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## MARKET FORECAST

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# European Market Futures

# 1994-1999

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**Software Product Support
Programme – Europe**

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

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# Abstract

The support of software products has historically been viewed as a proprietary function reserved for the original product developer. The rise of mass PC markets, and the shift to client/server computing and an *open* systems environment have served to drive software product support opportunities into becoming more *open* and available.

This report examines the emergence of this *open* software product support market in Europe.

The report discusses the forces shaping this new market opportunity, and the current responses to it by different types of vendor. Factors considered essential for success are also discussed.

The report describes possible ways of segmenting the market and provides market forecasts for the period through to 1999 for Europe as a whole and for the individual countries of France, Germany, the United Kingdom and Italy.

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*Software Product Support —
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# Exhibits

I

# Introduction

This report was produced as part of INPUT's Software Product Support Programme in Europe.

## A
## Purpose

A large element of the computer services market is being reshaped by the widespread adoption of new software product technology and applications. The popularity of client/server computing and open systems software products is creating an environment of change in the software product after-market.

This report sets out to identify the main drivers and inhibitors for the software product support market at work in Europe. It quantifies the changes forecast for the software product support market and analyses the competitive threat posed by the PC software vendors as they move into the server market to challenge traditional datacentre software vendors.

Vendors from many sectors of the information services industry are now challenging for business in the *open services* market, within which software product support is expected to be a key requirement for success.

## B
## Scope

INPUT defines the Software Product Support sector as software advice, guidance and maintenance activities that relate to both systems software products and applications software products. Included are associated support activities such as telephone support, problem analysis and software diagnostics. Exhibit I-1 illustrates INPUT's definition of the software products market.

Exhibit I-1

# Software Products Market Segmentation

Customer Services
Systems Software Support

**Software**

**Systems Software**

**Applications Software**

**Cross-Industry**

**Industry-Specific**

- Insurance
- Medical
- Process
  Manufacturing
- Retail
- Services
- State and Local
  Government
- Telecommunications
- Transportation
- Utilities

**Systems Control**

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

**Data Center Management**

- Capacity Management
- Computer Scheduling
- Datacentre Management
- Downtime/Repair Monitoring Management
- Job Accounting
- Performance Monitors
- Tape Management
- Utilities

**Applications Development**

**Program Development and Production Tools**

- Application Generators
- Assemblers
- Automatic Documentation
- Compilers
- Debugging Aids
- Languages
- Systems Development Control
- Retrieval Systems
- Translators

**Data Base Management Systems**

- Data Base Management Systems
- Data Dictionaries
- Other

**CASE Systems**

**Accounting**

- Accounts Payable
- Accounts Receivable
- Fixed Assets
- General Ledger
- Purchasing

**Human Resources**

- Benefits
- Payroll
- Personnel
- Compilers
- Training and Education

**Planning and Analysis**

- Budgeting
- Financial Planning
- Forecasting
- Compilers
- Modelling
- Integrated Analysis Systems
- Spreadsheet Systems
- Graphics
- Other

**Engineering and Scientific**

- Structural
- Chemical
- Electrical
- Mechanical
- Piping
- Project Control
- Nuclear
- Statistics/Operations Research

**Education and Training**

- Computer-Assisted Instruction
- Authoring Languages
- Video Instruction
- Live Instruction
- Other

**Other Cross-Industry**

- Administrative Services
- Corporate Services
- Sales, Marketing and Distribution
- Word Processing
- Other

*Source: INPUT*

Exhibit I-2 shows the structural segmentation of the software and services industry used by INPUT in analysing the European and world-wide markets.

In each service sector, the definition of user expenditure includes only those services provided to users by an external organisation on a chargeable basis. Services provided by subsidiaries or internal resources are excluded from the open market.

For complete coverage of the entire software and services opportunity see the INPUT report *Software and Services Market Analysis and Forecast — Europe, 1994-1999.*

Exhibit I-2

**Information Services Market Segmentation**
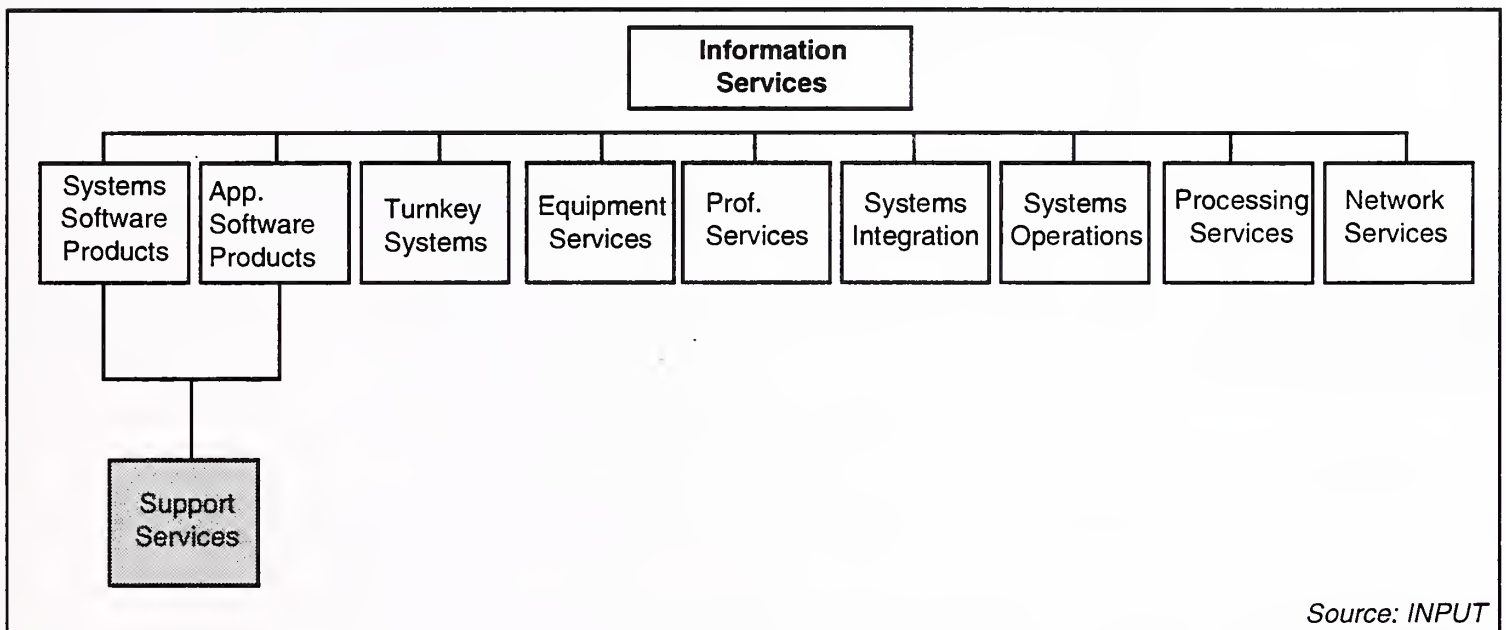


Source: INPUT

# C
# Methodology

This report builds on the material published in a previous INPUT report *European Software Product Support – New Open Market Opportunities*, the user research for which was based on one hundred interviews conducted by telephone in Germany, France and the United Kingdom earlier in 1994.

Respondents were selected to be a random sample of managers responsible for systems software products operating on mid-range computers and substantial network-based PC installations.

The vendor data was obtained from direct communication (both telephone and face-to-face interviews) with 20 major software vendors operating within the European IT industry. This was in addition to INPUT's annual revenue mix survey of leading services vendors in Europe.

Additional desk research was conducted to support modelling of the possible developing market scenarios for software product support.

# D
# Report Structure

The remaining chapters of this report are organised as follows:

Chapter II is an executive overview that summarises the major issues and conclusions of the report and INPUT's recommendations.

Chapter III analyses current trends in the European Software Support Market, discusses how different categories of vendor are reacting to market conditions, and offers some recommendations on how vendors should plan for success.

Chapter IV summarises INPUT's estimates of growth in the software product support market over the period from 1994 to 1999, broken down by hardware platform. Various alternative ways of segmenting the market are discussed, with some market analysis being given for each possible segmentation.

Appendix A contains details of INPUT's estimates of growth in the software product and software support markets over the period from 1994 to 1999, broken down by territory, product category and hardware platform.

Territories analysed are:

- Europe
- France
- Germany
- U.K.
- Italy
- Rest of Europe

Product categories are:

- System software
- Applications software

Hardware platforms are:

- Mainframe
- Minicomputer/Server
- Desktop

For each level of analysis, breakdowns are shown of:

- Software product revenues
- Software support revenues
- Software support revenues as a percentage of software product revenues.

Appendix B contains rankings of leading European software support providers, showing their estimated revenues and market share in various categories.

Appendix C details economic assumptions.

# E
# Related INPUT Research Material

Recent INPUT reports which address topics related to the subjects discussed here include the following:

*Software and Services Market Analysis and Forecast — Europe, 1993-1998 (December 1993)*

*US Systems Software Market — 1993-1998 (October 1993)*

*Database Migration  (May 1993)*

*User Issues and Trends in European Customer Services (February 1993)*

*User Satisfaction in Europe — Mid-range Systems (March 1993)*

*Open Systems Services Challenges and Strategies — Europe (March 1993)*

*European Software Product Support — New Open Market Opportunities (May 1994).*

# II
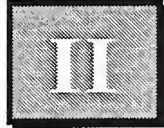
# Executive Overview

## A
## Software Product Support – An *Open* Opportunity

The software products market has grown rapidly over the last fifteen years and has consequently become a key focus of attention for many vendors.

As with hardware, before the advent of *open systems*, most vendors viewed the support of software products as a proprietary function and consequently failed to view it as a market opportunity in its own right.

It now needs to be recognised that software product support is emerging as a clearly identifiable market with *open* characteristics. Exhibit II-1 indicates graphically how software product support is following other markets in the trend towards *openness*.

In order to maximise the *open* software product support opportunity, vendors need to:

- Understand the forces shaping software product support needs

- Appreciate the growth potential of the software product support market, and identify appropriate market segments for targeting

- Develop the necessary product support infrastructure and skills to ensure success.

Exhibit II-1

## Open  Market  Trends  Reach  Software  Product  Support



Source: INPUT
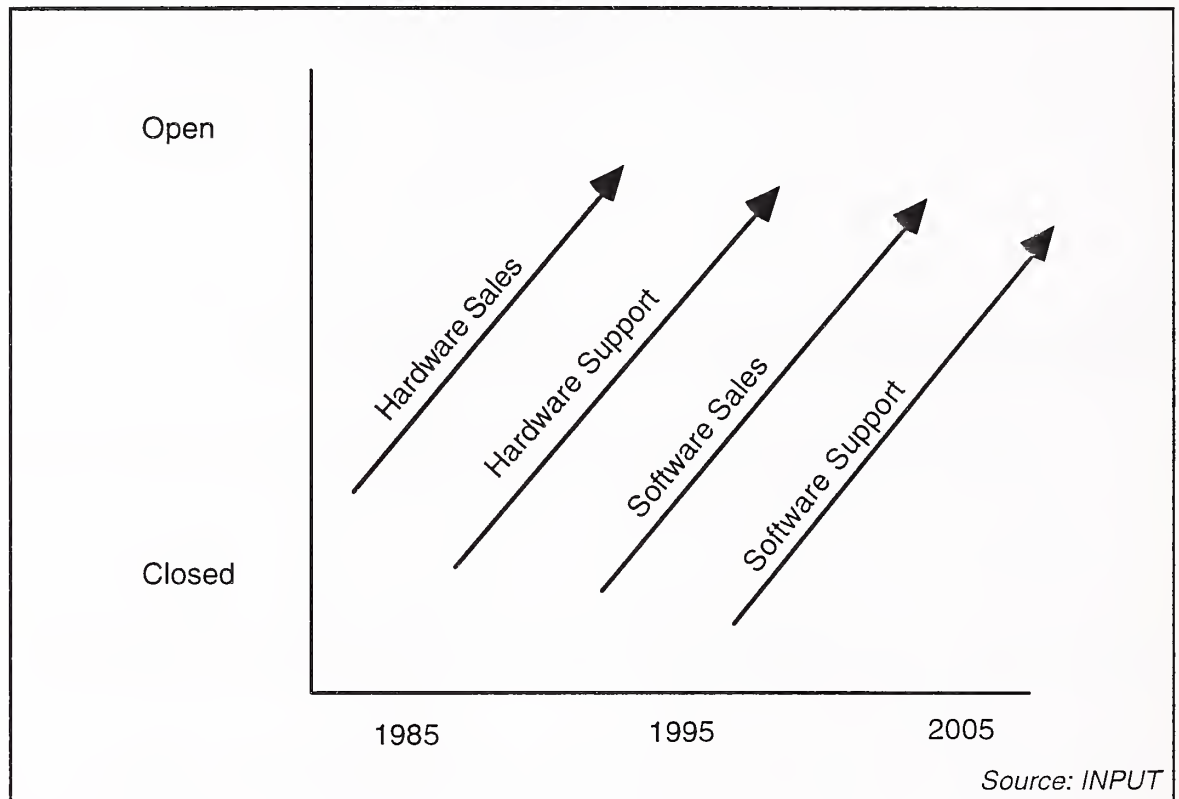
## B
## Current Driving Forces

1.      Two Forces Drive Support Market

a.      **Competition Increases Focus on Customer Needs and Intensifies Struggle for Revenue and Profit**

The software product market has changed from being almost exclusively technology-driven to one in which customer demand and customer acceptance play an increasingly important role.

Suppliers must realise that customer retention will play an increasingly strategic role in an intensely competitive marketplace.

An inevitable result of increasing marketplace competition has been a downward pressure on product pricing, and software suppliers have been forced to look elsewhere to replace lost revenue and/or profit streams.

As did the hardware vendors before them, when faced with a similar situation, software product suppliers turned to services for solace when product margins became threatened.

**b.     Complexity of Technology Forces Structural Change in Support Marketplace**

Exhibit II-2 shows how the alignment of the software product support marketplace has changed from vertical to horizontal.

