 5 | 7 | 7 | 8 | 9 | 11 | 14 | 16 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **721** | **5** | **757** | **790** | **830** | **860** | **900** | **950** | **5** |
| Annual Growth (Percent) | | | 5 | 4 | 5 | 4 | 5 | 6 | |
| ALL OTHER SERVICES | 93 | 10 | 102 | 110 | 120 | 130 | 140 | 150 | 8 |

SOURCE: INPUT
Note: Totals may not add due to rounding.

EXHIBIT C-21

## Customer Services Revenues, 1991 - Spain
## ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 145.0 | 18.0 | 0.0 | 13.3 | 7.0 | 0.0 | 183.3 | 80.0 |
| Digital | 72.8 | 12.0 | 14.2 | 4.5 | 3.0 | 0.0 | 106.5 | 13.0 |
| AT&T/NCR | 75.0 | 10.0 | 3.0 | 10.0 | 6.0 | 1.0 | 105.0 | 26.0 |
| Siemens Nixdorf | 65.0 | 4.0 | 0.0 | 6.0 | 2.0 | 0.0 | 77.0 | 10.0 |
| Unisys | 50.0 | 5.0 | 9.0 | 5.0 | 2.0 | 0.5 | 71.5 | 20.0 |
| Hewlett-Packard | 46.8 | 3.0 | 9.2 | 5.0 | 3.0 | 0.0 | 67.0 | 0.0 |
| Olivetti | 60.0 | 2.0 | 2.5 | 0.5 | 0.5 | 0.0 | 65.5 | 0.0 |
| Bull | 30.0 | 1.0 | 4.0 | 2.0 | 1.0 | 0.0 | 38.0 | 10.0 |
| Eltec | 35.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 35.3 | 0.0 |
| PrimeService | 15.0 | 3.0 | 2.5 | 3.0 | 1.5 | 0.0 | 25.0 | 0.0 |
| Other System Vendors | 46.8 | 2.7 | 5.1 | 4.7 | 1.0 | 0.1 | 60.5 | 1.0 |
| IMOs (1) | 83.7 | 0.5 | 0.4 | 0.5 | 0.5 | 0.1 | 85.7 | 0.0 |
| VARs (2) | 12.7 | 0.1 | 0.4 | 0.2 | 0.5 | 0.0 | 13.9 | 0.0 |
| ISVs (3) | 0.0 | 0.0 | 12.0 | 2.6 | 0.0 | 2.5 | 17.0 | 0.0 |
| Non-Industry | 0.0 | 259.9 | 0.0 | 0.0 | 0.0 | 0.0 | 259.9 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 738 | 321 | 62 | 57 | 28 | 4 | 1,211 | 160 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-22

## Customer Services Market Forecast, 1992-1997
## Spain

| SERVICE SECTOR | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 738 | 6 | 782 | 830 | 870 | 910 | 950 | 980 | 5 |
| Environmental Services | 321 | 10 | 353 | 390 | 430 | 470 | 520 | 570 | 10 |
| Systems Software Support | 62 | 13 | 71 | 80 | 90 | 102 | 114 | 127 | 12 |
| Education and Training | 57 | 4 | 60 | 62 | 64 | 66 | 68 | 71 | 4 |
| Other Professional Services | 28 | 20 | 34 | 40 | 46 | 53 | 60 | 67 | 15 |
| Business Continuity Services | 4 | 13 | 5 | 5 | 6 | 8 | 10 | 12 | 21 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **1,211** | **8** | **1,305** | **1,410** | **1,510** | **1,610** | **1,720** | **1,830** | **7** |
| Annual Growth (Percent) | | | 8 | 8 | 7 | 7 | 7 | 6 | |
| ALL OTHER SERVICES | 160 | 13 | 181 | 210 | 250 | 300 | 350 | 400 | 17 |

SOURCE: INPUT

Note: Totals may not add due to rounding.

