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European Professional Services

Refocus for the 1990s

Market Analysis Programme -- Europe

OCTOBER 1993

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Abstract

This study puts into perspective the way service opportunities are changing at each stage through the life of typical software projects. Professional services vendors need to refocus their offerings to exploit these changes in demand. The adoption of client/server and object technologies will make such changes even more necessary for vendors who wish to maximise customer revenues in the face of fierce competition.

Market demand for service vendor skills is changing with the growth in end-user purchasing of information systems and applications software. The emphasis for many vendors is moving away from software design and development. In many cases the skills offered are moving up the value chain towards business process engineering rather than software. In other cases, the skills are moving down towards application management and maintenance of older software.

The study identifies the size of the market opportunities involved and predicts the pace at which these changes are likely to occur.

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European Professional Services Refocus for the 1990s

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I Introduction

This report is produced as one of a series of executive perspectives in INPUT's Software and Services Planning Service for the computer software and services industry in Europe.

The report is designed to assist vendors in assessing market opportunities and strategies resulting from changing software technologies and growing end-user purchasing of solutions.

A Scope and Methodology

This report reviews and analyses the changing market forces highlighted by INPUT's pan-European vendor and user research and resulting forecasts for software and professional services.

The objective is to provide insight into the way professional services vendors and IS departments are restructuring themselves in order to respond to new user demands.

To this end, INPUT has conducted research across Europe among the top 100 leading vendors of software and services. These interviews were based on a common questionnaire designed and tested specially to establish the key factors influencing the changing mix of products and services offered by these vendors.

Topics covered included:

- Relative growth rates for different professional services along the software project life cycle
- Changes to the major platforms on which software products and services are being delivered
- Key new market opportunities being pursued

- Software and service revenues by country and industry

Some of the key findings were then validated against user research on IS budget expectations.

Additionally, INPUT's extensive library and database of research and other information relating to the software and services industry were used.

B
Definitions

This report identifies spending trends in Europe, France, Germany, the United Kingdom and Italy for:

- Professional services
- Software products
- In-house IS staff

The services included within the term *professional services* in this report encompass all the professional services subsectors within INPUT's standard delivery mode definitions:

- IS consulting
- Custom software development and maintenance
- Applications management
- Systems integration professional services
- Systems operations professional services
- Turnkey systems professional services

Similarly, the term *software products* refers to the total spending on software product delivery modes (including their bundled support), whether sold separately or within a system or project. The spending forecasts combine systems software and applications software from these subsectors:

- Systems integration
- Turnkey systems
- Systems software products
- Applications software products

The term *in-house IS staff* refers to the internal spending on IS staff normally employed within an IS department, excluding overhead such as office facilities, computers and communications.

C
Report Structure

The remaining chapters of this report are structured as follows:

- Chapter II is an executive overview offering a concise summary of the conclusions of the report.
- Chapter III describes INPUT's analysis of the trend away from in-house software development towards greater use of software products and integration services. It includes market forecasts.
- Chapter IV highlights how IS departments are also changing if they are to survive in the long term and support their own business success.
- Chapter V recommends the actions professional services vendors take to reposition their offerings to meet the challenge of new client/server technologies and greater end-user IT purchasing.

D
Other Relevant INPUT Reports

- *CASE: Down or Downsized?* March 1993
- *Client/Server: The Impact on Systems Integration—Europe* (October 1993)
- *Database Migration—An Executive Perspective* (June 1993)
- *European Market for Software and Services, 1992-1997* (November 1992)
- *Application Management Opportunities—Europe* (February 1993)
- *Operational Software Support—Europe* (1991)

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II Executive Overview

A
Rapid Solutions and End-User Support—Service Focus for the 1990s

Demand for professional services from the IT industry is shifting away from the traditional custom software development role to focus on the delivery of rapid solutions and wide-ranging support for end users.

The strong emergence of client/server computing is encouraging end-user management to make more IS purchasing decisions. These business managers seek low-cost and rapid information system solutions. They prefer custom solutions that integrate a number of standard applications packages.