Exhibit II-2

## Changes in Alignment of Software Product Support
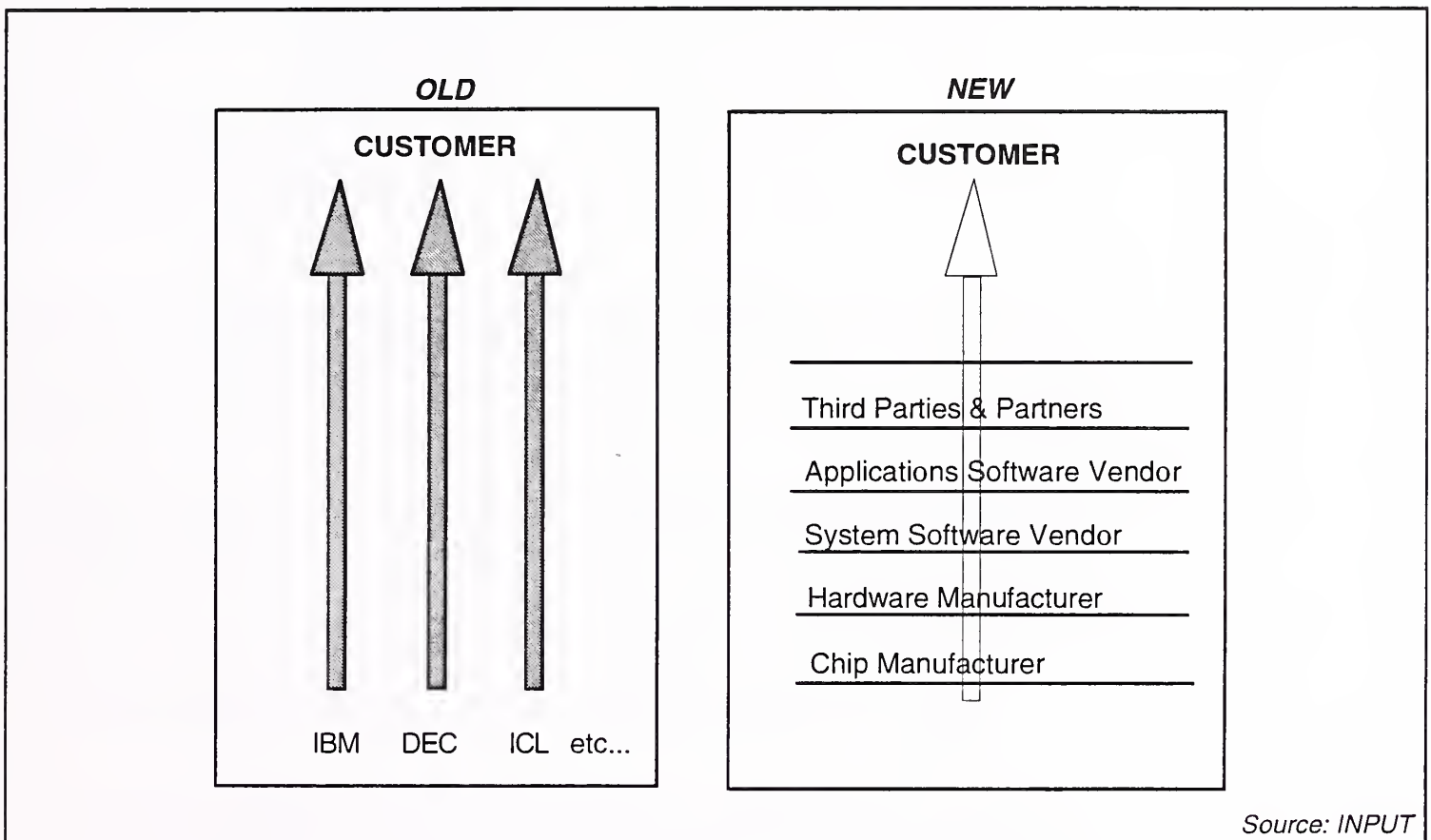


In the past, there was a simple relationship between the monolithic vendor and the customer. Now, the customer's system consists of elements from a multiplicity of sources, each element potentially requiring support from a different source.

The new alignment has a tendency to increase the cost of support to the customer, and to increase the customer's frustration as he or she has to deal with a complex chain of contacts in order to resolve what seem like simple problems.

### 2.     Three Groups of Vendor are Active in the Support Marketplace

Hardware equipment vendors, software product vendors and professional services companies are the three main groups of players active, to a greater or lesser extent, in the marketplace for software product support services.

But they are there for different reasons and are approaching a common market opportunity from a different historical perspective, with, in the main, different ambitions, and with different levels of commitment.

### 3.     Equipment Vendors Seek to Protect Revenue Streams by Penetrating Client/Server Support Market

The equipment vendors see the market as a golden opportunity to further their ambitions to provide multivendor support at the enterprise level and preserve revenue streams long considered captive and theirs by right.

Long-accustomed to between 15% and 30% of licence revenues following on annually in support charges, hardware suppliers have seen the writing on the wall for the datacentre, the source of a large part of these revenues.

They are now seeking not merely to protect this source of income, but to use the provision of software support services as a strategic tool with which to penetrate the burgeoning corporate client/server, multivendor environment.

### 4.     Software Product Vendors Need to Maintain Customer Loyalty

Software product vendors in their turn have seen a gradual erosion of product licence revenues and, with increasingly standardised products available from multiple sources, a growing ability and tendency for the customer to migrate.

Some have recently, therefore, come to regard the support market as an opportunity to regain lost revenue streams and to maintain customer loyalty by increasing lock-in, rather than merely as a necessary evil.  The last 12 months have seen a flurry of announcements, introducing new software support programmes (and associated pricing).

There is evidence, however, that many vendors still do not see software support as a market opportunity in its own right, with fewer than half the respondents in recent U.S. and European industry surveys treating it as a profit centre.

### 5.    Professional Services Vendors have yet to Appreciate Full Potential of the Software Support Market

To third party vendors, such as professional services companies, the market may be viewed as an after-market services opportunity following a solutions-sell, i.e. as a value-added "add-on".  However, there is as yet relatively little evidence that these companies have recognised the sector as a market opportunity, entrenched as many of them are in a custom development mentality.

Logically, given the increasing trend towards software standardisation and the increasing unwillingness of customers to pay enormous sums and wait considerable periods for custom developments, professional services vendors should not overlook software product support (as well as the related area of operational software support) as a potential opportunity.

### 6.    Three Major Vendor Categories

It may be seen then that vendors fall into three broad categories in their general attitude towards the software support market opportunity :

- Those who have entered the market as a positive opportunity

- Those who see the market as a means to defend position

- Those who have not yet actively considered the market as an opportunity.

Vendors who fall into the latter two categories may not be aware of the full potential of the software support market.

## C
## Growth of the Software Product Support Market

### 1. Support Market Grows Following Increasing Adoption of Packaged and *Open* Solutions

Users no longer rely so heavily on custom development of software, preferring in more and more cases to use packaged software products to meet their needs. This trend has prevailed for many years in the field of system software, and is now exerting a massive influence on applications software.

Effective support is of vital importance to users who rely on software packages, and the support market is expected to expand as user needs grow.

The advent of client/server technologies has further enhanced the potential of the software support market. Not only are solutions more complex in terms of mixed platforms and networking, but the adoption of new technologies outside the large datacentre and within user departments has meant that more intensive user support is needed. Exhibit II-3 shows INPUT's estimates of growth in the overall software product market, and in the support sector of that market.

Software support is expected to grow at a faster rate than the software product market of which it is a part.

Exhibit II-3

### Growth in Software Product and Software Product Support Markets, 1994 to 1999



Software Product CAGR: 7%

Software Support CAGR: 9%

Source: INPUT
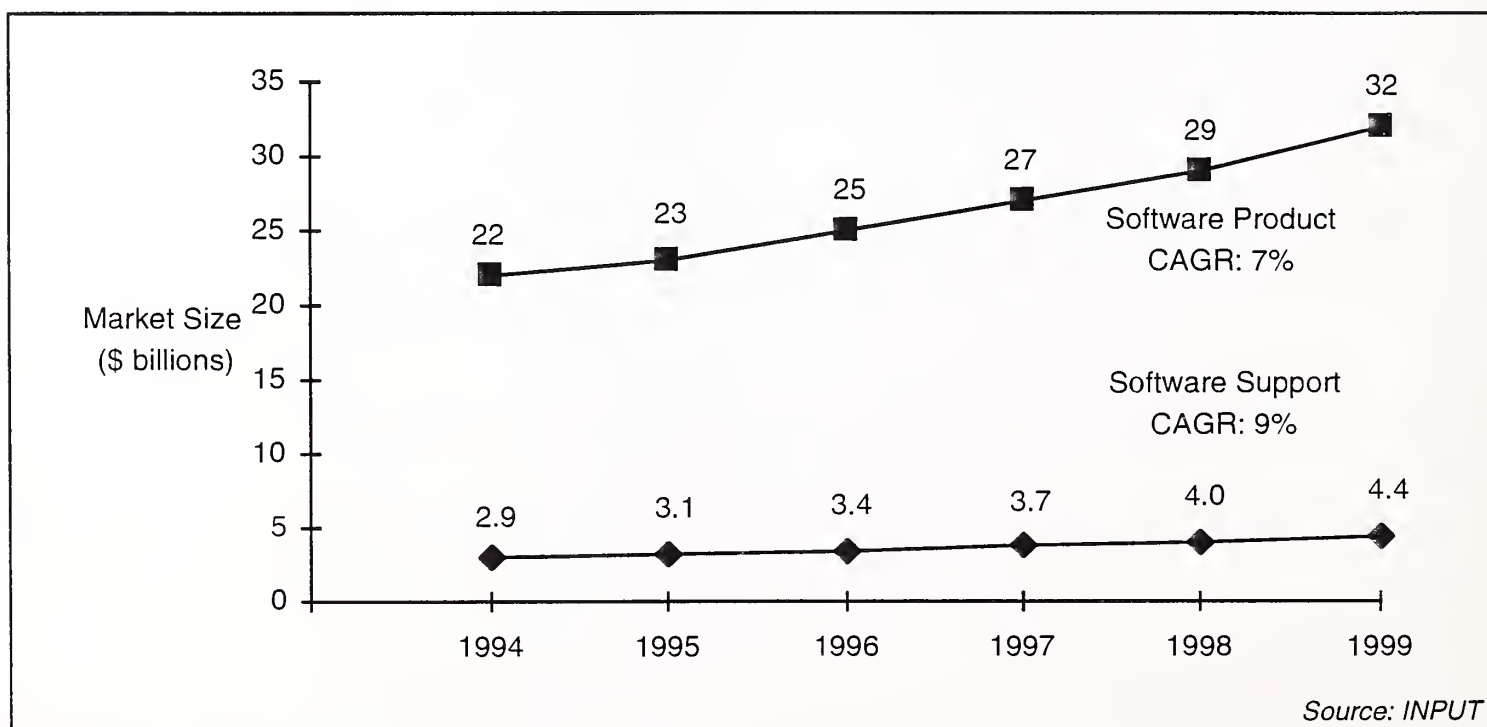
### 2.    Vendors Must Carefully Target Market Segments

Exhibit II-2 shows a steady growth in software product support revenues. Vendors should note that within this overall growth certain segments of the market offer more potential than others.  By looking at various market segmentation scenarios, vendors can identify the areas of maximum opportunity.

One simple way of breaking down the software support market is by type of application:

- System software

- Applications software.

Exhibit II-4 contrasts the growth in these two areas.

Exhibit II-4

## Software  Product  Support  Market,  Europe  1994-1999:
## Application  Categories



Source: INPUT
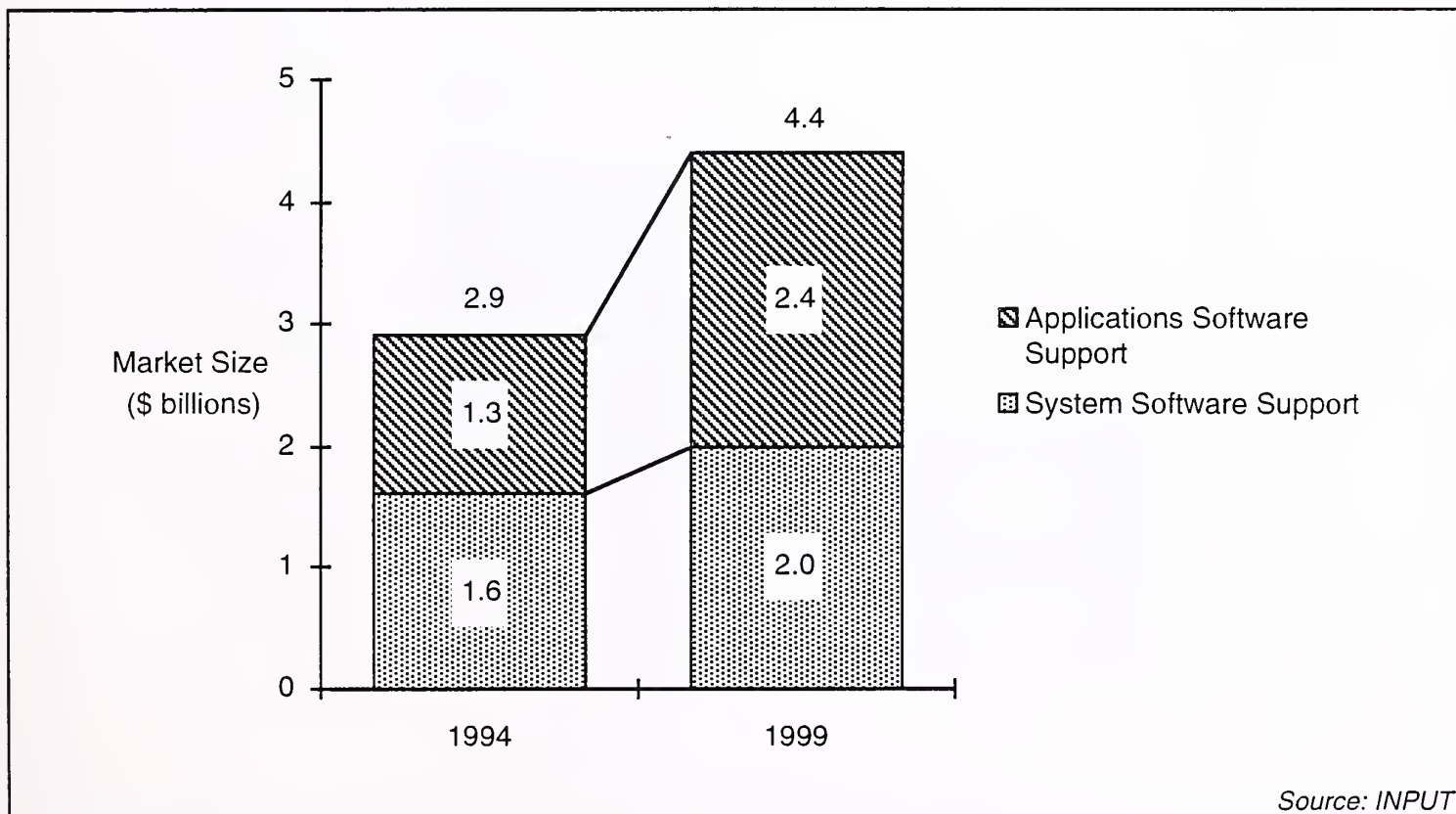
Clearly, applications software product support is expected to grow at a much faster rate than support of system software products - the former will be at least as dominant in 1999 as the latter was in 1994.

Another key way of looking at the software support market is by hardware platform:

- Mainframe

- Minicomputer

- PC/Workstation.

Exhibit II-5 contrasts the growth in these areas.