EXHIBIT C-23

## Customer Services Revenues, 1991 - Switzerland ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Digital | 89 | 21 | 8 | 10 | 5 | 1 | 134 | 17 |
| AT&T/NCR | 95 | 12 | 3 | 15 | 8 | 1 | 133 | 31 |
| IBM | 90 | 6 | 0 | 6 | 4 | 1 | 107 | 46 |
| Unisys | 65 | 5 | 9 | 7 | 1 | 0 | 87 | 24 |
| Siemens Nixdorf | 48 | 4 | 0 | 3 | 1 | 0 | 56 | 9 |
| Hewlett Packard | 20 | 1 | 3 | 1 | 1 | 1 | 26 | 0 |
| Bull | 19 | 1 | 1 | 1 | 0 | 0 | 21 | 6 |
| Olivetti | 18 | 0 | 1 | 0 | 0 | 0 | 19 | 0 |
| PrimeService | 6 | 1 | 1 | 1 | 1 | 0 | 10 | 0 |
| ICL | 7 | 1 | 1 | 0 | 0 | 0 | 8 | 0 |
| Memorex | 8 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| Other System Vendors | 81 | 9 | 19 | 15 | 15 | 1 | 139 | 15 |
| IMOs (1) | 16 | 1 | 1 | 0 | 1 | 1 | 20 | 0 |
| VARs (2) | 8 | 1 | 0 | 0 | 0 | 0 | 9 | 0 |
| ISVs (3) | 0 | 1 | 15 | 7 | 0 | 3 | 26 | 0 |
| Non-Industry | 0 | 311 | 0 | 0 | 0 | 0 | 311 | 0 |
| Vendors (4) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 570 | 374 | 61 | 65 | 36 | 7 | 1,113 | 148 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-24

## Customer Services Market Forecast, 1992-1997
## Switzerland

| | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 570 | 1 | 578 | 580 | 590 | 600 | 610 | 630 | 2 |
| Environmental Services | 374 | 4 | 387 | 400 | 420 | 440 | 460 | 480 | 4 |
| Systems Software Support | 61 | 9 | 66 | 70 | 80 | 90 | 100 | 110 | 11 |
| Education and Training | 65 | -3 | 63 | 63 | 65 | 67 | 70 | 74 | 3 |
| Other Professional Services | 36 | 6 | 38 | 40 | 42 | 44 | 46 | 49 | 5 |
| Business Continuity Services | 7 | 20 | 9 | 10 | 12 | 14 | 17 | 20 | 18 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **1,113** | **2** | **1,141** | **1,160** | **1,210** | **1,260** | **1,300** | **1,360** | **4** |
| Annual Growth (Percent) | | | 2 | 2 | 4 | 4 | 3 | 5 | |
| ALL OTHER SERVICES | 148 | 6 | 157 | 170 | 180 | 190 | 200 | 220 | 7 |

SOURCE: INPUT

Note: Totals may not add due to rounding.