In-house IS departments have limited resources for these new demands. Already in-house spending on new applications is less than the spending on purchased solutions. INPUT estimates that $40 billion will be spent on software products and professional services in Europe during 1993. In contrast, around $30 billion will be spent on development projects using in-house staff.

End-user demands and the opportunities offered by new technology are forcing IS departments to behave more professionally and more cost-effectively. They will adopt new rapid application tools and techniques. They will sign service level agreements with their users. In effect, their users are demanding that they act as service vendors. If they cannot offer a competitive service to the users, they may not survive much longer.

The same is true for the vendor community. Vendors will find themselves often dealing with the IS department as competitors rather than customers. In response, professional services vendors must reposition their services to focus on:

- Support and implementation services directly for end-user departments
- Rapid application development and integration services

B

In-House Development Declines in Favour of External Purchasing

Disillusion with the value of past spending on IT has been heightened by the tough economic climate in Europe. The IT industry is seen to have failed to deliver the benefits promised. The once healthy growth of professional services in the computer business has stopped in its tracks. CAP Gemini Sogeti, the largest such vendor in Europe, saw its first-ever loss, and revenues fell 17% in 1992 in France, its home market.

Professional services vendors and IT departments face similar challenges. Their staple activity—applications software development—is being replaced by requirements for other skills as users demand faster results and direct business benefits.

The focus of IT requirements is now firmly on meeting end-user business needs, including results in short time scales. As a result, services demand is polarising towards managing the "old" better and implementing the "new" faster:

- Managing existing systems and user demands more cost effectively
- Building new business solutions more rapidly

This is creating high-growth opportunities in key service areas such as application management and systems integration, as well as stimulating the market for software products.

These fundamental changes are presenting a major challenge to professional services vendors as new opportunities emerge outside the traditional business of custom software development. The key market forces are summarised in Exhibit II-1.

EXHIBIT II-1

Key Software and Services Market Forces

- End-user purchasing power is rising
- Client/server architectures require new skills
- Legacy systems need good management
- Vendors get more competitive

End-user managers are learning that they can get faster and more cost-effective results by driving IS purchasing decisions themselves. Consequently, vendors need to perfect their skills in selling the business benefits of their solutions rather than technology.

Client/server architectures are introducing new technology that is complex for those with traditional programming skills to assimilate. The challenge for vendors is to invest sufficient time to stay abreast of the latest technology and gain competitive edge.

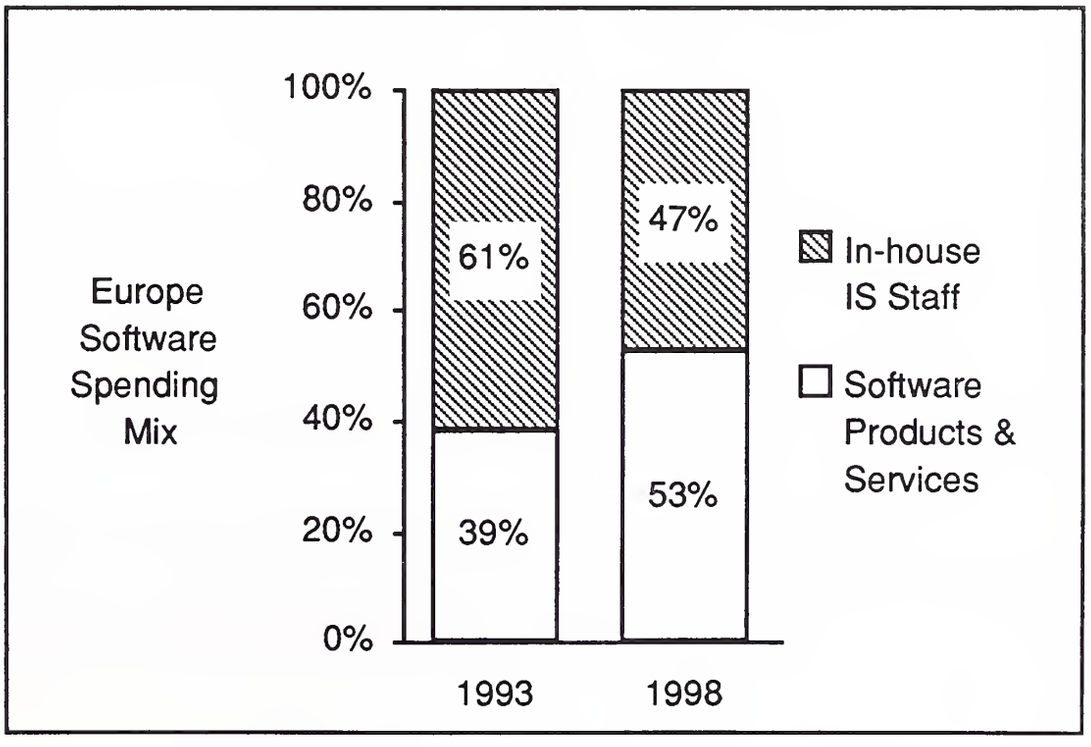
The ongoing support of older legacy software systems typically uses up 65% of the available people in an IS department. This compares to a far lower percentage of staff active on such work in a professional services company. Vendors who can lower these costs for users will find a very large market opportunity.