Exhibit II-5

## Software Product Support Market, Europe 1994-1999: Hardware Platforms



Market Size ($ billions)

5
4.4
4
0.9
2.9
CAGR
3
-4%
1.1
2.0
CAGR
2
10%
1.2
1.5
1
CAGR
22%
0.6
0

1994          1999

Mainframe
Minicomputer
PC/Workstation

Source: INPUT
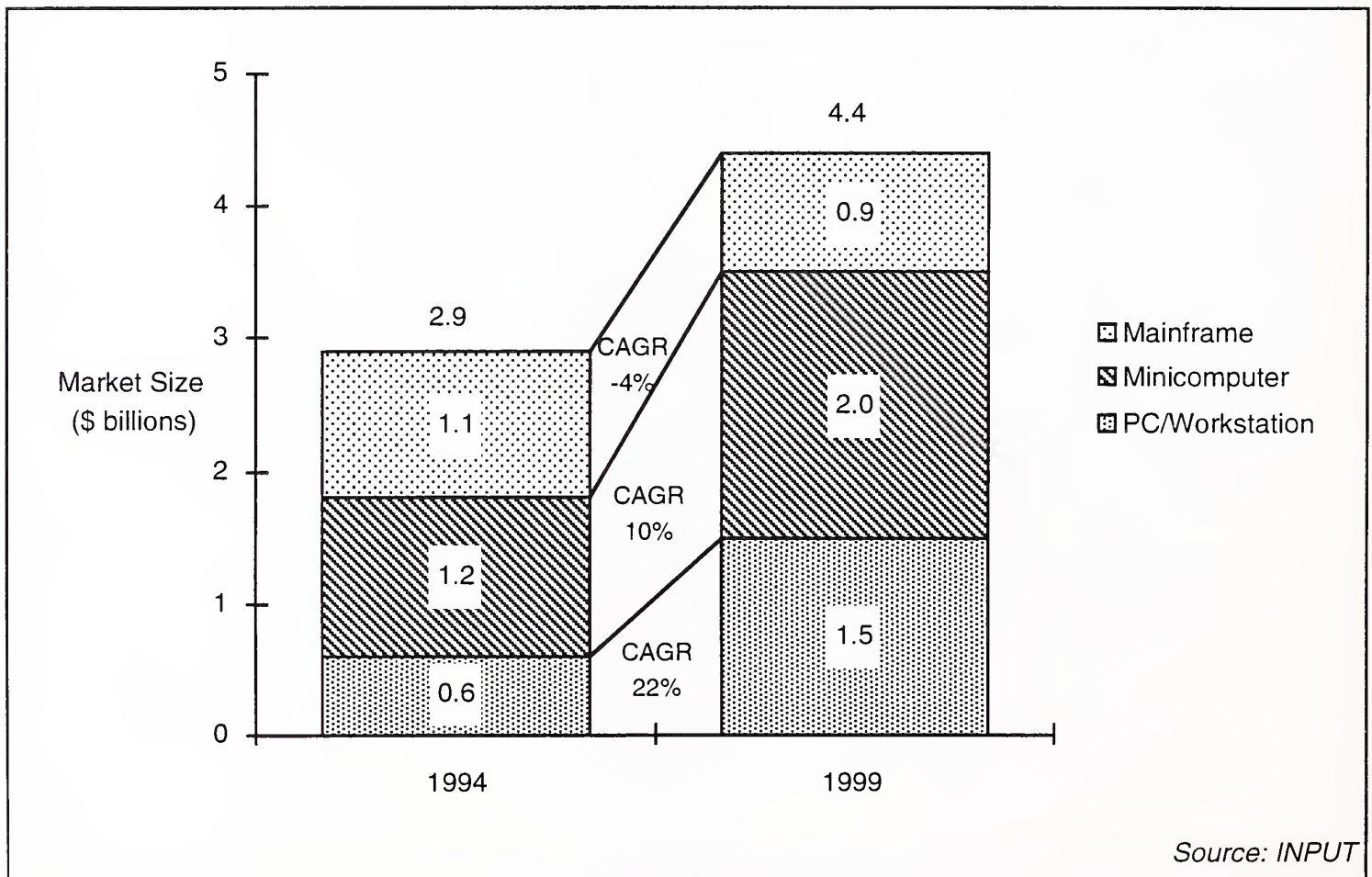
The continuing decline of the mainframe suggests that the minicomputer and workstation environments where client/server applications flourish is going to be the most fruitful area for software product support revenues.

Other ways of segmenting the software support market should be carefully considered by vendors who wish to identify markets worth tackling.  INPUT has observed the following methods of segmentation to be of interest:

- Application sub-categories

    * System software

    – Systems control

    – Operations management

    – Applications development

    * Applications software

    – Cross-industry

    – Industry-specific

- Geography - country and region

- Operating system

    * Proprietary

    * UNIX and derivatives

    * DOS

    * DOS/Windows

    * OS/2

- Supplier channel

    * Hardware vendors

    * Software vendors/ISVs

    * 3rd party vendors (including professional services companies).

# D
# Four Critical Success Factors

Irrespective of their reasons for wishing to offer software support services, vendors who wish to succeed within the support arena should bear in mind the four issues listed in Exhibit II-6.

Recent INPUT user research, primarily in the datacentre environment, in which users have been accustomed to paying for software product support, has indicated a significant level of dissatisfaction with the support currently offered by many vendors, with users perceiving a lack of value for money in these support services.

Exhibit II-6

## Key Success Factors for Software Support Vendors

- Support the User, Not the Product

- Recognise that Users' Support Requirements Differ

- Relate Support Offerings to the Client/Server Arena

- Apply Technology (e.g. Bulletin Boards)

*Source: INPUT*

At the desktop, users have only in the last 18 months been asked to pay for what had hitherto been a "free" service. It may reasonably be anticipated that these users will have high expectations of service levels once they are specifically paying for them and it remains to be seen what initial reactions are.

A key critical success factor is therefore to provide perceived value for money. Research suggests that one way that this can be achieved is by recognising that it is the user who needs support, not the product. This implies the provision of tailored rather than standardised services; expert, technically-orientated users require a totally different level of support from non-technical, novice operators. Support services need to be segmented in order to cater for this spectrum of requirements.

Users' needs for single source support must also be recognised. Vendors who support the whole of a user's environment, rather than just those items of software which the user has purchased from them, are more likely to be appreciated than those vendors who refuse to answer questions outside a strictly defined domain. SAP, a major European applications products vendor, is a model in this respect, with helpdesk staff who specialise in databases and operating systems as well as SAP's own products.

Competition will be fierce as vendors vie for control of the corporate, client/server environment, which is destined to become a key future battleground. A strong foothold in user support at the desktop now could stand suppliers in good stead in the long-term struggle.

Key to success will be the provision of support services in an efficient and cost-effective manner. Networks are likely to play an increasing role in this respect, with on-line bulletin boards providing information and assistance in a consistent, permanently available and non-labour-intensive fashion.

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# III
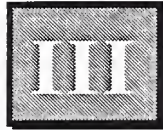
# The Emergence of an Open Software Product Support Market

## A
## Customers, Suppliers and Technology Shape Software Product Support Needs

Information Technology (IT) markets have historically been overwhelmingly technology-driven, but recent years have seen the erosion of the dominant influence of technology by other, more business-related factors.

Trends in computer-related markets have more recently been broadly divided into two categories, those driven by customer business considerations (i.e. demand-driven) and those attributable to technology (i.e. technology- or product-driven).

To these two forces, however, a third must be added, that of supplier-interests.

These three forces are exerting influence on the developing market for software support.

The direction the market will ultimately take and the emergent trends will be a function of the interplay between the three sets of forces, represented by the business imperatives of the customer, the development of technology and the interests of the suppliers.

### 1.     Business Drivers

Some of the key factors originating from customers' business needs are summarised below:

- Increase in customer IT expertise and sophistication and, consequently, in the level of expectation of products and services

- Growing customer realisation that, although IT is a strategic enabler, it is not in itself strategic

- Increasing trend for organisations to concentrate on their core business

- Growing importance of industry-specific and cross-industry niche markets

- Imperative to reduce costs in an increasingly deflationary environment

- Downsizing of IT facilities

- Need for fast, cost-effective standard solutions as opposed to slow and costly custom developments

- Need for user-friendly interfaces which reduce training time, improve ease of use and productivity and minimise support requirements

- Increasing devolution of decision-making and answerability to business unit level from the corporate level

- Growth in influence of the end-user compared with the IS department.


### 2. Technology Change Drivers

The continuing rapid advance of technology has radically altered the nature and structure of the IT industry.

The most fundamental change in industry structure has been the move to an open horizontal model from a proprietary vertically integrated one.

This shift, which was first manifested most clearly in the PC industry, is now increasingly important within the software products sector.  Just as hardware products have shifted to an open model, so have support services.

In the 1980s the *open* hardware support business (third party maintenance) blossomed under the high margin price umbrella of proprietary systems.

Today, IT vendors are facing the increasing challenge of an *open* software support environment.

Other important technology change drivers can be summarised as:

- The growing "commoditisation" of IT products, both software and hardware

- Ever-improving PC/workstation price/performance ratio

- An accelerating trend towards client/server computing and distributed processing

- An increasing demand for networked solutions and interoperability

- The growing range, complexity and sophistication of the products themselves and, consequently, of the related support requirements.

### 3. Supply Side Market Factors

Vendors are experiencing increasingly difficult competitive conditions as the industry shifts to the open model.

Just as hardware vendors have encountered increasing pressure on hardware support (maintenance) margins, so software product vendors are now beginning to experience change in accepted levels of software support charges.

Historically, software product vendors have been used to charging support fees in the range of 15 to 25% of the annual product licence fee. (This originated in the support model of 1% per month of the license fee but applied at a time when high unit prices for software products were covered by high unit prices for hardware.)

Exhibit III-2 summarises the dramatic change that has occurred in the software product industry driven by low-cost open systems.

Under these changed and increasingly competitive conditions, software product vendors are experiencing:

- Falling software product prices

- Escalating development costs

- Declining profit margins

- Substantial apparent revenue losses due to software piracy

- Market consolidation, with large vendors like Microsoft and Computer Associates dominating the market.

Exhibit III-1

## Changes in Software Product Characteristics

| Attribute | Old | New |
|-----------|-----|-----|
| Features | Fixed | Constantly adding |
| Updates | Infrequent | Frequent |
| Sales | Field | Direct/Indirect |
| Cost of sales bias | Labour | Advertising |
| Price | $10,000 + | $100 + |
| Customers | 100s | 100,000s |

*Source: INPUT*

## B

## Vendors Respond in Different Ways to the Software Product Support Opportunity

Against this background of market-shaping forces, hardware vendors, software vendors and professional services companies have, in the main, reacted differently to the software support market opportunity and are competing from totally different positions.

For the equipment vendors, the market is seen as a golden opportunity to further their ambitions to provide multivendor support at the enterprise level and preserve revenue streams long considered captive and theirs by right.

Software product vendors have seen product licence revenues gradually eroded and, with increasingly standardised products available from multiple sources, a growing ability and tendency for the customer to migrate. They have recently, therefore, come to regard the support market as an opportunity to regain lost revenue streams and to maintain customer loyalty by increasing lock-in, rather than merely as a necessary evil.

To third party vendors, such as professional services companies, the market may be viewed as an after-market services opportunity following a solutions-sell, i.e. as a value-added "add-on".

## 1. Equipment Vendor Approaches

Hardware vendors, in particular the traditional mainframe/mini suppliers, have long enjoyed a captive support after-market. Support revenues have ranged from 15 to 30% of licence revenues following on annually in support charges. It has been IBM's practice not to charge separately for support services as such, but to bundle them into the recurring licence fee.

The question for these vendors, in the face of the accelerating decline of the datacentre, is how these revenues streams can be maintained, and, from a strategic perspective, how their traditionally powerful corporate account position can be protected and extended enterprise-wide to encompass the burgeoning client/server, multivendor environment.

Arguably they are in a better position to achieve this than software product vendors and professional services vendors. Despite recent difficulties they still maintain a strong position in large enterprise IS departments and still have credibility at Board level in many organisations.

However, to leverage this in-built advantage, one key development would have to take place, the rebirth of the in-house IS organisation as the enterprise-wide custodian of distributed IT. Although each has been weakened significantly in recent years, hardware vendors and the IS department could together reassert their respective positions in the enterprise.

## 2. Software Product Vendor Approaches

The independent software vendors (ISVs) appear to be divided over the support opportunity. Except at the more specialised, datacentre end of the market, support has in the past been largely viewed by the ISV as a necessary evil, something which, if costed at all, was regarded as bundled into the original price of the software licence and therefore provided free of charge to the user. The last 12 months have seen the end of this honeymoon period for the customer, with a flurry of announcements introducing charges for software support services. This move has been motivated by reduced growth in the software product market and declining margins as competition has increased and prices have fallen.

Recent research amongst both US and European ISVs suggests that over half of the software vendors are still not treating software support as a *profit centre*, evidence, perhaps, that it is not yet regarded as a strategic opportunity in its own right, but more as an opportunity to recoup lost revenues.

There have even been suggestions that some ISVs see software support as simply a costly, non-productive activity, one which ultimately detracts from development activities and one of which they would therefore like to be rid.  It is easy to understand such cynicism when one considers the following factors:

- The relatively high (for a hitherto "free" resource) premium being requested for support for many products

- The lack of any perceived ramp-up in responsiveness and quality of service, i.e. any value added

- The increasingly common delegation/relegation of the support role to third parties, such as hardware/system OEMs, distributors, dealers etc., themselves usually operating on much lower margins than the ISV.

### 3.  Professional Services Vendor Approaches

Professional services vendors in this arena do not yet, by and large, seem to have recognised the software product support area *as* a marketplace. This is doubtless because software products have traditionally represented a negligible portion of their portfolios, their prime offering being based on custom development activity.

However, this may prove to be a dangerous oversight in the face of strong indications that the future of the software market lies firmly in popular, standardised, modularised software products rather than in unwieldy and increasingly expensive custom-built systems.

Many professional service organisations seem to be stuck firmly in the development rut.  Logically, however, for such players support could represent a significant opportunity.

Indeed, they should not overlook the related area of operational software support, i.e. the maintenance and support of the wealth of the so-called "legacy" applications on which most medium and large organisations have come to rely and will continue to rely for many years to come.

## C
# Critical Success Factors — Requirements for Success

It has been suggested in the previous section that vendors fall into three broad categories in their general attitude towards the software support market opportunity:

- those who have entered the market as a positive opportunity

- those who see the market as a means to defend position

- those who have not yet actively considered the market as an opportunity

Clearly, it is necessary for the software product support opportunity to be identified as a distinct market before it can be properly targeted and exploited.

However, even when it has been recognised as an opportunity, there are further critical factors which must be taken into account for success to be achieved and sustained. These are summarised in Exhibit III-2 below.

Exhibit III-2

### Critical Success Factors — Software Support Market

- recognise widespread user dissatisfaction with support
- recognise importance of demonstrating value for money
- recognise importance of demonstrating **benefits**
- recognise that it is the **user** who needs support, not the **product**
- recognise that not all users have the *same* support requirements
- recognise implications of trend towards multivendor / open systems environments — key battleground will be the server area
- compete actively — do not let share be taken by third parties
- compete innovatively — marketing is key
- apply technology to improve efficiency and effectiveness
- improve support delivery mechanisms and productivity to counter price erosion created by open competition

*Source: INPUT*

### 1.    Vendors Must Address Customer Satisfaction Issues

User research carried out by INPUT in late 1993/early 1994 (detailed in the INPUT report *European Software Product Support — New Open Market Opportunities — May 1994*) highlighted a significant level of dissatisfaction with software support, users believing it not to offer value for money.  When these ranks of users who have been accustomed to paying for software support (primarily in the datacentre environment) are swelled by their PC software user counterparts who have only this year been asked to pay for what has hitherto been "free", these levels of dissatisfaction are likely to increase — unless support operators take steps to ensure that value-for-money is seen to be provided so that the benefits of the support are apparent to the user.

A further area of dissatisfaction noted was the lack of differentiation available within a given support service.  The type and depth of support required by a novice, non-technical user differs dramatically from that required by an expert, technically-orientated operator. However, in the case of most service providers until very recently, the choice has been "plain vanilla".  By and large, suppliers have failed to realise that it is the user who needs the support service, not the product.  Products may have become more standardised — users have not and never will!  Support services therefore need to be tailored with this in mind.

### 2.    Hardware Suppliers and Small Vendors will bring Added Competition to the Marketplace

Competition is likely to become fierce.  Two groups of vendors who have already earmarked the support market as an opportunity to enter or strengthen their position in the multivendor marketplace in general are the equipment/hardware suppliers and, at the opposite end of the scale, small local, entrepreneurial vendors.

Almost all large software product companies became extremely active in 1994, introducing or overhauling their service offerings, in most cases by introducing pricing.  It is no secret that these companies have their sights strongly set on the corporate server market — a strong foothold in user support at the desktop could stand them in good stead as the market moves towards the client/server environment.

The least active have been the professional service/software and services houses, who, one suspects, have not yet properly considered the opportunity.