EXHIBIT C-25

## Customer Services Revenues, 1991 - Austria
## ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Digital | 71.5 | 3.6 | 12.7 | 4.0 | 4.2 | 0.1 | 96.0 | 6.4 |
| IBM | 69.4 | 5.0 | 0.0 | 3.6 | 3.0 | 0.2 | 81.2 | 28.0 |
| Siemens Nixdorf | 54.4 | 2.0 | 0.0 | 3.5 | 1.0 | 0.0 | 60.9 | 6.0 |
| Unisys | 10.0 | 1.0 | 1.4 | 1.0 | 0.3 | 0.1 | 13.8 | 3.3 |
| Hewlett-Packard | 10.0 | 0.3 | 1.3 | 1.0 | 0.5 | 0.1 | 13.2 | 0.0 |
| PrimeService | 7.8 | 1.5 | 2.4 | 0.5 | 0.2 | 0.0 | 12.4 | 0.0 |
| AT&T/NCR | 7.0 | 1.0 | 1.0 | 2.0 | 0.0 | 1.0 | 12.0 | 2.0 |
| Rank Xerox | 5.9 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 6.0 | 0.0 |
| Thomainfor | 5.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 5.1 | 0.0 |
| Memorex | 4.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 0.0 |
| Other System Vendors | 24.5 | 4.7 | 8.2 | 4.7 | 0.0 | 0.1 | 42.1 | 1.3 |
| IMOs (1) | 6.2 | 3.3 | 0.5 | 0.2 | 0.0 | 0.0 | 10.1 | 0.0 |
| VARs (2) | 2.8 | 0.5 | 0.2 | 0.1 | 0.0 | 0.0 | 3.6 | 0.0 |
| ISVs (3) | 0.7 | 0.0 | 7.1 | 3.0 | 0.2 | 1.7 | 12.7 | 0.0 |
| Non-Industry | 0.0 | 116.7 | 0.0 | 0.0 | 0.0 | 0.0 | 116.7 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 279.9 | 139.7 | 34.8 | 23.5 | 9.4 | 3.3 | 490.6 | 47.0 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-26

## Customer Services Market Forecast, 1992-1997
## Austria

| | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 280 | 3 | 287 | 290 | 300 | 310 | 310 | 310 | 2 |
| Environmental Services | 140 | 4 | 145 | 150 | 160 | 170 | 180 | 190 | 6 |
| Systems Software Support | 35 | 5 | 37 | 39 | 42 | 45 | 49 | 53 | 8 |
| Education and Training | 24 | -6 | 22 | 22 | 22 | 23 | 24 | 25 | 2 |
| Other Professional Services | 9 | 10 | 10 | 11 | 12 | 13 | 14 | 15 | 8 |
| Business Continuity Services | 3 | 14 | 4 | 4 | 5 | 6 | 8 | 9 | 20 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **490** | **3** | **505** | **520** | **540** | **570** | **585** | **600** | **4** |
| Annual Growth (Percent) | | | 3 | 3 | 4 | 6 | 2 | 3 | |
| ALL OTHER SERVICES | 47 | 14 | 54 | 60 | 60 | 60 | 60 | 60 | 2 |

SOURCE: INPUT

Note: Totals may not add due to rounding.

EXHIBIT C-27

## Customer Services Revenues, 1991 - Greece ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 15.0 | 1.0 | 0.0 | 1.7 | 1.0 | 0.0 | 18.7 | 7.0 |
| Digital | 10.0 | 0.3 | 1.5 | 1.3 | 1.0 | 0.0 | 14.1 | 1.8 |
| Siemens Nixdorf | 5.0 | 1.0 | 0.0 | 0.2 | 0.0 | 0.0 | 6.2 | 1.0 |
| AT&T/NCR | 3.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 4.0 | 1.0 |
| Bull | 2.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 1.0 |
| Hewlett-Packard | 2.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 2.3 | 0.0 |
| Olivetti | 2.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 2.3 | 0.0 |
| PrimeService | 1.0 | 0.2 | 0.3 | 0.4 | 0.1 | 0.0 | 2.0 | 0.0 |
| Unisys | 1.0 | 0.3 | 0.1 | 0.3 | 0.0 | 0.0 | 1.7 | 0.0 |
| Sun Microsystems | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Other System Vendors | 1.1 | 0.0 | 0.1 | 0.3 | 0.0 | 0.0 | 1.6 | 0.0 |
| IMOs (1) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| VARs (2) | 4.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.6 | 0.0 |
| ISVs (3) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 |
| Non-Industry | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 47.5 | 3.9 | 2.2 | 5.5 | 2.2 | 0.0 | 61.4 | 11.8 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-28