Lack of overall growth in spending on IS is resulting in a much more competitive market than the independent vendors have experienced in Europe in the past.

As the focus for IS investment moves to business benefits and financial returns, the ad hoc management of internal IS functions will give way to tighter financial controls and more use of external resources—both products and services—as shown in the changing mix of spending forecast in Exhibit II-2.

EXHIBIT II-2

Software and Services Spending Changes, Europe, 1993-1998



C

End-User Purchasing Power Changes the Role of IS Departments

The software engineering skills of many IS departments have been developed over many years. Innovations in information engineering and CASE have led to new working practices for both staff and management. But client/server technology and end-user purchasing raise questions as to how appropriate these working practices are to many fast-moving, distributed businesses.

INPUT's research has already identified some IS departments that are becoming more like consultants and technical authorities within their companies, rather than continuing as systems developers or systems managers.

It is not possible to predict one route for IS departments to follow. IS responsibilities will change in a variety of ways. IS management can expect to come under pressure to be:

- Devolved to other business units
- Outsourced to vendors
- Downsized with budget cuts and lower cost systems
- More productive and better managed
- Focused on service level agreements with users
- Using more packaged software to deliver solutions faster

IS managers face the challenge of turning their departments into the equivalent of an external vendor. They have to either respond to this challenge and manage IS as a business in its own right or they face the threat that their own management may outsource part or all of their function. Exhibit II-3 identifies INPUT's main expectations for IS.

EXHIBIT II-3

Anticipated IS Management Actions

- Agree on service levels with user mgmt.
- Evaluate vendors for client/server skills
- Seek best practices for legacy systems
- Analyse re-engineering of IS departments

User responsibility for IS decisions can be significantly increased by the use of service level agreements. These have become standard practice for many systems operations vendors in establishing what will be supplied, how it will be measured and what it will cost.

End users will have difficulty doing any technical evaluation of vendors. This should be a primary role retained by the IS department.

Software maintenance or the support of operational software is a major millstone for most IS managers. Vendors are now offering operational software support services and should be sought out to establish potential cost savings.

Re-engineering of the IS department should only be carried out with assistance from outside vendors/consultants.

D
Service Vendors Must Reposition to Survive

Independent services vendors also are threatened by the ambitions of equipment vendors. All the major equipment vendors have strong intentions to build up their software and services activities to counter their shrinking hardware margins. Exhibit II-4 summarises INPUT's recommendations for services vendors seeking new business opportunities in Europe.

EXHIBIT II-4

Recommended Vendor Actions

- Change marketing mix to reach users
- Rapidly re-skill for client/server
- Introduce legacy-based services/products
- Support re-engineering of IS departments

Most vendors have so far taken a low-key approach to their marketing activities. With users taking the lead role in purchase decisions, it will become essential for vendors to initiate sophisticated marketing techniques to raise awareness and retain customer loyalty.

Client/server is not just a technical buzz phrase. It is a way of delivering solutions that match the way customers run their businesses—distributed across geographic and functional boundaries. As project timescales shorten, vendors with a strong track record in implementing rapidly developed solutions will gain competitive edge. Skills—and, more importantly, experience—are an essential to future success in professional services.