### 3.    Marketing and Cost Containment are the Keys to Success

The keys to successful competition will be, on the one hand, effective marketing of support services and, on the other, the provision of those services in an efficient and cost-effective manner.

Customers are largely sceptical; therefore marketing will need to be innovative and persuasive.

Support is potentially labour-intensive and costly, and so mechanisms must be developed by which costs can be reduced whilst increasing productivity.

It would seem logical that networks must come to play a growing role in the distribution of the support product. Bulletin board systems and on-line services such as CompuServe have already begun to demonstrate that these can be effective (and cost-effective) dissemination methods — the only current drawback is the relatively low penetration of such communications-based services on to the average user desktop.

Blank
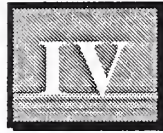
# Software Product Support Market Analysis

## A
## The Software Product Support Market

Software products, both systems and applications, continue to increase in significance for users and to replace custom-built software.

In consequence, software product support assumes an ever more significant role for users.

Historically, the support of software products has not been separately identified as a market but has largely been subsumed within the individual product sectors of software products and applications products.

Exhibit IV-1 shows INPUT's estimate of the current size and anticipated growth of this total support market.

Exhibit IV-1

### Expected Five Year Growth in Software Product Support Market



Source: INPUT
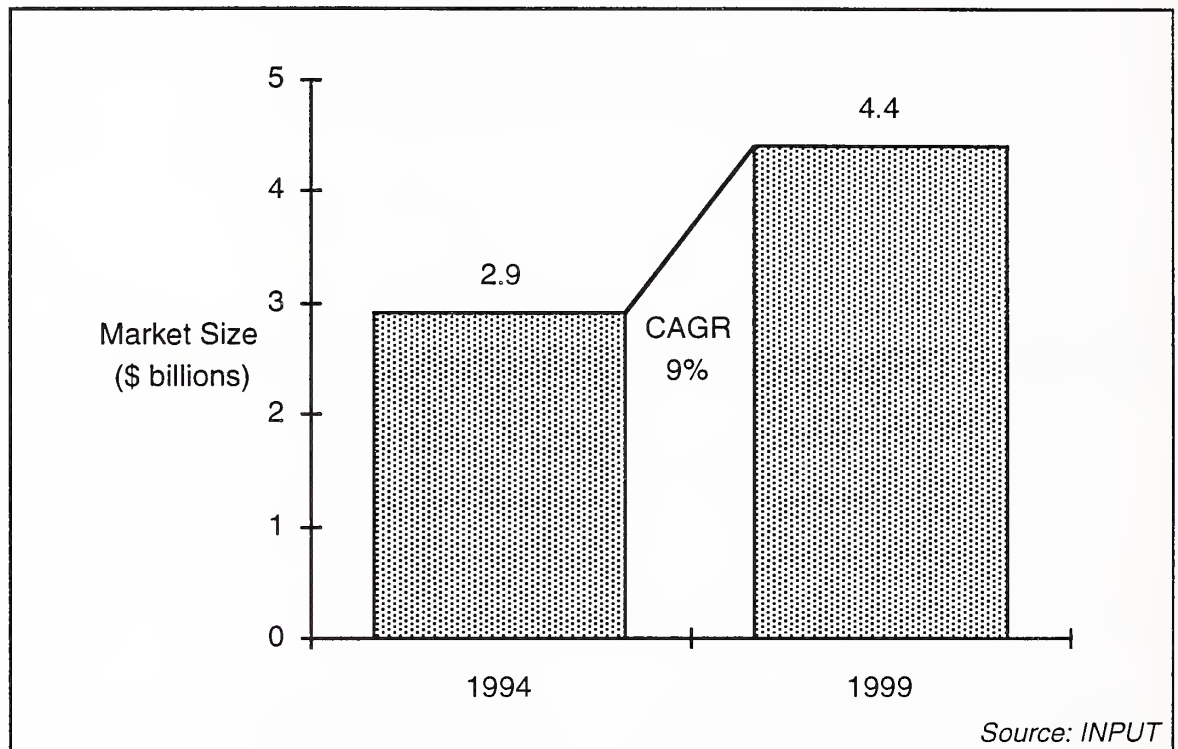
Exhibit IV-2 places this growth in context by providing a comparison of the relative growth of the software product support sector in comparison with the total software product sector in Europe.

It can be seen from this Exhibit that the support sector is expected to grow faster than the total product sector, whilst continuing to account for less than 15 percent of the total value of the product sector.

Exhibit IV-2

## Size of Software Product Support Market Relative to Total Software Product Sector



Source: INPUT
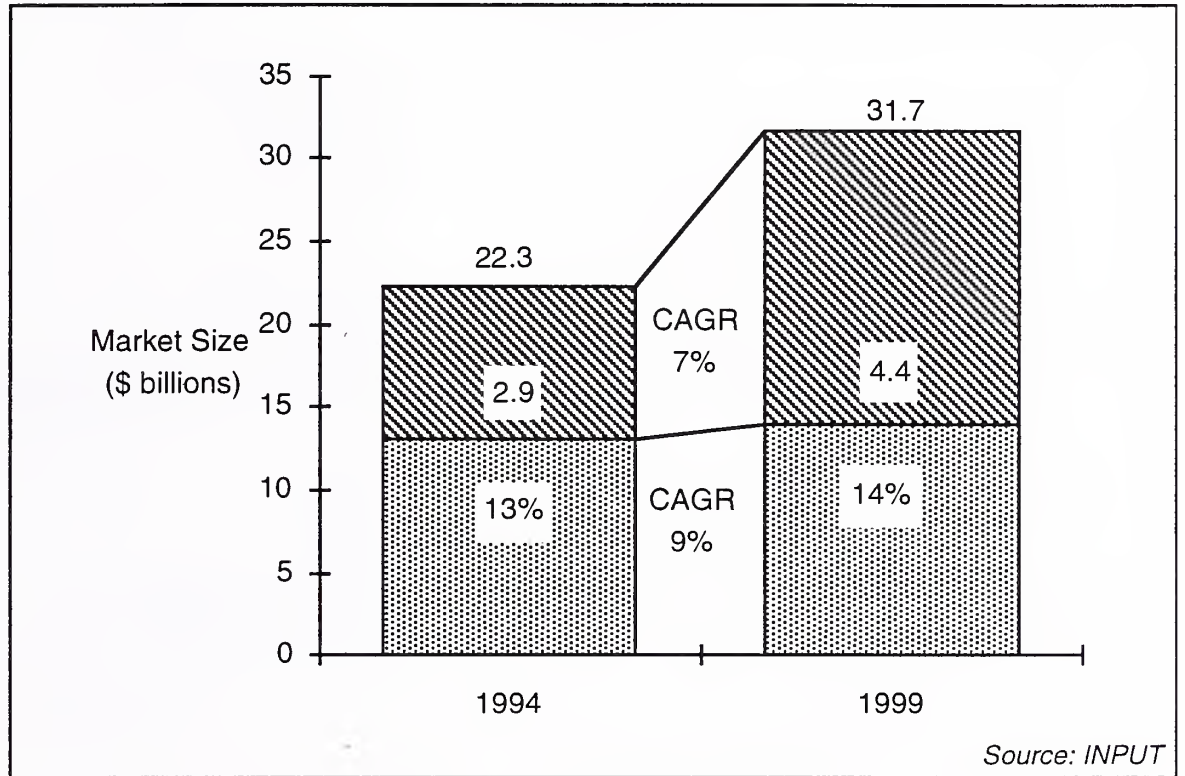
Exhibit IV-3 breaks down the market growth by type of hardware platform.

This Exhibit shows a contraction in the size of the mainframe market, which is balanced by strong growth in the mini and PC/Workstation markets.

Exhibit IV-3

## Changes in Size of Software Product Support Market for Different Hardware Platforms

Mainframe
- 1080
- 890

1994
1999

Market
Size
($ millions)

Minicomputer
- 1240
- 3250

Workstation/PC
- 560
- 1490

0   500  1000 1500 2000 2500 3000 3500

*Source: INPUT*
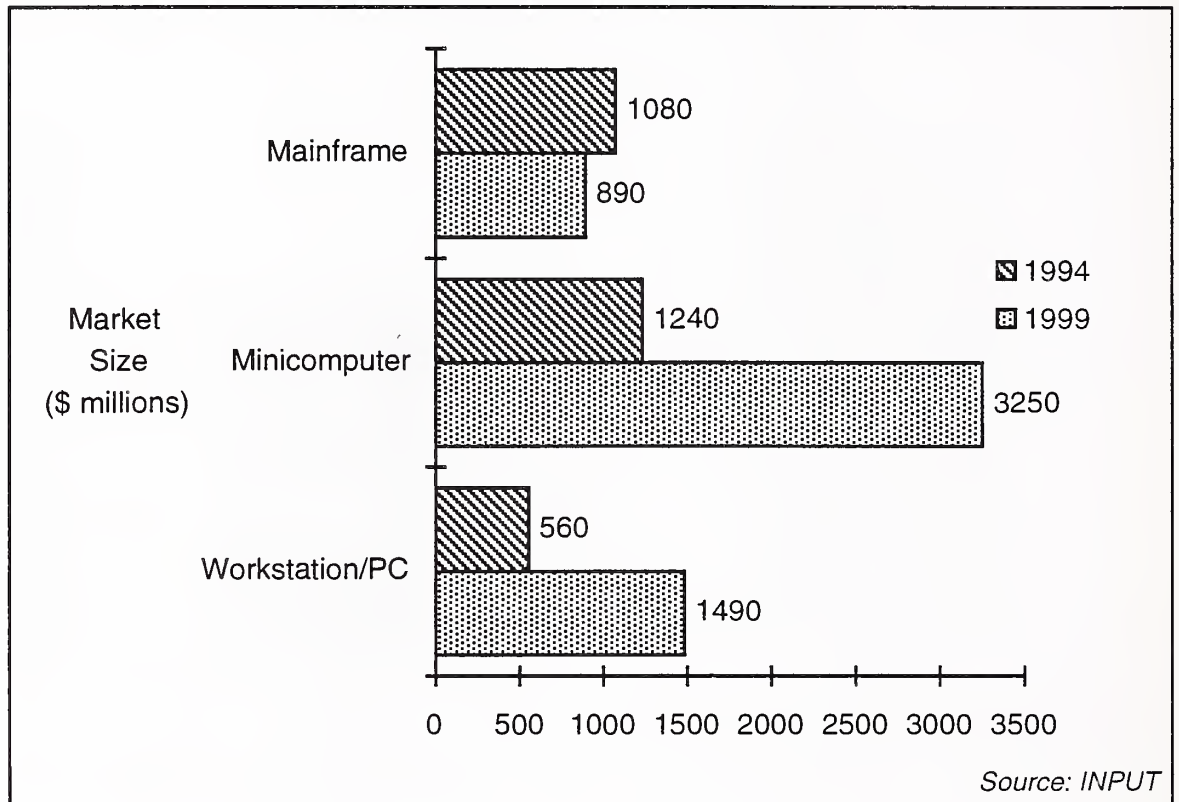
# B
# Market Segmentation Approaches

In assessing any market it is important that any segmentation scheme used is appropriate to the characteristics of that market. This can prove problematic in the case of emerging markets whose characteristics are still in the formative stage or in a state of flux.

The primary segmentation structure normally used by INPUT, developed over the years in response to trends in the Information Services industry, is based on Delivery Mode. Within this overall industry segmentation structure, system software products and applications software products form two distinct segments. (This segmentation scheme is illustrated in Exhibit I-2). Software Support would add a tenth delivery mode to the nine hitherto analysed.

In its published market forecasts, INPUT has traditionally sub-divided each of the system software and applications software delivery modes into three sub-segments — mainframe, minicomputer and workstation/PC. The forecasts provided in Appendix A of this report have adopted this traditional approach as their segmentation basis.

The main reason for this is that the system software product and applications software product forecasts from which they largely derive have a firm historical basis and therefore provide potentially the most accurate starting point for forecasts of the derivative software support segment.

That is not to say, however, that this segmentation is necessarily the most appropriate in terms of developing market characteristics. Alternative segmentation schemes for the software support market have been examined and the more relevant of these are presented here, with some of the forecasts which have used them as a basis. It must, however, be stressed that, at this stage in the development of the segment and in the absence of research capable of accurately quantifying market size according to this non-traditional segmentation parameter, these alternative forecast breakdowns should only be regarded as initial estimates or scenarios and will, of course, be progressively refined as the market develops and trends become clearer.

## C
## Possible Segmentation Schemes

### 1. Software Product Categories

These differentiate support between the two broad software product delivery modes, system software product and applications software product. This remains a valid, broad distinction since the support required in each case is totally different, the former being aimed at the "expert", technical user and the latter at the functional end-user, usually a business user.

The forecasts provided in Chapter IV and Appendix A follow this primary segmentation and are summarised in Exhibit IV-4.

Exhibit IV-4

**Software Product Support by Delivery Mode, Europe 1994**

Applications Software
Support
45%

System Software
Support
55%

Total Market Size: $2.9 billion

*Source: INPUT*
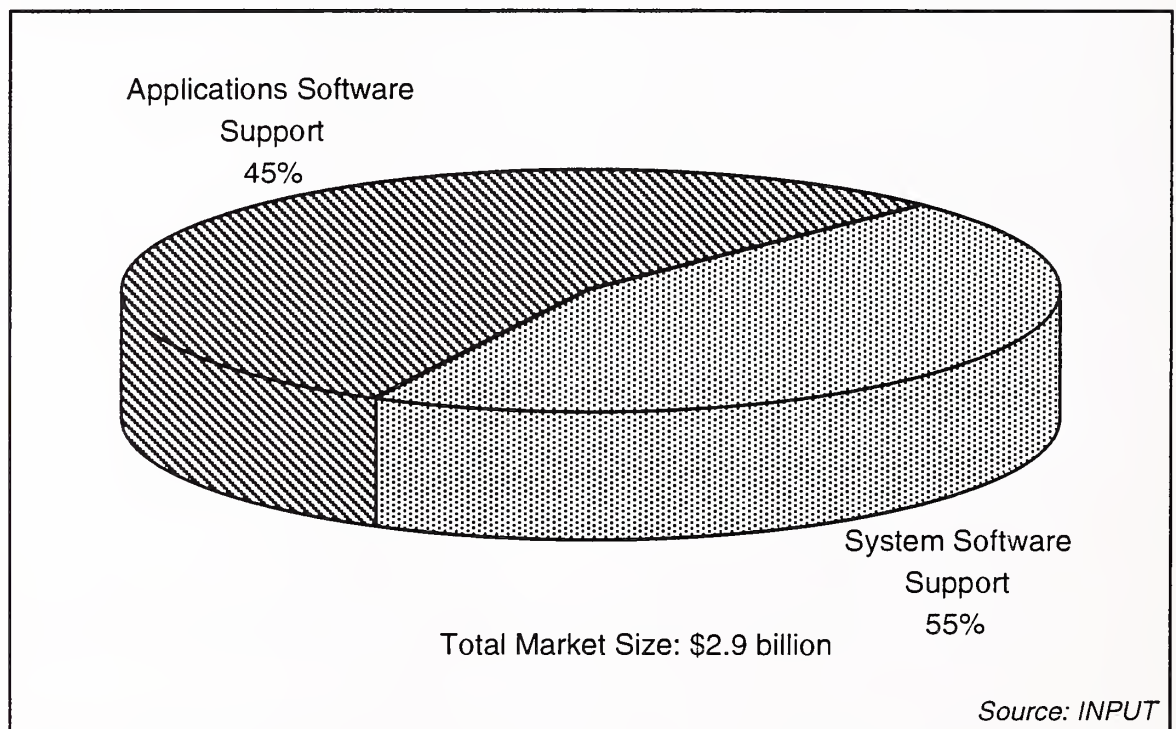
### 2. Application Categories

This segmentation takes the broad categorisation into system software product and applications software product, as described above, one stage further into the application area. Exhibit I-1 in Chapter I illustrated the overall segmentation involved in this approach, which separates software products into the two broad categories mentioned above and their respective sub-segments.