## Customer Services Market Forecast, 1992-1997
## Greece

| | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 47 | 5 | 50 | 53 | 56 | 59 | 62 | 65 | 5 |
| Environmental Services | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 |
| Systems Software Support | 2 | 16 | 3 | 3 | 3 | 4 | 5 | 5 | 15 |
| Education and Training | 5 | 8 | 6 | 6 | 7 | 7 | 8 | 8 | 7 |
| Other Professional Services | 2 | 19 | 3 | 3 | 4 | 4 | 5 | 6 | 18 |
| Business Continuity Services | 0 | - | 1 | 1 | 2 | 3 | 4 | 5 | 53 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **61** | **7** | **66** | **71** | **77** | **82** | **88** | **95** | **8** |
| Annual Growth (Percent) | | | 7 | 8 | 8 | 6 | 7 | 8 | |
| ALL OTHER SERVICES | 12 | 15 | 14 | 20 | 30 | 40 | 50 | 70 | 39 |

SOURCE: INPUT

Note: Totals may not add due to rounding.

EXHIBIT C-29

## Customer Services Revenues, 1991 - Ireland
## ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| Digital | 15.8 | 1.8 | 1.8 | 1.8 | 1.8 | 0.0 | 22.8 | 3.5 |
| IBM | 15.8 | 1.8 | 0.0 | 1.8 | 1.8 | 0.0 | 21.1 | 5.3 |
| AT&T/NCR | 3.5 | 0.0 | 0.4 | 1.4 | 0.0 | 0.0 | 5.3 | 1.8 |
| Siemens/Nixdorf | 3.5 | 1.8 | 0.2 | 0.2 | 0.0 | 0.0 | 5.6 | 0.0 |
| Bull | 3.5 | 0.0 | 0.2 | 0.4 | 0.0 | 0.0 | 4.0 | 1.8 |
| Hewlett-Packard | 1.8 | 0.0 | 0.4 | 0.4 | 0.0 | 0.4 | 2.8 | 0.0 |
| ICL | 1.8 | 0.0 | 0.4 | 0.4 | 0.0 | 0.0 | 2.5 | 0.0 |
| Memorex | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 | 0.0 |
| Olivetti | 1.8 | 0.0 | 0.5 | 0.2 | 0.0 | 0.0 | 2.5 | 0.0 |
| PrimeService | 1.8 | 0.2 | 0.4 | 0.2 | 0.0 | 0.0 | 2.5 | 0.0 |
| Rank Xerox | 1.8 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 2.1 | 0.0 |
| Sun Microsystems | 1.8 | 0.2 | 0.4 | 0.2 | 0.0 | 0.0 | 2.5 | 0.0 |
| Other System Vendors | 5.3 | 1.4 | 1.8 | 1.9 | 0.0 | 0.0 | 10.4 | 0.0 |
| IMOs (1) | 8.8 | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 9.3 | 0.0 |
| VARs (2) | 0.9 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 1.1 | 0.0 |
| ISVs (3) | 0.9 | 0.0 | 8.8 | 0.4 | 0.0 | 4.4 | 14.5 | 0.0 |
| Non-Industry | 0.0 | 26.3 | 0.0 | 0.0 | 0.0 | 0.0 | 26.3 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 70.2 | 33.3 | 16.0 | 9.0 | 3.5 | 4.7 | 136.8 | 12.3 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations

(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketeers

(3) ISVs = Independent Software/Services Vendors

(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-30

## Customer Services Market Forecast, 1992-1997
## Ireland

| SERVICE SECTOR | Market Size ($ Millions) 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
|---|---|---|---|---|---|---|---|---|---|
| Hardware Service | 70 | 5 | 74 | 77 | 79 | 81 | 83 | 84 | 3 |
| Environmental Services | 33 | 5 | 35 | 37 | 38 | 39 | 40 | 42 | 4 |
| Systems Software Support | 16 | 10 | 18 | 19 | 21 | 23 | 25 | 28 | 10 |
| Education and Training | 9 | 8 | 10 | 10 | 11 | 11 | 12 | 12 | 4 |
| Other Professional Services | 4 | 10 | 4 | 4 | 5 | 5 | 6 | 6 | 10 |
| Business Continuity Services | 5 | 19 | 6 | 7 | 8 | 10 | 12 | 15 | 21 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **137** | **6** | **150** | **154** | **162** | **169** | **178** | **187** | **5** |
| Annual Growth (Percent) | | | 6 | 6 | 5 | 4 | 5 | 5 | |
| ALL OTHER SERVICES | 12 | 11 | 14 | 15 | 17 | 19 | 21 | 23 | 11 |

SOURCE: INPUT

Note: Totals may not add due to rounding.