There is a huge latent opportunity in helping IS departments control and manage the ongoing use of their legacy software systems and the service they deliver to end users. Now that there is no longer an unlimited demand for new custom developments, vendors must turn their attention to supporting customers with new services in this area.

Although there is much activity surrounding business process re-engineering and the resulting IS systems work, there is less recognition that IS departments themselves are often undergoing a complete re-evaluation of their business processes. Vendors who provide supporting products, methodologies or services in this area will find few established competitors.

The pace of change facing both services vendors and IS departments seems unlikely to slow. The question will be who can react to the changes identified here well enough and fast enough to survive and prosper during the rest of the 1990s.

III In-House Development Declines in Favour of External Purchasing

The purchasing of software solutions, either in the form of an application package or as a custom development project, is now more popular than the development of unique solutions using internal IS staff. In 1993, $40 billion will be spent in Europe buying software solutions, compared to around $30 billion spent on in-house new application development.

The cost of skilled IS development staff increases year by year. Productivity improvements through the use of new software tools and working practices have done little to counter the rising cost of employing qualified staff. In part, this is due to the cost of getting staff experienced in the use of new technology.

Advances in software technology not only offer improved development productivity, but have also resulted in a rich variety of flexible application packages. The use of ready-made software products is increasingly attractive as an alternative to in-house development. The opportunity to place a development contract at a fixed price is also financially prudent.

This chapter reviews the changing priorities now being assigned to investment in the various stages of the software life cycle and the effects of these trends on the market forecasts for Europe, France, Germany, the United Kingdom and Italy.

A
Software Life Cycle Priorities Change

During the 1980s, professional services vendors—such as Ploenzke in Germany, Finsiel in Italy, CAP Gemini Sogeti in France and Logica in the U.K.—rapidly built their businesses. Primarily, they developed custom-designed software for their customers. Alternatively, they offered staff with these skills to work within the customer's own project team.

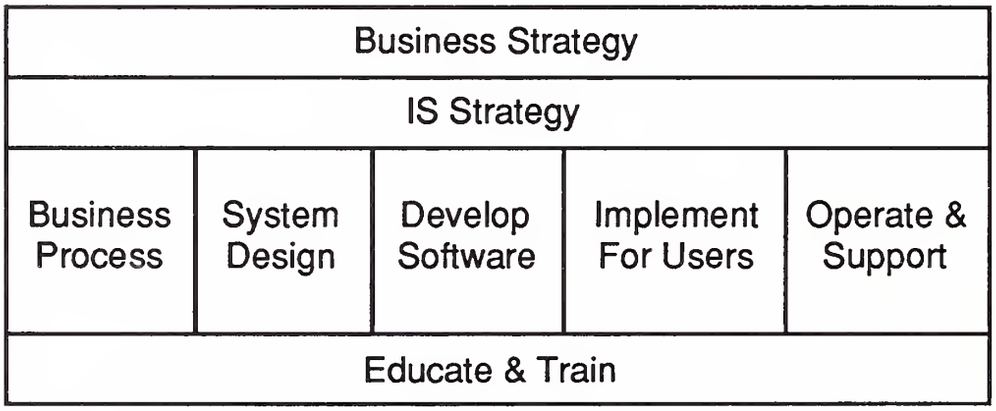
Most of the project effort and time was centred on specifying, writing and testing software. In the context of the whole life cycle of a project, as shown in Exhibit III-1, the focus was on software development.

Today the profile of such vendors is changing as:

- End-user customers request business process solutions rather than technical IS specifications
- New software technology and methodologies improve programmer productivity
- More resources go into the other stages of the life cycle
- Integration of standard software products replaces much new development
- IS management seeks external support for the legacy of old business-critical software

EXHIBIT III-1

Simplified Software Life Cycle Structure



The life cycle diagram shows the relationship between the key stages in the life of a software solution. The main trend within this life cycle diagram is that resources are moving away from the central activity of software development as the other elements gain the investment priority they have always deserved.

It is now widely recognised that business strategy and IS strategy must be closely related if IS investment is to enhance the success of the business. Both of these strategies influence projects throughout their life cycle. Clear strategies lead directly to an analysis of the business processes required to implement the strategy.