System software can be broadly sub-divided into three areas: systems control, datacentre management and applications development, with more detailed sub-segmentation possible below this, as illustrated in Exhibit IV-5.

Exhibit IV-5

## System Software — Segmentation by Application Type

```
                              System
                              Software
                                 |
        +------------------------+---------------------------------+
        |                        |                                 |
   Systems                  Operations                      Applications
   Control                  Management                      Development
                                                                 |
                                              +------------------+------------------+
                                              |                  |                  |
                                          Program            Database
                                        Development         Management          CASE
                                        & Production         Systems           Systems
                                            Tools
```

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

**Operations Management**
- Capacity Management
- Computer Operations Scheduling
- Datacentre Management
- Disk Management
- Downtime/Repair Monitoring Management
- Job Accounting
- Performance Monitors
- Tape Management
- Utilities
- OLTP Monitors/ Managers
- Software Distribution Tools
- Asset Management
- Network Management
- Security Systems
- Other

**Program Development & Production Tools**
- Application generators
- Assemblers
- Automatic Documentation
- Compilers
- Debugging Aids
- Languages
- Systems Development Control
- Retrieval Systems
- Translators

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

*Source: INPUT*

INPUT's estimate for System Software Support, broken down into the main category headings shown above, is provided in Exhibit IV-6.

Exhibit IV-6

## System Software Support by Application Area, Europe 1994

Systems Control
30%

Operations Management
29%

Application Development
41%

Total Market Size: $1.6 billion

*Source: INPUT*
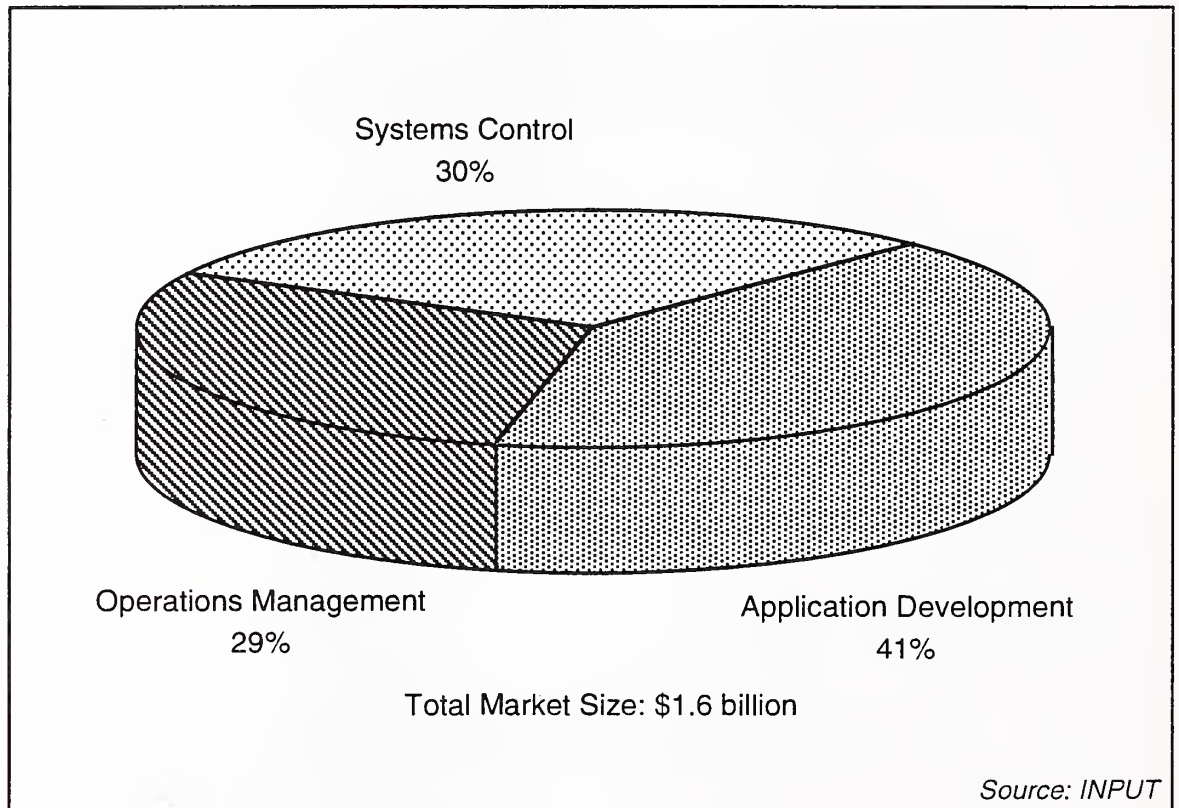
For Applications software, application area tends to equate most realistically to customer industry. "Vertical" market has in recent years found increasing favour as a means of segmenting the developing software and service market, and INPUT has for some time been producing forecasts on this basis for key sectors. Applications software products are typically sub-divided on the basis of the scheme illustrated in Exhibit IV-7.

Exhibit IV-7

## Applications Software — Segmentation by Application Type

```
                          Applications
                           Software

            Cross-Industry                    Industry-Specific

                                              • Discrete Manufacturing
                                              • Process Manufacturing
   Accounting         Human                   • Transportation
                     Resources                • Utilities
                                              • Telecommunications
 • General Ledger    • Human Resources        • Retail Distribution
 • Accounts Payable    Management             • Wholesale Distribution
 • Accounts Receivable • Benefits             • Banking & Finance
 • Billing/Invoicing  • Payroll               • Insurance
 • Costing            • Personnel             • Healthcare
 • Fixed Assets                               • Education
 • International                              • Local Government
   Accounting                                 • Central Government
 • Purchasing                                 • Business Services
 • Taxation                                   • Other Industries
   Planning &        Engineering &
    Analysis          Scientific

 • Executive Information  • CAD/CAE
   Systems               • Structural
 • Budgeting             • Chemical
 • Financial Planning    • Mechanical
 • Forecasting           • Piping
 • Modelling             • Project Control
 • Integrated Analysis   • Nuclear
   Systems               • Statistics/Operations
 • Spreadsheets            Research
 • Project Management    • Mapping
 • Graphics
 • Other
   Education &        Other Cross-
    Training           Industry
```

Source: INPUT

INPUT's estimate for the breakdown of Applications Software Support by vertical/industry market is shown in Exhibit IV-8.

Exhibit IV-8

## Applications Software Product Support, Europe 1994

Industry
67%

Cross-Industry
33%

Total Market Size: $1.3 billion

*Source: INPUT*
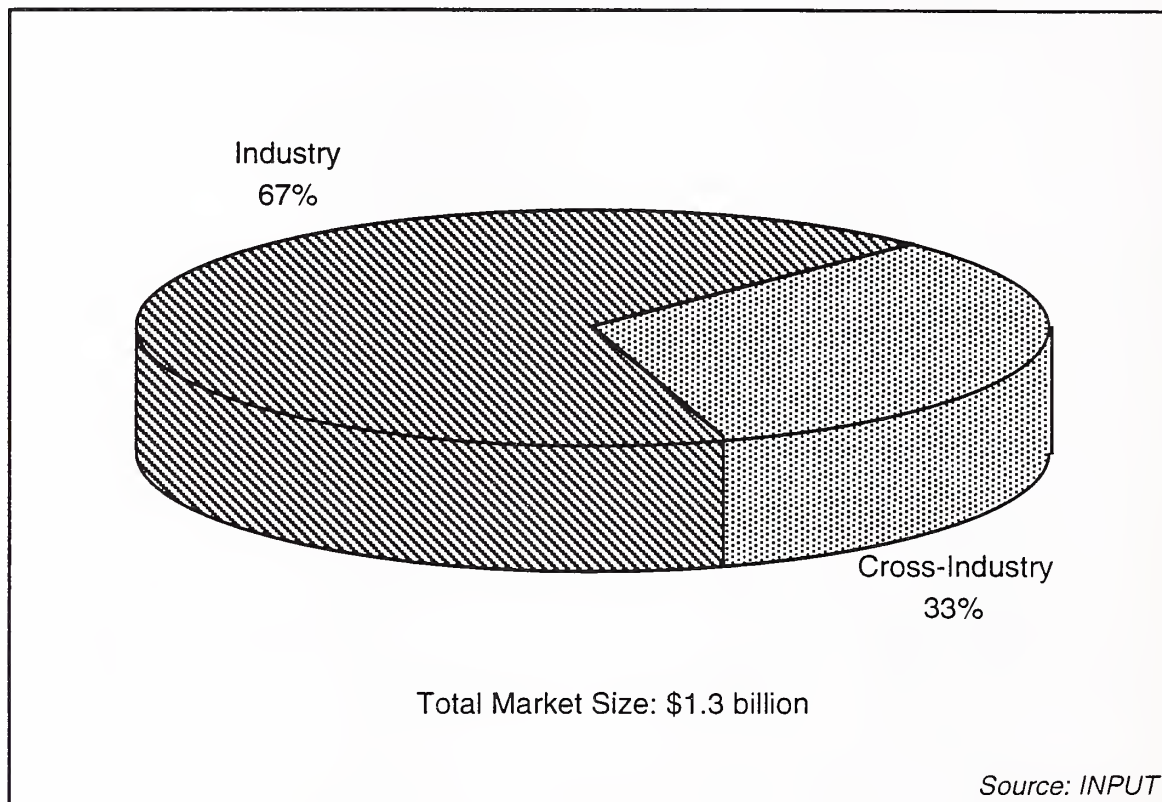
### 3. Geography

Geographic segmentation by European country has always been relevant in Europe, which has traditionally been little more than a collection of national markets. However, the "europeanisation" and/or globalisation of the software and services market is becoming more discernible with each passing year and perhaps nowhere more so than in the software product segment of the market, where the large global players continue to increase their market share.

The European system software product sector is dominated by a handful of major international players, — hardware giants IBM, Digital and Siemens-Nixdorf (occupying three of the top four European rankings), Microsoft and Novell. INPUT estimates that in 1993 these five corporations together accounted for well over half (56%) of the system software *product* market in Europe. The degree of consolidation is evidenced by the fact that in 1992 the top five accounted for just under half the market (48%). (An analysis of vendor rankings for System Software Products is provided as Exhibit B-1 in Appendix B).

The picture on the applications software *product* side remains much more fragmented, although consolidation has also occurred here. The European top five rankings in 1993 accounted for just over one-fifth (22%) of the market, up from 15% in 1992. (An analysis of vendor rankings for Applications Software Product is provided as Exhibit B-2 in Appendix B). It is reasonable to expect continuing consolidation in this market over time.

Given that, for system software, seven of the top ten and, for applications software, five of the top ten, are US-based corporations operating internationally, and that this pattern in repeated in each major European country, then country segmentation *per se* is becoming less relevant. However, Europe is not yet a unified market and, particularly in applications software, a large number of smaller, indigenous niche suppliers exist, and therefore country-based segmentation remains at least partially relevant.

Estimates for software product support in the four main European countries plus Rest of Europe are provided in Appendix A and are summarised in Exhibit IV-9.

Exhibit IV-9

## Software Product Support by Major Country, Europe 1994

◪ System Software        ▣ Application Software

| Country | System Software | Application Software | Total |
|---------|-----------------|----------------------|-------|
| Germany | 353 | 293 | 646 |
| UK | 414 | 170 | 584 |
| France | 203 | 297 | 500 |
| Italy | 137 | 140 | 277 |
| RoE | 473 | 400 | 873 |

0   100   200   300   400   500   600   700   800   900   1000

$ billions

*Source: INPUT*
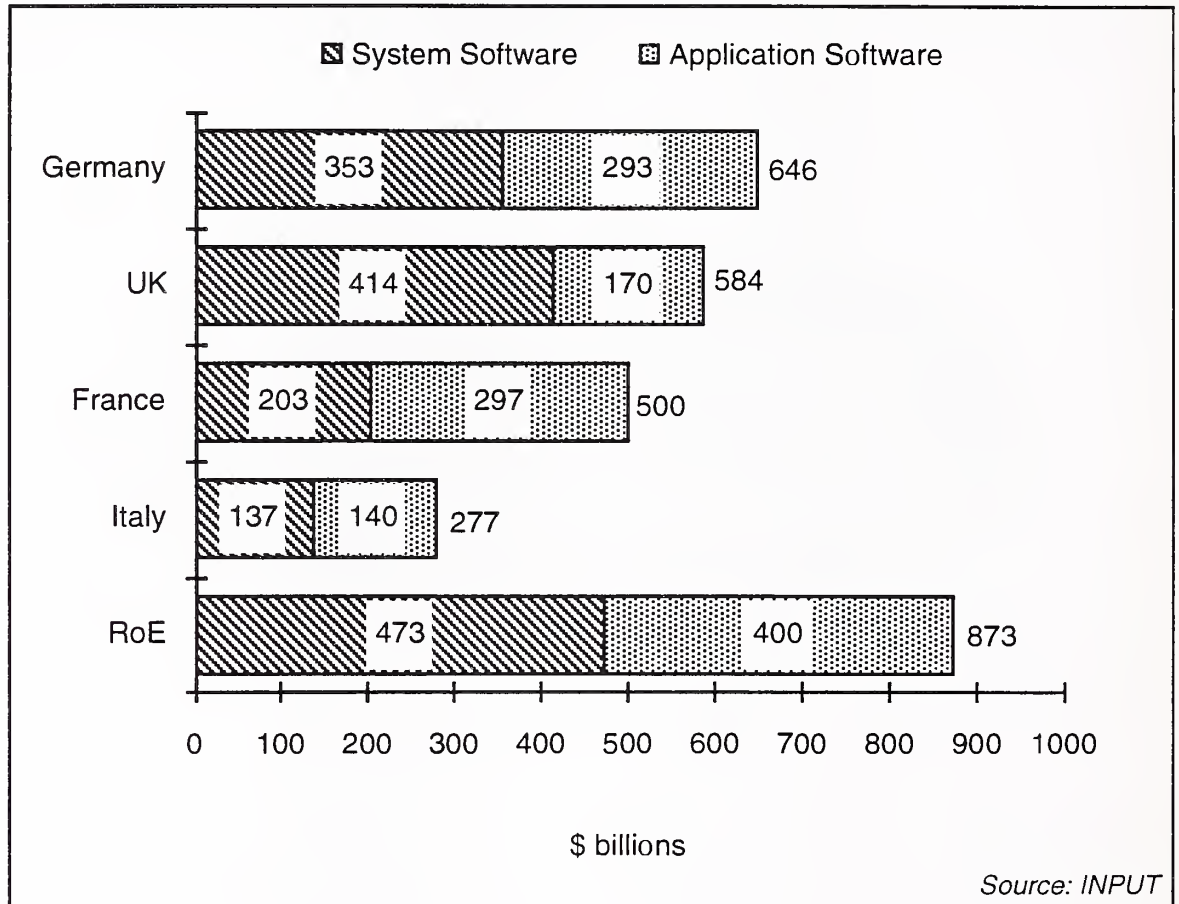
### 4.  Equipment Platform Categories

INPUT and other market commentators have traditionally divided hardware into the three major categories of mainframe, minicomputer and PC/workstation, and software product forecasts for both system and applications software have tended to follow this same pattern.  Indeed, the forecasts presented in Appendix A make use of this form of segmentation.