EXHIBIT C-31

## Customer Services Revenues, 1991 - Portugal ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 20.0 | 2.0 | 0.0 | 1.7 | 1.0 | 0.0 | 24.7 | 11.0 |
| Digital | 16.0 | 3.0 | 1.7 | 1.0 | 1.0 | 0.0 | 22.7 | 2.8 |
| Siemens Nixdorf | 15.0 | 1.0 | 0.0 | 0.3 | 0.0 | 0.0 | 16.3 | 2.0 |
| AT&T/NCR | 5.0 | 1.0 | 0.0 | 1.0 | 1.0 | 0.0 | 8.0 | 1.0 |
| Olivetti | 5.0 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 5.4 | 0.0 |
| Unisys | 2.0 | 0.5 | 0.2 | 0.3 | 0.1 | 0.0 | 3.1 | 0.5 |
| Bull | 2.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 1.0 |
| Hewlett-Packard | 1.8 | 0.0 | 0.3 | 0.2 | 0.1 | 0.0 | 2.4 | 0.0 |
| Prime-Service | 1.0 | 0.2 | 0.1 | 0.3 | 0.1 | 0.0 | 1.7 | 0.0 |
| Rank Xerox | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 |
| Other System Vendors | 2.5 | 0.8 | 0.7 | 0.9 | 1.0 | 0.0 | 5.9 | 0.2 |
| IMOS (1) | 4.4 | 0.0 | 0.3 | 0.1 | 0.1 | 0.0 | 5.0 | 0.0 |
| VARs (2) | 1.9 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 2.1 | 0.0 |
| ISVs (3) | 0.0 | 0.0 | 8.2 | 0.0 | 0.0 | 3.0 | 11.1 | 0.0 |
| Non-Industry | 0.0 | 18.5 | 0.0 | 0.0 | 0.0 | 0.0 | 18.5 | 0.0 |
| Vendors (4) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TOTAL MARKET | 77.8 | 28.2 | 11.9 | 5.9 | 4.4 | 3.0 | 131.2 | 18.5 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-32

## Customer Services Market Forecast, 1992-1997
## Portugal

| | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 78 | 8 | 84 | 90 | 100 | 110 | 120 | 130 | 9 |
| Environmental Services | 28 | 11 | 31 | 34 | 37 | 39 | 42 | 44 | 7 |
| Systems Software Support | 12 | 16 | 14 | 16 | 18 | 20 | 22 | 24 | 12 |
| Education and Training | 6 | 12 | 7 | 7 | 8 | 9 | 10 | 10 | 9 |
| Other Professional Services | 4 | 17 | 5 | 6 | 7 | 8 | 8 | 9 | 12 |
| Business Continuity Services | 3 | 25 | 4 | 5 | 6 | 7 | 9 | 10 | 22 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **130** | **10** | **145** | **160** | **180** | **190** | **210** | **230** | **10** |
| Annual Growth (Percent) | | | 10 | 11 | 11 | 8 | 11 | 10 | |
| ALL OTHER SERVICES | 19 | 20 | 22 | 27 | 31 | 36 | 41 | 47 | 16 |

SOURCE: INPUT
Note: Totals may not add due to rounding.