1. Business Process Re-engineering—Delivering Results

Pioneered by Computer Science Corp.'s Index Group, the concept of business process re-engineering has now been taken up by many business managers and consultancies. Business process re-engineering is a recognition that many IT systems have locked the business they serve in the past. Automation of old business processes has led to an inability to change. Even worse, many IT systems did not provide a business solution, they automated the business problem—the old business process.

Business process re-engineering sets out to achieve the most suitable working practices for the business to be successful—using IT to maximum advantage. The focus is on achieving business results. It justifies software projects on the contribution they will make to the business, not just on the efficiency with which it can support existing operations.

2. Software Solutions—Productivity and Integration

The stages of system design, software development and implementation are those that benefit most from the improvements in software engineering, tools and methodologies. Rapid application techniques and development environments have enabled timescales to be shortened and productivity to increase. A range of middleware products that support the integration of a variety of architectures without the development of project-specific custom software is now emerging. In particular, these give cross-system access to different database management systems.

In the software life cycle, education and training also span all stages. Training plays an essential role in re-orienting staff with well-developed software development skills into the areas of new technology and integration skills.

3. Operation and Support—Major Opportunity for Vendors

Large IS departments typically spend 60% to 70% of their IS staff time on the support of operational software. The remainder of staff time is spent on "new" developments. The support of operational software—usually termed software maintenance by IS managers—covers such activities as:

- Help desk
- Fault diagnosis
- Modification control
- Work-arounds and bug-fixing
- Minor enhancements/changes
- Housekeeping
- Platform upgrades
- Configuration control

Across Europe, nearly $60 billion will be spent on operational/legacy software support by in-house IS departments in 1993. Less than one percent of this sum is spent with external vendors offering third-party software support and maintenance.

French professional services vendors lead Europe in attacking this market opportunity. For example Unilog, which has a well established third-party software maintenance business in France, has formed a joint venture with Ploenzke in Germany to launch an application maintenance service.

B

Software Spending in Europe—More Products and Services

The pattern of software spending is changing as end users demand faster implementation timescales, lower costs and greater flexibility to change. The results are significant for:

- In-house IS staff—their core role in software development, support and operations is changing to systems integration, consulting and setting IS standards.
- Professional services vendors—their focus is moving to business processes, integration of networked products, and systems operations and applications management.
- Software product vendors—traditional mainframe software vendors are scaling down to client/server and PC software vendors are scaling up to workgroup systems.

European spending on software products and professional services is forecast to grow at 11% and 6%, respectively, as shown in Exhibit III-2.