Exhibit IV-10 summarises these forecasts.

Exhibit IV-10

# Software Product Support by Equipment Platform, Europe 1994

### Total Software Product Support

Mainframe
38%

Desktop
19%

Mini/Server
43%

Total Market Size: $2.9 billion

### System Software Product Support

Mainframe
55%

Desktop
8%

Mini/Server
37%

Total Market Size: $1.6 billion

### Applications Software Product Support

Desktop
33%

Mainframe
16%

Mini/Server
51%

Total Market Size: $1.3 billion

*Source: INPUT*
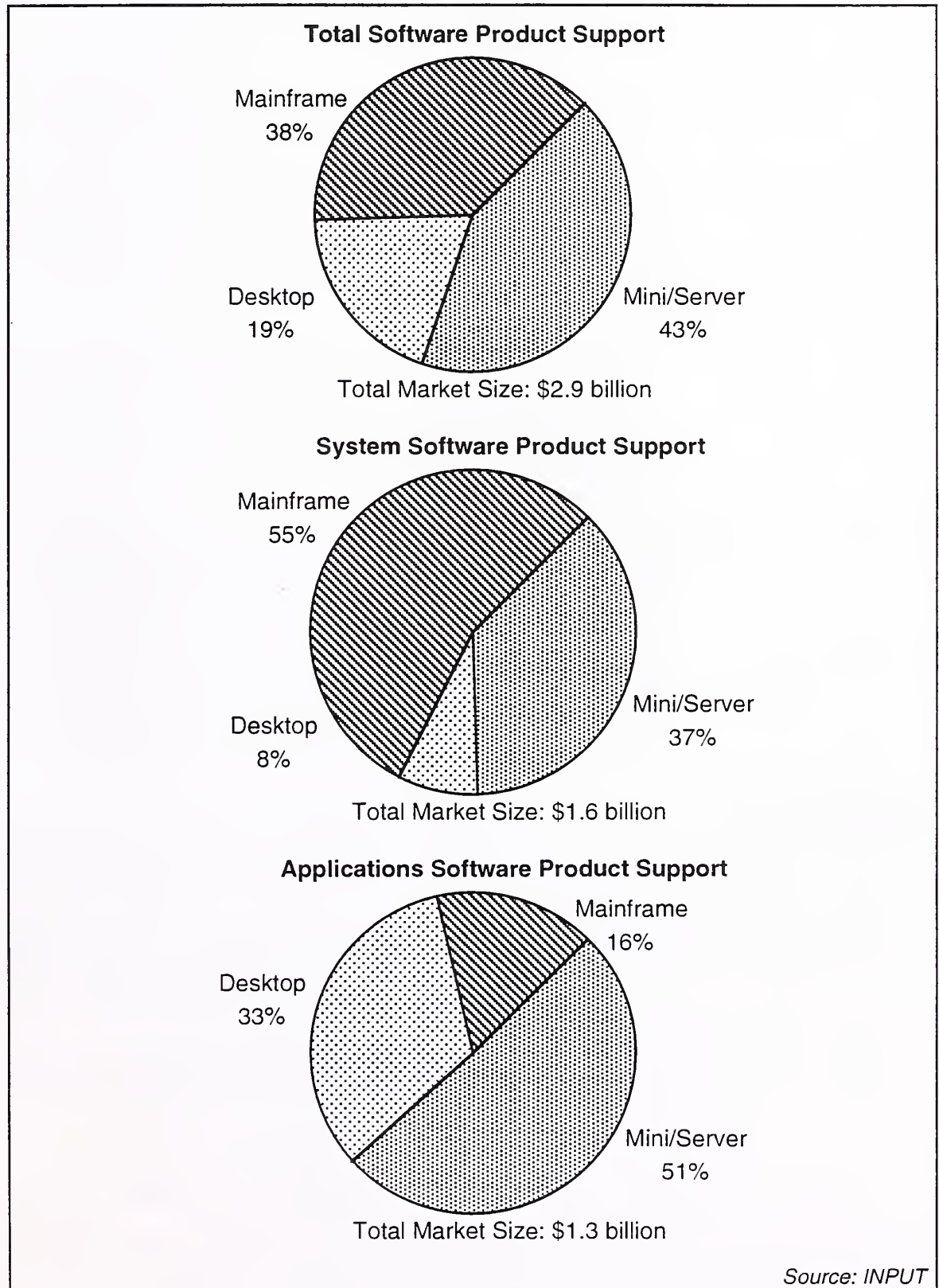
However, it could be argued that hardware platform, once the primary consideration in any system purchase decision, is becoming increasingly an afterthought at the tail-end of the process. Today the primary criteria will more often than not be the software solution required to meet the customer need and the choice of partner or consultant. Software platform is likely to be the next consideration, and, only then, a decision on the hardware needed to run the system.

In addition, when virtually all software ran on large-scale proprietary systems, the question of software support hardly arose. Certainly there was no choice of vendor — the data centre customer was locked in and either paid the price demanded for a support contract from his supplier or went without support. The cost of such support has traditionally been high, generally accepted to be around 15% of software product licence costs.

At the opposite end of the scale, users of the PC platform have been used to free product support directly from their software product vendor, something which has grown less and less appealing to the vendor as real prices of software product continue to fall and margins are progressively eroded.

However, just as have hardware and software products, support services in their turn are moving from a proprietary market, once captive to the product vendor, to a more open market with a choice of support sourcing available to the customer. For different reasons but in response to the same development, vendors operating in the mainframe and mid-range data centre markets, as well as those active at the desktop have set their sights firmly on the server segment, as illustrated in Exhibit IV-11.

Exhibit IV-11

## Software Vendors Focus on Server Market

| Datacentre | Server | Workstation |
|---|---|---|

OLTP ———▶   ◀——— Groupware

Batch ———▶   ◀——— Workflow

DSS ———▶   ◀——— Multimedia

*Source: INPUT*
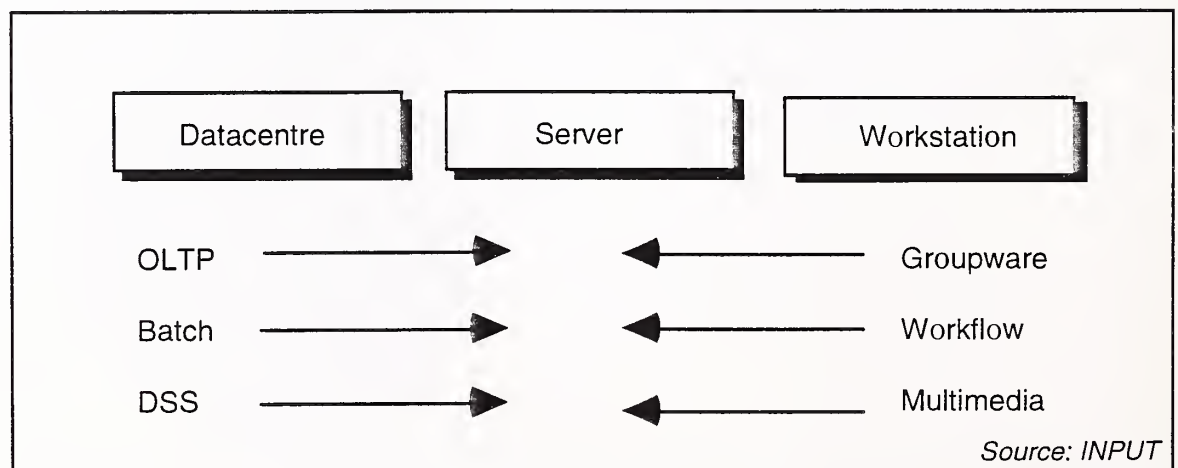
It is probable that segmentation of the support market by hardware platform will become gradually less and less relevant.  However, hardware suppliers will clearly continue to have an interest in this type of view, since it divides the market in a way which most directly relates to their customer/product base and therefore puts an overall sizing on the market they are in the best position to address.

Additionally, as the historical basis for hardware and software product market sizing and forecasts, it represents the most accurate starting point for any potential re-segmentation of the market.

A more meaningful split for the future might be a slightly modified division into the three segments employed in Exhibit IV-11 above.

- Traditional mainframe or mid-range/datacentre environment

- PC/workstation, desktop or portable

- Open systems server.

### 5.  Operating System Categories

As explained above, operating system is becoming at least as relevant as hardware platform when considering the development of software-related markets, such as support.

With the rapid growth in client/server and open systems and applications ported to multiple platforms, any support provided to the customer inevitably involves a significant element of operating system know-how.

Customers do not wish to have to decide whether the problem is in the operating system or within the application itself (or the interaction of both) before they can call upon the appropriate source of support.  There is an increasing customer demand for one-stop shopping in respect of software support — a single point of reference (whether it be an in-house IS source or an external provider) who is able and willing to solve the overall problem.

A segmentation could therefore be envisaged which divides the market into operating system categories, for example:

- Proprietary

- UNIX (plus derivatives)

- DOS

- DOS/Windows

- OS/2.

However, the data for producing such an analysis is not currently
sufficiently detailed, so this particular form of segmentation remains one
to be explored as more quantitative data on the support marketplace is
gathered and analysed.

## 6. Supplier Channel Categories

A key segmentation, particularly for vendors, is that of channel of supply.

The market for software product is large and diffuse and the number of
potential buyers enormous. Software product prices are continually
falling and marketing is assuming an ever more important role. Mass
markets have forced vendors to move from traditional direct field sales to
a variety of channels which have more in common with the consumer
market than with industry and commerce. Such channels include direct
mail, third-party VARs, OEM deals, advertising and telemarketing.

As applications software product vendors introduce new products, and as
the cost of field sales operations continues to increase, software vendors
are seeking alternative distribution channels.

The supply of software itself clearly represents a prime potential channel
for further support. Channels used (or with the potential for being used)
include:

- Software product developer

- Software product distributor/dealer

- Equipment vendor (including turnkey systems)

- Independent professional services vendor

- Dedicated maintenance company.

To this should be added the consideration of original software purchase,
which may or may not have been through that particular channel, i.e. the
question of the extent to which support purchase is "captive" to the
software supplier.

For the purposes of this first analysis, three broad supplier groupings
have been employed:

- Hardware vendors

- Software vendors/ISVs

- Third party vendors (including professional services companies
  etc.).

Exhibit IV-12 estimates their respective market shares in the software support market in total, as well as in the two individual components, systems software and applications software support. (IBM is excluded from this analysis since software support is a "captive" element of software product licence fees).

Exhibit IV-12

## Software Product Support by Type of Vendor, Europe 1994

**Total Software Product**

Third Party
23%

Software
30%

Hardware
47%

Total Market Size: $2.9 billion

**System Software Product**

Third Party
10%

Software
20%

Hardware
70%

Total Market Size: $1.6 billion

**Applications Software Product**

Third Party
39%

Software
43%

Hardware
18%

Total Market Size: $1.3 billion

*Source: INPUT*

# A
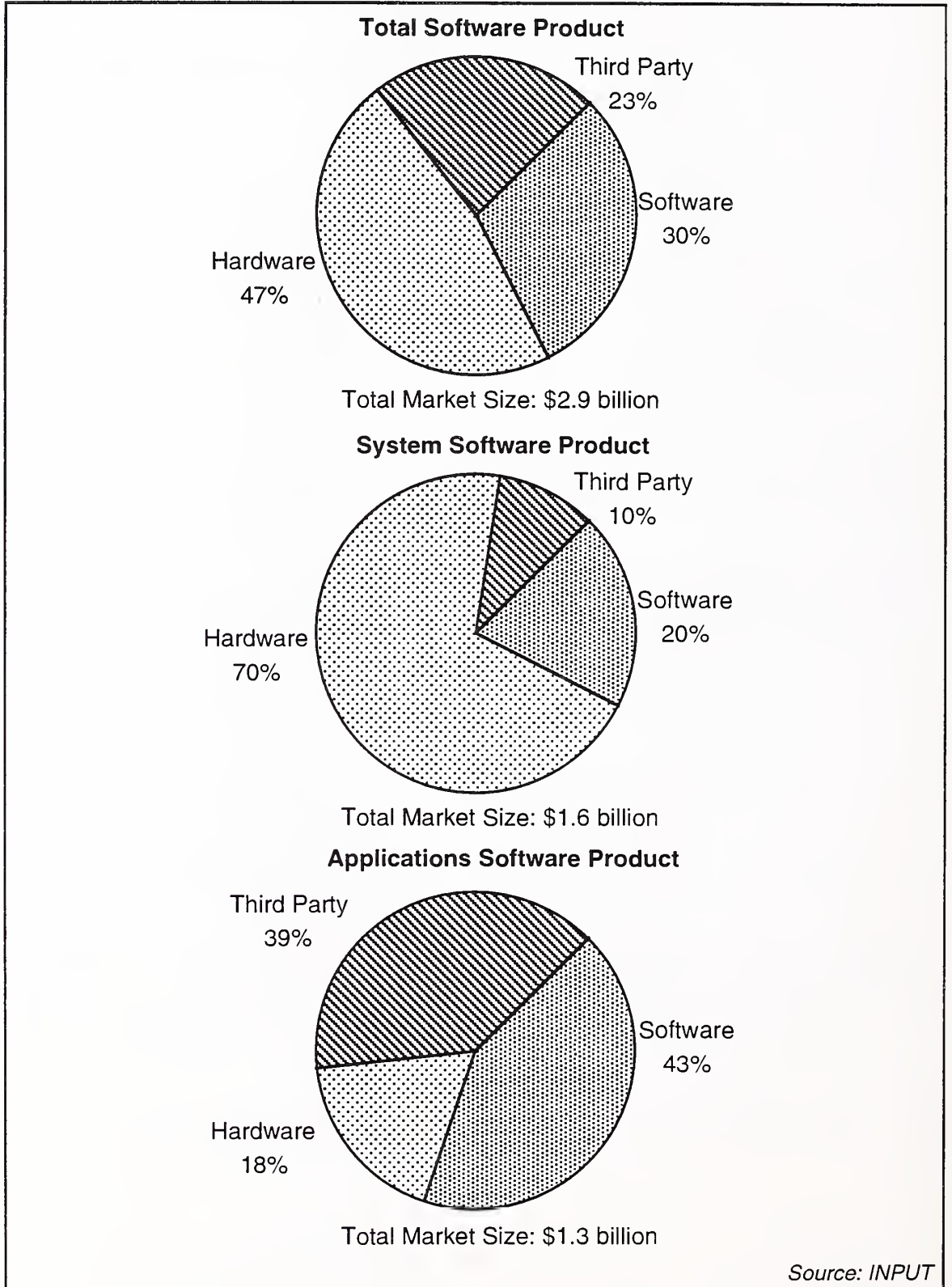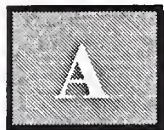
# Country Market Forecast Data

## A

## Europe

Exhibit A-1

### Europe: Software Product Markets — US$ millions

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 11,800 | 4% | 12,250 | 11,600 | 13,050 | 13,450 | 14,000 | 14,450 | 3% |
| – Mainframe | 5,200 | -2% | 5,100 | 4,800 | 4,600 | 4,300 | 4,000 | 3,600 | -7% |
| – Minicomputer | 3,700 | 5% | 3,900 | 3,100 | 4,300 | 4,500 | 4,750 | 4,950 | 5% |
| – Workstation/PC | 2,900 | 12% | 3,250 | 3,700 | 4,150 | 4,650 | 5,250 | 5,900 | 13% |
| Applications Software | 9,390 | 7% | 10,080 | 11,040 | 12,200 | 13,720 | 15,340 | 17,110 | 11% |
| – Mainframe | 840 | -7% | 780 | 740 | 700 | 670 | 640 | 610 | -5% |
| – Minicomputer | 2,750 | 2% | 2,800 | 3,000 | 3,300 | 3,650 | 4,000 | 4,300 | 9% |
| – Workstation/PC | 5,800 | 12% | 6,500 | 7,300 | 8,200 | 9,400 | 10,700 | 12,200 | 13% |
| Total Software Product | 21,190 | 5% | 22,330 | 22,640 | 25,250 | 27,170 | 29,340 | 31,560 | 7% |