EXHIBIT C-33

## Customer Services Revenues, 1991 - Eastern Europe ($ Millions)

| VENDOR | HARDWARE SERVICE | ENVIRON-MENTAL SERVICES | SYSTEM SOFTWARE SUPPORT | EDUCATION AND TRAINING | OTHER PROF'AL SERVICES | BUSINESS CONTIN'TY SERVICES | TOTAL CUSTOMER SERVICES | ALL OTHER SERVICES |
|---|---|---|---|---|---|---|---|---|
| IBM | 30 | 1 | 0 | 1 | 2 | 0 | 34 | 10 |
| Digital | 10 | 8 | 1 | 2 | 2 | 0 | 23 | 3 |
| Siemens Nixdorf | 20 | 1 | 0 | 1 | 0 | 0 | 22 | 1 |
| AT&T/NCR | 4 | 1 | 1 | 1 | 0 | 0 | 7 | 2 |
| ICL | 4 | 1 | 1 | 1 | 0 | 0 | 7 | 1 |
| PrimeService | 2 | 1 | 0 | 0 | 1 | 0 | 4 | 0 |
| Hewlett-Packard | 1 | 1 | 1 | 0 | 0 | 0 | 3 | 0 |
| Unisys | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 |
| Bull | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Olivetti | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| Other System Vendors | 32 | 3 | 7 | 3 | 2 | 0 | 47 | 0 |
| IMOs (1) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| VARs (2) | 52 | 4 | 2 | 1 | 1 | 0 | 60 | 0 |
| ISVs (3) | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Non-Industry Vendors (4) | 0 | 24 | 0 | 0 | 0 | 0 | 24 | 0 |
|  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL MARKET | 160 | 45 | 13 | 12 | 10 | 0 | 240 | 17 |

SOURCE: INPUT

NOTE: (1) IMOs = Independent Maintenance Organisations
(2) VARs = Dealers/Distributors/Value-Added Resellers or Remarketers
(3) ISVs = Independent Software/Services Vendors
(4) Non-Industry Vendors are from the Construction and Building Services sectors

Totals may not add due to rounding.

EXHIBIT C-34

## Customer Services Market Forecast, 1992-1997
## Eastern Europe

| | Market Size ($ Millions) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SERVICE SECTOR | 1991 | ANNUAL GROWTH % 1991-1992 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | CAGR % 1992-1997 |
| Hardware Service | 160 | 3 | 164 | 172 | 185 | 204 | 235 | 294 | 12 |
| Environmental Services | 45 | 2 | 46 | 48 | 53 | 63 | 80 | 108 | 19 |
| Systems Software Support | 13 | 12 | 15 | 16 | 18 | 20 | 22 | 25 | 12 |
| Education and Training | 12 | 17 | 14 | 16 | 19 | 22 | 26 | 30 | 16 |
| Other Professional Services | 10 | 20 | 12 | 14 | 17 | 20 | 24 | 29 | 19 |
| Business Continuity Services | 0 | - | 1 | 2 | 4 | 10 | 20 | 36 | 105 |
| **TOTAL CUSTOMER SERVICES (ROUNDED)** | **240** | **5** | **252** | **270** | **300** | **340** | **410** | **520** | **16** |
| Annual Growth (Percent) | | | 5 | 7 | 11 | 13 | 21 | 27 | |
| ALL OTHER SERVICES | 240 | 18 | 284 | 340 | 410 | 510 | 640 | 800 | 23 |

SOURCE: INPUT

Note: Totals may not add due to rounding.

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# D
# Economic Assumptions

There follow some notes on the methodology INPUT uses in sizing markets, in making forecasts and judging of how reasonable they are.

INPUT reports are based principally on three strands of research activity conducted throughout the year:

- A vendor research programme with more than 300 interviews with prominent software and services vendors across Europe. This research assesses their attributable revenues in each country by delivery made and, where possible by industry sector. INPUT consultants use their own judgement in many cases to categorise revenues into sub-sectors. In particular INPUT excludes revenues considered captive, such as those from a vendor's parent company.