EXHIBIT III-2

Software and Services Spending
Europe, 1993-1998

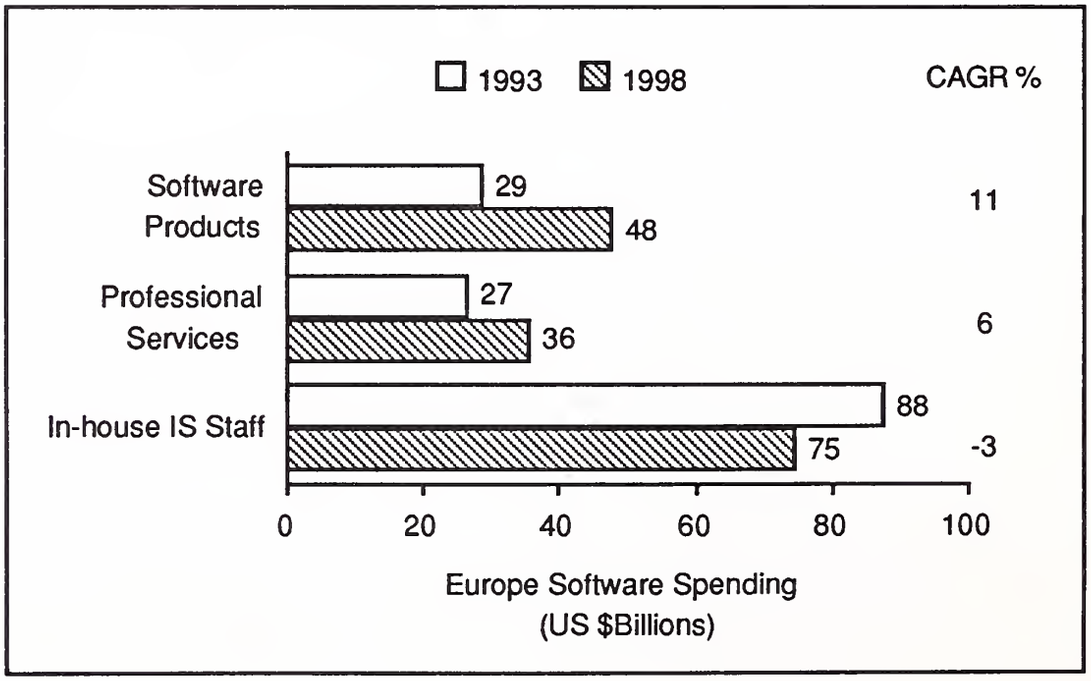
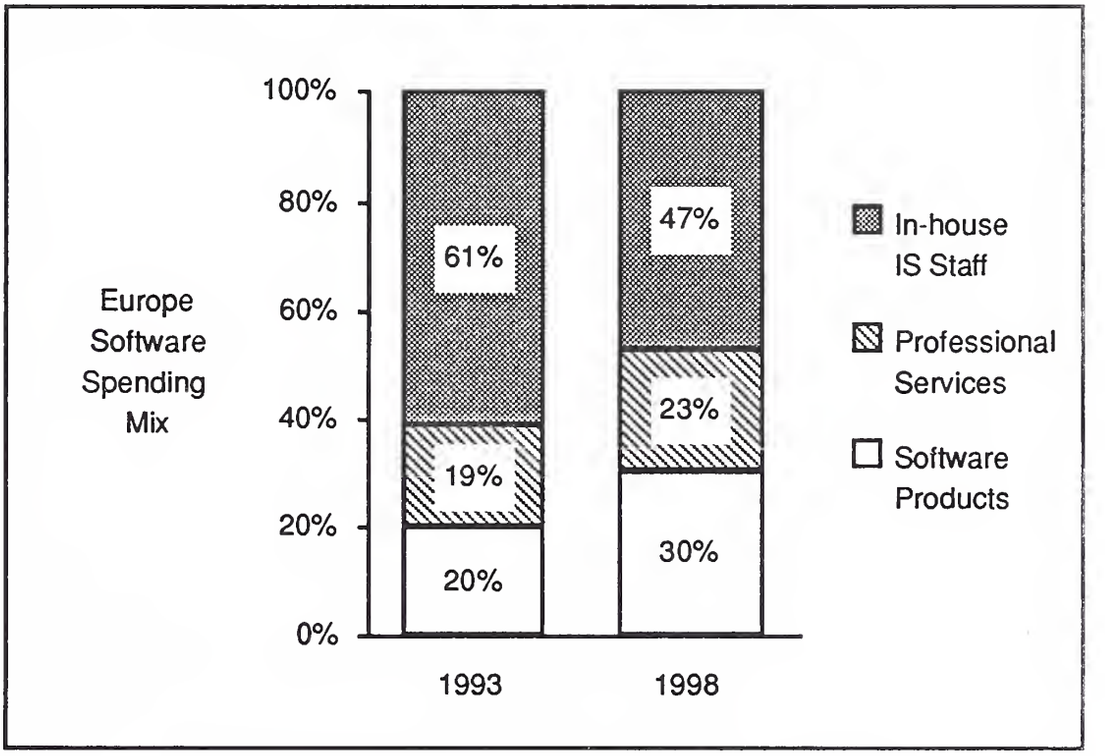


Exhibit III-3 shows how the spending mix will change as solutions purchased from vendors replace some of the in-house budget for IS staff in 1998.

EXHIBIT III-3

Software and Services Spending Mix
Europe, 1993-1998



1. In-House IS Staff—Productivity Improvements and Downsizing

The restructuring of many IS departments is being stimulated by the user search for return on investment and business benefits.