*Source: INPUT*

Exhibit A-2

## Europe: Software Support Markets — US$ millions

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 1,510 | 5% | 1,580 | 1,640 | 1,710 | 1,790 | 1,890 | 1,960 | 4% |
| – Mainframe | 880 | --1% | 870 | 850 | 830 | 800 | 770 | 710 | -4% |
| – Minicomputer | 530 | 9% | 580 | 630 | 680 | 740 | 810 | 870 | 8% |
| – Workstation/PC | 100 | 30% | 130 | 160 | 200 | 250 | 310 | 380 | 24% |
| Applications Software | 1,210 | 7% | 1,300 | 1,440 | 1,650 | 1,880 | 2,140 | 2,430 | 13% |
| – Mainframe | 220 | -5% | 210 | 200 | 200 | 190 | 190 | 180 | -3% |
| – Minicomputer | 630 | 5% | 660 | 720 | 820 | 930 | 1,030 | 1,140 | 12% |
| – Workstation/PC | 360 | 19% | 430 | 520 | 630 | 760 | 920 | 1,110 | 21% |
| Total Software Product | 2,720 | 6% | 2,880 | 3,080 | 3,360 | 3,670 | 4,030 | 4,390 | 9% |

Source: INPUT

Exhibit A-3

## Europe: Software Support as % of Product

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 13% | 1% | 13% | 14% | 14% | 13% | 14% | 14% | 1% |
| – Mainframe | 17% | 1% | 17% | 18% | 18% | 19% | 19% | 20% | 3% |
| – Minicomputer | 14% | 4% | 15% | 20% | 16% | 16% | 16% | 16% | 3% |
| – Workstation/PC | 3% | 16% | 4% | 4% | 5% | 5% | 6% | 6% | 10% |
| Applications Software | 13% | 0% | 13% | 13% | 14% | 14% | 14% | 14% | 2% |
| – Mainframe | 26% | 3% | 27% | 27% | 29% | 28% | 30% | 30% | 2% |
| – Minicomputer | 23% | 3% | 24% | 25% | 25% | 26% | 26% | 27% | 2% |
| – Workstation/PC | 6% | 7% | 7% | 7% | 8% | 8% | 9% | 9% | 7% |
| Total Software Product | 13% | 0% | 13% | 14% | 13% | 14% | 14% | 14% | 2% |

*Source: INPUT*

# B
# France

Exhibit B-1

## France: Software Product Market — US$ millions

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 2,627 | 2% | 2,678 | 2,712 | 2,746 | 2,797 | 2,898 | 2,999 | 2% |
| – Mainframe | 1,110 | -4% | 1,068 | 1,017 | 958 | 890 | 822 | 737 | -7% |
| – Minicomputer | 864 | 4% | 898 | 915 | 941 | 975 | 1,034 | 1,093 | 4% |
| – Workstation/PC | 653 | 9% | 712 | 780 | 847 | 932 | 1,042 | 1,169 | 10% |
| Applications Software | 2,457 | 3% | 2,526 | 2,609 | 2,771 | 3,000 | 3,289 | 3,584 | 7% |
| – Mainframe | 169 | -14% | 146 | 125 | 110 | 98 | 90 | 83 | -11% |
| – Minicomputer | 729 | 1% | 736 | 747 | 788 | 841 | 902 | 925 | 5% |
| – Workstation/PC | 1,559 | 5% | 1,644 | 1,737 | 1,873 | 2,051 | 2,297 | 2,576 | 9% |
| Total Software Product | 5,084 | 2% | 5,204 | 5,321 | 5,517 | 5,797 | 6,187 | 6,583 | 5% |

*Source: INPUT*

Exhibit B-2

## France: Software Support Markets — US$ millions

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 199 | 3% | 204 | 208 | 214 | 224 | 238 | 255 | 5% |
| – Mainframe | 100 | -2% | 98 | 95 | 92 | 89 | 85 | 80 | -4% |
| – Minicomputer | 86 | 6% | 91 | 95 | 100 | 107 | 118 | 130 | 7% |
| – Workstation/PC | 13 | 15% | 15 | 18 | 22 | 28 | 35 | 45 | 25% |
| Applications Software | 284 | 5% | 297 | 313 | 339 | 379 | 424 | 469 | 35% |
| – Mainframe | 44 | -11% | 39 | 34 | 30 | 28 | 26 | 24 | -9% |
| – Minicomputer | 146 | 3% | 151 | 157 | 169 | 187 | 203 | 213 | 7% |
| – Workstation/PC | 94 | 14% | 107 | 122 | 140 | 164 | 195 | 232 | 17% |
| Total Software Product | 483 | 4% | 501 | 521 | 553 | 603 | 662 | 1,602 | 26% |

*Source: INPUT*

MSTQ                   A-5

Exhibit B-3

## France: Software Support as a Percentage of Product

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 8% | 1% | 8% | 8% | 8% | 8% | 8% | 9% | 2% |
| – Mainframe | 9% | 2% | 9% | 9% | 10% | 10% | 10% | 11% | 3% |
| – Minicomputer | 10% | 2% | 10% | 10% | 11% | 11% | 11% | 12% | 3% |
| – Workstation/PC | 2% | 6% | 2% | 2% | 3% | 3% | 3% | 4% | 13% |
| Applications Software | 12% | 2% | 12% | 12% | 12% | 13% | 13% | 38% | 26% |
| – Mainframe | 26% | 3% | 27% | 27% | 27% | 29% | 29% | 29% | 2% |
| – Minicomputer | 20% | 3% | 21% | 21% | 21% | 22% | 23% | 23% | 2% |
| – Workstation/PC | 6% | 8% | 7% | 7% | 7% | 8% | 8% | 43% | 46% |
| Total Software Product | 10% | 1% | 10% | 10% | 10% | 10% | 11% | 24% | 20% |

*Source: INPUT*

# C
# Germany

Exhibit C-1

## Germany: Software Product Markets — US$ millions

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 2,931 | 4% | 3,046 | 3,161 | 3,276 | 3,333 | 3,448 | 3,563 | 3% |
| – Mainframe | 1,379 | 0% | 1,379 | 1,322 | 1,236 | 1,092 | 948 | 776 | -11% |
| – Minicomputer | 862 | 3% | 891 | 948 | 1,006 | 1,063 | 1,121 | 1,178 | 6% |
| – Workstation/PC | 690 | 12% | 776 | 891 | 1,034 | 1,178 | 1,379 | 1,609 | 16% |
| Applications Software | 1,960 | 8% | 2,120 | 2,368 | 2,764 | 3,218 | 3,729 | 4,357 | 15% |
| – Mainframe | 236 | -5% | 224 | 213 | 207 | 201 | 195 | 190 | -3% |
| – Minicomputer | 603 | 0% | 603 | 661 | 833 | 1,006 | 1,178 | 1,408 | 18% |
| – Workstation/PC | 1,121 | 15% | 1,293 | 1,494 | 1,724 | 2,011 | 2,356 | 2,759 | 16% |
| Total Software Product | 4,891 | 6% | 5,166 | 5,529 | 6,040 | 6,551 | 7,177 | 7,920 | 9% |

*Source: INPUT*

Exhibit C-2

## Germany: Software Support Markets — US$ millions

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 338 | 5% | 354 | 363 | 369 | 379 | 389 | 388 | 2% |
| – Mainframe | 214 | 2% | 218 | 212 | 201 | 185 | 165 | 137 | -9% |
| – Minicomputer | 103 | 7% | 110 | 119 | 129 | 142 | 156 | 167 | 9% |
| – Workstation/PC | 21 | 24% | 26 | 32 | 39 | 52 | 68 | 84 | 26% |
| Applications Software | 278 | 6% | 296 | 332 | 403 | 482 | 572 | 687 | 18% |
| – Mainframe | 66 | -3% | 64 | 62 | 61 | 60 | 60 | 59 | -2% |
| – Minicomputer | 145 | 2% | 148 | 165 | 213 | 261 | 312 | 380 | 21% |
| – Workstation/PC | 67 | 25% | 84 | 105 | 129 | 161 | 200 | 248 | 24% |
| Total Software Product | 616 | 6% | 650 | 695 | 772 | 861 | 961 | 1,075 | 11% |

*Source: INPUT*

Exhibit C-3

# Germany: Software Support as a Percentage of Product

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 12% | 1% | 12% | 11% | 11% | 11% | 11% | 11% | -1% |
| – Mainframe | 16% | 2% | 16% | 16% | 16% | 17% | 17% | 18% | 2% |
| – Minicomputer | 12% | 3% | 12% | 13% | 13% | 13% | 14% | 14% | 3% |
| – Workstation/PC | 3% | 10% | 3% | 4% | 4% | 4% | 5% | 5% | 9% |
| Applications Software | 14% | -2% | 14% | 14% | 15% | 15% | 15% | 16% | 2% |
| – Mainframe | 28% | 2% | 29% | 29% | 29% | 30% | 31% | 31% | 2% |
| – Minicomputer | 24% | 2% | 25% | 25% | 26% | 26% | 26% | 27% | 2% |
| – Workstation/PC | 6% | 9% | 6% | 7% | 7% | 8% | 8% | 9% | 7% |
| Total Software Product | 13% | 0% | 13% | 13% | 13% | 13% | 13% | 14% | 2% |

Source: INPUT

MSTQ                   A-9

# D
# United Kingdom

Exhibit D-1

## United Kingdom: Software Product Markets — US$ millions

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 1,761 | 5% | 1,850 | 1,922 | 1,997 | 2,071 | 2,146 | 2,220 | 4% |
| – Mainframe | 777 | -5% | 740 | 695 | 673 | 636 | 607 | 555 | -6% |
| – Minicomputer | 540 | 10% | 592 | 643 | 673 | 710 | 740 | 777 | 6% |
| – Workstation/PC | 444 | 17% | 518 | 584 | 651 | 725 | 799 | 888 | 11% |
| Applications Software | 1,079 | 12% | 1,213 | 1,347 | 1,509 | 1,701 | 1,879 | 2,071 | 11% |
| – Mainframe | 96 | -4% | 92 | 86 | 81 | 77 | 74 | 71 | -5% |
| – Minicomputer | 303 | 7% | 325 | 348 | 370 | 399 | 429 | 466 | 7% |
| – Workstation/PC | 680 | 17% | 796 | 913 | 1,058 | 1,225 | 1,376 | 1,534 | 14% |
| Total Software Product | 2,840 | 8% | 3,063 | 3,269 | 3,506 | 3,772 | 4,025 | 4,291 | 7% |

Source: INPUT

Exhibit D-2

## United Kingdom: Software Support Markets — US$ millions

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 373 | 11% | 415 | 446 | 475 | 514 | 546 | 582 | 7% |
| – Mainframe | 210 | 1% | 213 | 209 | 209 | 207 | 203 | 193 | -2% |
| – Minicomputer | 119 | 18% | 141 | 161 | 175 | 195 | 211 | 231 | 10% |
| – Workstation/PC | 44 | 39% | 61 | 76 | 91 | 112 | 132 | 158 | 21% |
| Applications Software | 152 | 12% | 170 | 190 | 214 | 244 | 274 | 309 | 13% |
| – Mainframe | 25 | -4% | 24 | 23 | 22 | 22 | 21 | 21 | -3% |
| – Minicomputer | 79 | 9% | 86 | 94 | 102 | 112 | 122 | 135 | 9% |
| – Workstation/PC | 48 | 25% | 60 | 73 | 90 | 110 | 131 | 153 | 21% |
| Total Software Product | 525 | 11% | 585 | 636 | 689 | 758 | 820 | 891 | 9% |

Source: INPUT

Exhibit D-3

## United Kingdom: Software Support as a Percentage of Product

| Delivery  Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 21% | 6% | 22% | 24% | 25% | 25% | 26% | 3% | |
| – Mainframe | 27% | 6% | 29% | 30% | 31% | 33% | 33% | 35% | 4% |
| – Minicomputer | 22% | 8% | 24% | 25% | 26% | 27% | 29% | 30% | 5% |
| – Workstation/PC | 10% | 19% | 12% | 13% | 14% | 15% | 17% | 18% | 9% |
| Applications Software | 14% | -1% | 14% | 14% | 14% | 14% | 15% | 15% | 1% |
| – Mainframe | 26% | 0% | 26% | 27% | 27% | 29% | 28% | 30% | 3% |
| – Minicomputer | 26% | 1% | 26% | 27% | 28% | 28% | 28% | 29% | 2% |
| – Workstation/PC | 7% | 7% | 8% | 8% | 9% | 9% | 10% | 10% | 6% |
| Total Software Product | 18% | 3% | 519% | 19% | 20% | 20% | 20% | 21% | 2% |

*Source: INPUT*

# E
# Italy

Exhibit E-1

## Italy:  Software  Product  Markets  —  US$  million

| Delivery  Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 1,345 | 4% | 1,404 | 1,462 | 1,520 | 1,579 | 1,637 | 1,696 | 4% |
| – Mainframe | 529 | -4% | 506 | 474 | 450 | 427 | 406 | 374 | -6% |
| – Minicomputer | 442 | 5% | 465 | 491 | 509 | 520 | 529 | 538 | 3% |
| – Workstation/PC | 374 | 16% | 433 | 497 | 561 | 632 | 702 | 784 | 13% |
| Applications Software | 1,135 | 8% | 1,228 | 1,357 | 1,509 | 1,690 | 1,872 | 2,082 | 11% |
| – Mainframe | 91 | -7% | 85 | 80 | 74 | 70 | 67 | 64 | -6% |
| – Minicomputer | 313 | -8% | 289 | 295 | 300 | 298 | 255 | 199 | -7% |
| – Workstation/PC | 731 | 17% | 854 | 982 | 1,135 | 1,322 | 1,550 | 1,819 | 16% |
| Total Software Product | 2,480 | 6% | 2,632 | 2,819 | 3,029 | 3,269 | 3,509 | 3,778 | 7% |

*Source: INPUT*

Exhibit E-2

## Italy:  Software  Support  Makets  —  US$  millions

| Delivery  Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 140 | -1% | 138 | 143 | 154 | 165 | 178 | 188 | 6% |
| – Mainframe | 79 | -5% | 75 | 72 | 72 | 71 | 71 | 68 | -2% |
| – Minicomputer | 57 | 5% | 60 | 65 | 71 | 77 | 82 | 87 | 8% |
| – Workstation/PC | 4 | -25% | 3 | 6 | 11 | 17 | 25 | 33 | 62% |
| Applications Software | 136 | 4% | 141 | 154 | 171 | 191 | 203 | 217 | 9% |
| – Mainframe | 24 | -4% | 23 | 21 | 20 | 20 | 19 | 18 | -5% |
| – Minicomputer | 75 | -5% | 71 | 74 | 77 | 78 | 68 | 54 | -5% |
| – Workstation/PC | 37 | 27% | 47 | 59 | 74 | 93 | 116 | 145 | 25% |
| Total Software Product | 276 | 1% | 279 | 297 | 325 | 356 | 381 | 405 | 8% |