- Several hundred vendor and user interviews across all European market sectors to determine trends and opinions. These interviews are part of the research that INPUT carries out in specific sectors of the software and services market.

- Additionally INPUT maintains an extensive library and database of information relating to the software and services industry. This covers for example INPUT's customer services programme data: results of INPUT's research into the hardware maintenance market which includes its diversification into the software and services market.

All the forecasts from these activities are produced in local currency for each country, then consolidated with common economic and exchange rate data to produce a top-level forecast. This is done for software and services in each country and in Europe as a whole. At each stage it is examined for reasonableness and consistency and if necessary revisited. For example we satisfactorily tested the question: Will predicted user budgets for information systems support the predicted growth rates in software and services?

The forecasts also benefit from assignments for and feedback from INPUT clients, who include over 100 of the leading vendors of software and services around the world.

In order to consolidate INPUT's forecasts and vendor data into a consistent set of European analyses each year, it is essential to use a standard set of economic factors. The following pages show the inflation and exchange rates in use for 1992 studies.

## A
## European Exchange Rates

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

EXHIBIT D-1

### U.S. Dollar and ECU Exchange Rates 1992

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

Source: *Financial Times* 30 December 1991

Exhibit D-2 shows the standard exchange rates used throughout the 1991 programme to consolidate country market data for overall European forecasts and vendor market shares.

EXHIBIT D-2

## U.S. Dollar and ECU Exchange Rates 1991

| Country | Currency | U.S. Dollar Exchange Rate | ECU Exchange Rate |
|---|---|---|---|
| France | FF | 5.65 | 7.74 |
| Germany | DM | 1.68 | 2.30 |
| United Kingdom | £ | 0.515 | 0.704 |
| Italy | Lira | 1,233.0 | 1,689.0 |
| Sweden | Sek | 5.61 | 7.69 |
| Denmark | DK | 6.39 | 8.75 |
| Norway | NK | 6.49 | 8.89 |
| Finland | FM | 3.96 | 5.43 |
| Netherlands | Dfl | 1.69 | 2.32 |
| Belgium | BF | 34.60 | 47.40 |
| Switzerland | SF | 1.27 | 1.74 |
| Austria | Sch | 11.80 | 16.17 |
| Spain | Ptas | 95.0 | 130.12 |
| Portugal | Esc | 132.5 | 182.0 |
| Greece | Dra | 153.4 | 210.7 |
| Ireland | IR£ | 0.51 | 0.771 |
| | $ | 1 | 1.37 |

Source: Barclays Bank (Q4 1990)

B

## European Inflation Rates

Exhibit D-3 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 D-3

### Inflation Assumptions 1991 and 1992

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

Source: OECD Forecasts Q4 1991

Exhibit D-4 shows the inflation assumptions for both the 1990 and 1991 research programmes.

EXHIBIT D-4

## Inflation Assumptions 1990 and 1991

| Country | Assumption 1990-1995 | Assumption 1991-1996 | Change |
|---|---|---|---|
| France | 4.5 | 3.0 | -1.5 |
| Germany | 4 | 2.7 | -1.3 |
| United Kingdom | 7 | 4.8 | -2.2 |
| Italy | 7 | 4.4 | -2.6 |
| Sweden | 7 | 6.3 | -0.7 |
| Denmark | 5 | 2.7 | -2.3 |
| Norway | 5 | 4.9 | -0.1 |
| Finland | 6 | 5.0 | -1.0 |
| Netherlands | 3 | 2.4 | -0.6 |
| Belgium | 4 | 3.3 | -0.7 |
| Switzerland | 5 | 3.3 | -1.7 |
| Austria | 4 | 2.6 | -1.4 |
| Spain | 6.5 | 4.7 | -1.8 |
| Portugal | - | 8.0 | N/A |
| Greece | - | 12.0 | N/A |
| Ireland | - | 3.0 | N/A |
| European Average | 5.5 | 4.0 | -1.5 |

Source: OECD 1991 Forecast, IMF 1989

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