*Source: INPUT*

Exhibit E-3

# Italy: Software Support as a Percentage of Product

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 10% | -6% | 10% | 10% | 10% | 10% | 11% | 11% | 2% |
| – Mainframe | 15% | -1% | 15% | 15% | 16% | 17% | 17% | 18% | 4% |
| – Minicomputer | 13% | 0% | 13% | 13% | 14% | 15% | 16% | 16% | 5% |
| – Workstation/PC | 1% | -35% | 1% | 1% | 2% | 3% | 4% | 4% | 43% |
| Applications Software | 12% | -4% | 11% | 11% | 11% | 11% | 11% | 10% | -2% |
| – Mainframe | 26% | 3% | 27% | 26% | 27% | 29% | 28% | 28% | 1% |
| – Minicomputer | 24% | 3% | 25% | 25% | 26% | 26% | 27% | 27% | 2% |
| – Workstation/PC | 5% | 9% | 6% | 6% | 7% | 7% | 7% | 8% | 8% |
| Total Software Product | 11% | -5% | 11% | 11% | 11% | 11% | 11% | 11% | 0% |

*Source: INPUT*

# F
# Rest of Europe

Exhibit F-1

## Rest of Europe: Software Product Markets — US$ millions

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 3,136 | 4% | 3,272 | 3,434 | 3,511 | 3,670 | 3,871 | 3,972 | 4% |
| – Mainframe | 1,405 | 0% | 1,407 | 1,292 | 1,283 | 1,255 | 1,217 | 1,158 | -4% |
| – Minicomputer | 992 | 6% | 1,054 | 1,103 | 1,171 | 1,232 | 1,326 | 1,364 | 5% |
| – Workstation/PC | 739 | 10% | 811 | 948 | 1,057 | 1,183 | 1,328 | 1,450 | 12% |
| Applications Software | 2,759 | 8% | 2,993 | 3,359 | 3,647 | 4,111 | 4,571 | 5,016 | 11% |
| – Mainframe | 248 | -6% | 233 | 236 | 228 | 224 | 214 | 202 | -3% |
| – Minicomputer | 802 | 6% | 847 | 949 | 1,009 | 1,096 | 1,236 | 1,302 | 9% |
| – Workstation/PC | 1,709 | 12% | 1,913 | 2,174 | 2,410 | 2,791 | 3,121 | 3,512 | 13% |
| Total Software Product | 5,895 | 6% | 6,265 | 6,702 | 7,158 | 7,781 | 8,442 | 8,988 | 7% |

*Source: INPUT*

Exhibit F-2

## Rest of Europe: Software Support Markets — US$ millions

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 460 | 2% | 469 | 480 | 498 | 508 | 539 | 547 | 3% |
| – Mainframe | 277 | -4% | 266 | 262 | 256 | 248 | 246 | 232 | -3% |
| – Minicomputer | 165 | 8% | 178 | 190 | 205 | 219 | 243 | 255 | 7% |
| – Workstation/PC | 18 | 39% | 25 | 28 | 37 | 41 | 50 | 60 | 19% |
| Applications Software | 360 | 10% | 396 | 451 | 523 | 584 | 667 | 748 | 14% |
| – Mainframe | 61 | -2% | 60 | 60 | 67 | 60 | 64 | 58 | -1% |
| – Minicomputer | 185 | 10% | 204 | 230 | 259 | 292 | 325 | 358 | 12% |
| – Workstation/PC | 114 | 16% | 132 | 161 | 197 | 232 | 278 | 332 | 20% |
| Total Software Product | 820 | 5% | 865 | 931 | 1,021 | 1,092 | 1,206 | 1,295 | 8% |

*Source: INPUT*

Exhibit F-3

## Rest of Europe: Software Support as a Percentage of Product

| Delivery Modes | 1993 | 93-94 Growth (%) | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 94-99 CAGR (%) |
|---|---|---|---|---|---|---|---|---|---|
| Systems Software | 15% | -2% | 14% | 14% | 14% | 14% | 14% | 14% | -1% |
| – Mainframe | 20% | -4% | 19% | 20% | 20% | 20% | 20% | 20% | 1% |
| – Minicomputer | 17% | 2% | 17% | 17% | 18% | 18% | 18% | 19% | 2% |
| – Workstation/PC | 2% | 27% | 3% | 3% | 4% | 3% | 4% | 4% | 6% |
| Applications Software | 13% | 1% | 13% | 13% | 14% | 14% | 15% | 15% | 2% |
| – Mainframe | 25% | 5% | 26% | 25% | 29% | 27% | 30% | 29% | 2% |
| – Minicomputer | 23% | 4% | 24% | 24% | 26% | 27% | 26% | 27% | 3% |
| – Workstation/PC | 7% | 3% | 7% | 7% | 8% | 8% | 9% | 9% | 6% |
| Total Software Product | 14% | -1% | 14% | 14% | 14% | 14% | 14% | 14% | 1% |

*Source: INPUT*

**B**

# Leading Software Product Support Vendor Data

**A**

## All Vendors - Software Products, Europe 1993

Exhibits B-1 and B-2 show INPUT estimates of positioning, market revenue and share for European systems software products and applications software products respectively.

Exhibit B-1

## Leading Vendors, System Software Products Europe, 1993

| Rank | Vendor | Country of Origin | Estimated Sector Revenues ($ million) | Market Share (%) |
|------|--------|-------------------|-------------------------------------|------------------|
| 1 | IBM | US | 4,190 | 36 |
| 2 | Microsoft | US | 800 | 7 |
| 3 | Digital | US | 660 | 6 |
| 4 | Siemens-Nixdorf | Germany | 520 | 4 |
| 5 | Novell | US | 415 | 4 |
| 6 | Computer Associates | US | 385 | 4 |
| 7 | Oracle | US | 345 | 3 |
| 8 | Bull | France | 320 | 3 |
| 9 | ICL (Fujitsu) | UK | 315 | 3 |
| 10 | Hewlett-Packard | US | 255 | 2 |
| | Total Listed | | 8,205 | 70 |
| | Total Market | | 11,800 | 100 |

*Source: INPUT*

Exhibit B-2

## Leading Vendors, Applications Software Products Europe, 1993

| Rank | Vendor | Country of Origin | Estimated Sector Revenues ($ million) | Market Share (%) |
|------|--------|-------------------|----------------------------------------|------------------|
| 1 | IBM | US | 590 | 6 |
| 2 | Microsoft | US | 555 | 6 |
| 3 | Lotus | US | 295 | 3 |
| 5= | Computer Associates | US | 285 | 3 |
| 5= | SAP | Germany | 285 | 3 |
| 6 | WordPerfect | US | 240 | 3 |
| 7 | Siemens-Nixdorf | Germany | 185 | 2 |
| 8 | ICL (Fujitsu) | UK | 175 | 2 |
| 9 | Olivetti | Italy | 135 | 2 |
| 10 | ICG | France | 120 | 1 |
| | Total Listed | | 2,865 | 31 |
| | Total Market | | 9,300 | 100 |

*Source: INPUT*

# B
# All Vendors — Software Product Support, Europe 1993

Exhibits B-3 and B-4 show the estimated 1993 software support revenues which relate to systems software product and applications software product respectively.

Exhibit B-5 provides an overall summary ranking of total software product support.

*(Note: IBM is excluded from these rankings, since its support revenues are a "captive" element of software product license fees).*

Exhibit B-3

## Leading Vendors, System Software Product Support
## Europe, 1993

| Rank | Vendor | Country of Origin | Estimated Sector Revenues ($ million) | Market Share (%) |
|------|--------|-------------------|----------------------------------------|------------------|
| 1 | Digital | US | 385 | 25 |
| 2 | Siemens-Nixdorf | Germany | 165 | 11 |
| 3 | Oracle | US | 95 | 6 |
| 4 | ICL (Fujitsu) | UK | 90 | 6 |
| 5 | Computer Associates | US | 75 | 5 |
| 6 | Hewlett-Packard | US | 65 | 4 |
| 7 | Bull | France | 60 | 4 |
| 8 | Unisys | US | 50 | 3 |
| 9 | ComputerVision | US | 45 | 3 |
| 10 | Wang | US | 35 | 2 |
| | Total Listed | | 1,065 | 70 |
| | Total Market | | 1,520 | 100 |

Source: INPUT

Note: "captive" support element of IBM software product license fees excluded from both rankings and total market but estimated at $840 million.

Exhibit B-4

## Leading Vendors, Applications Software Product Support Europe, 1993

| Rank | Vendor | Country of Origin | Estimated Sector Revenues ($ million) | Market Share (%) |
|------|--------|-------------------|---------------------------------------|------------------|
| 1= | Computer Associates | US | 70 | 6 |
| 1= | SAP | Germany | 70 | 6 |
| 3= | Siemens-Nixdorf | Germany | 35 | 3 |
| 3= | ICL (Fujitsu) | UK | 35 | 3 |
| 5 | ICG | France | 30 | 3 |
| 6= | Olivetti | Italy | 25 | 2 |
| 6= | GSI | France | 25 | 2 |
| 6= | AT&T | US | 25 | 2 |
| 6= | ACT Group | UK | 25 | 2 |
| 10 | Dun & Bradstreet | US | 20 | 2 |
| | Total Listed | | 360 | 30 |
| | Total Market | | 1,200 | 100 |

Source: INPUT

Note: "captive" support element of IBM software product license fees excluded from both rankings and total market but estimated at $120 million.

Exhibit B-5

## Leading Vendors, Total Software Product Support Europe, 1993

| Rank | Vendor | Country of Origin | Estimated Sector Revenues ($ million) | Market Share (%) |
|---|---|---|---|---|
| 1 | Digital | US | 395 | 15 |
| 2 | Siemens-Nixdorf | Germany | 200 | 7 |
| 3 | Computer Associates | US | 145 | 5 |
| 4 | ICL (Fujitsu) | UK | 125 | 5 |
| 5 | Oracle | US | 105 | 4 |
| 6= | SAP | Germany | 70 | 3 |
| 6= | Hewlett-Packard | US | 70 | 3 |
| 8 | Bull | France | 65 | 2 |
| 9 | Unisys | US | 60 | 2 |
| 10 | AT&T | US | 50 | 2 |
| | Total Listed | | 1,285 | 47 |
| | Total Market | | 2,720 | 100 |

*Source: INPUT*

Note: "captive" support element of IBM software product license fees excluded from both rankings and total market but estimated at $960 million.

# C
# Software Product Vendors (ISVs) — Software Product Support, Europe 1993

Exhibit B-6

## Leading ISV's, System Software Product Support Europe, 1993

| Rank | Vendor | Country of Origin | Estimated Sector Revenues ($ million) | Market Share (%) |
|------|--------|-------------------|---------------------------------------|------------------|
| 1 | Oracle | US | 95 | 6 |
| 2 | Computer Associates | US | 75 | 5 |
| 3 | ASK | US | 22 | 1 |
| 4 | Borland International | US | 10 | 1 |
| 5 | Informix | US | 6 | <1 |
| | Top 5 | | 208 | 14 |
| | Total Market | | 1,520 | 100 |

Source: INPUT

Exhibit B-7

## Leading ISV's, Applications Software Product Support Europe, 1993

| Rank | Vendor | Country of Origin | Estimated Sector Revenues ($ million) | Market Share (%) |
|------|--------|-------------------|---------------------------------------|------------------|
| 1 | Computer Associates | US | 70 | 6 |
| 2= | SAP | Germany | 35 | 3 |
| 2= | ICG | France | 30 | 3 |
| 4 | Dun & Bradstreet | US | 20 | 2 |
| 5 | Reuters | UK | 12 | 1 |
| | Top 5 | | 167 | 14 |
| | Total Market | | 1,200 | 100 |

Source: INPUT

Note: dominated by data centre software vendors as PC applications support revenues only begin in 1994.

# D

# Hardware Vendors - Software Product Support, Europe 1993

Exhibit B-8

## Leading Hardware Vendors, System Software Product Support Europe, 1993

| Rank | Vendor | Country of Origin | Estimated Sector Revenues ($ million) | Market Share (%) |
|------|--------|-------------------|---------------------------------------|------------------|
| 1 | Digital | US | 385 | 25 |
| 2 | Siemens-Nixdorf | Germany | 165 | 11 |
| 3 | ICL (Fujitsu) | UK | 90 | 6 |
| 4 | Hewlett-Packard | US | 65 | 4 |
| 5 | Bull | France | 60 | 4 |
| Top 5 | | | 765 | 50 |
| Total Market | | | 1,520 | 100 |

Source: INPUT

Note: "captive" support element of IBM software product license fees excluded from both rankings and total market but estimated at $840 million.

Exhibit B-9

## Leading Hardware Vendors, Applications Software Product Support Europe, 1993

| Rank | Vendor | Country of Origin | Estimated Sector Revenues ($ million) | Market Share (%) |
|------|--------|-------------------|---------------------------------------|------------------|
| 1 = | Siemens-Nixdorf | Germany | 35 | 3 |
| 1 = | ICL (Fujitsu) | UK | 35 | 3 |
| 3 | Olivetti | Italy | 25 | 2 |
| 4 = | Digital | US | 8 | 1 |
| 4 = | Unisys | US | 8 | 1 |
| Top 5 | | | 111 | 9 |
| Total Market | | | 1,200 | 100 |

Source: INPUT

Note: "captive" support element of IBM software product license fees excluded from both rankings and total market but estimated at $120 million.

# E
# Services Vendors - Software Product Support, Europe 1993

Exhibit B-10

## Leading Services Vendors, System Software Product Support Europe, 1993

| Rank | Vendor | Country of Origin | Estimated Sector Revenues ($ million) | Market Share (%) |
|------|--------|-------------------|---------------------------------------|------------------|
| 1= | AT&T | US | 25 | 2 |
| 1= | Getronics | Netherlands | 25 | 2 |
| 3 | CGS | France | 15 | 1 |
| 4 | CGI | France | 10 | 1 |
| 5= | Andersen Consulting | US | 5 | <1 |
| 5= | Raët | Netherlands | 5 | <1 |
| | Top 5 | | 80 | 5 |
| | Total Market | | 1,520 | 100 |

Source: INPUT

Exhibit B-11

## Leading Services Vendors, Applications Software Product Support Europe, 1993

| Rank | Vendor | Country of Origin | Estimated Sector Revenues ($ million) | Market Share (%) |
|------|--------|-------------------|---------------------------------------|------------------|
| 1= | GSI | France | 25 | 2 |
| 1= | AT&T | US | 25 | 2 |
| 1= | ACT | UK | 25 | 2 |
| 4 | CGS | France | 14 | 1 |
| 5 | Axime | France | 12 | 1 |
| | Top 5 | | 101 | 8 |
| | Total Market | | 1,200 | 100 |

Source: INPUT

Blank

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**C**
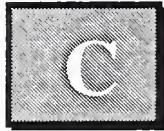
# Economic Assumptions

There follow some notes on the methodology INPUT uses in making forecasts and judging 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 500 interviews with prominent software and services vendors across Europe. This research assesses their attributable revenues in each country by delivery mode 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. In 1993, for example, INPUT produced reports on over 20 different software and services market sectors.

- Additionally, INPUT maintains an extensive library and database relating to the information services industry. This includes INPUT's customer services programme data and the 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 operation is performed 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, revised  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. For example, INPUT supplied an economic model to a client who is a market leader on the potential effect of rising commodity prices on forecast growth rates of software and services.

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 used for 1994 studies.

## A
## European Exchange Rates

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

Exhibit C-1

## US Dollar and ECU Exchange Rates 1994

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

*Source: Financial Times January 1994*

## B

## European Inflation Rates

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

Exhibit C-2

## Inflation Assumptions 1993 and 1994

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

*Source: OECD December 1993*

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

Exhibit C-3

# GDP Growth Rate Assumptions

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

*Source: OECD 1994*

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