Old working practices in IS are being constantly questioned. Running costs and productivity are analysed. Typical, but by no means universal, actions include:

- Consolidation of data centres to fewer sites
- Downsizing of systems for new applications
- Applying new management methods to support of old software
- Outsourcing computer and network system operations
- Introducing software quality standards
- Retraining staff in software engineering practices

Businesses are adopting more organic rather than hierarchical structures. The formation of entrepreneurial or autonomous customer-facing business units is the most common example. The IS needs of many of these units are tending to be served by their own IS team rather than by some centrally managed resource. The IS department is becoming distributed and downsized.

2. Professional Services Focus Moves to Client/Server and Systems Integration

In many ways, professional services vendors are providing a professional lead to the larger IS departments. Because they have always had to compete for business, they must react to market changes. This is even more important since forecast market growth for professional services is at an all-time low of 6% CAGR to 1998. Only three years ago, the CAGR forecast was 20%. Keys to continued success are:

- Technology focus on open systems and networked systems
- Business focus on systems integration and/or systems operations

The technology focus for professional services is moving rapidly towards client/server architectures. On the horizon are the object technology promises of re-usable software, but for the vast majority of services vendors these are still in the future. The shortage of skills and experience in this area is such that even product vendors like Microsoft are introducing support services, albeit highly priced.

The business focus for professional service vendors requires them to decide upon one or more alternatives to the traditional software development role:

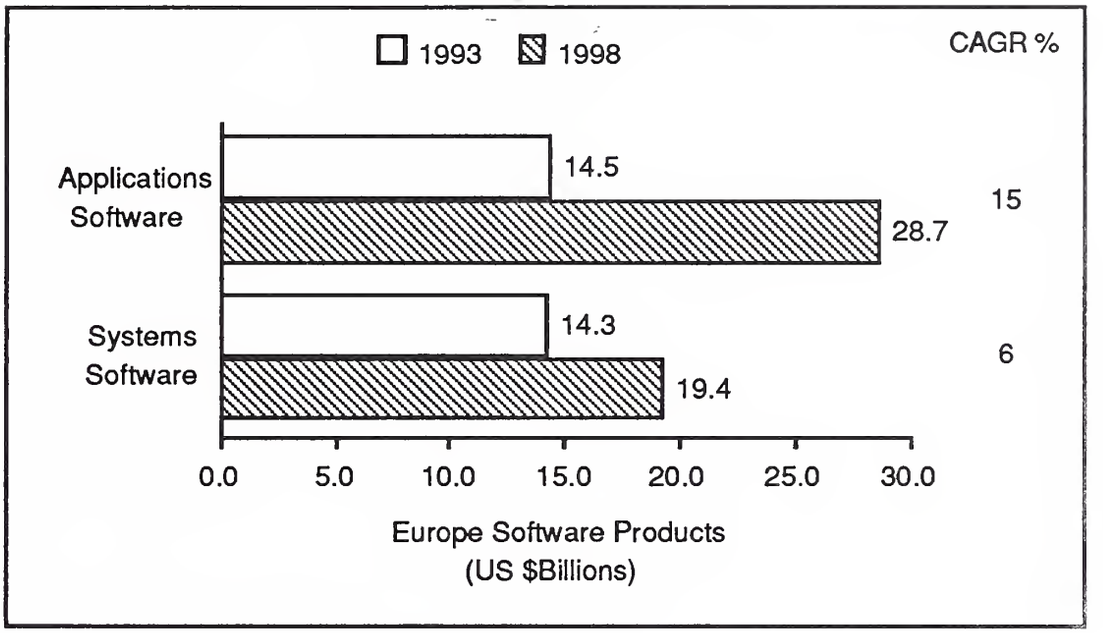
- Business process re-engineering and other IT-related management consulting
- Systems integration and related project management skills based on high standard product content
- Systems operations and application management skills in contracting to replace an in-house IS function

3. Software Products—Value for Money Means Growing Share of Budgets

The market for software products can be considered two delivery modes: applications software products and systems software products. Exhibit III-4 shows how applications will continue to grow in importance as they deliver direct value to users.

EXHIBIT III-4

Software Products Market Europe, 1993-1998

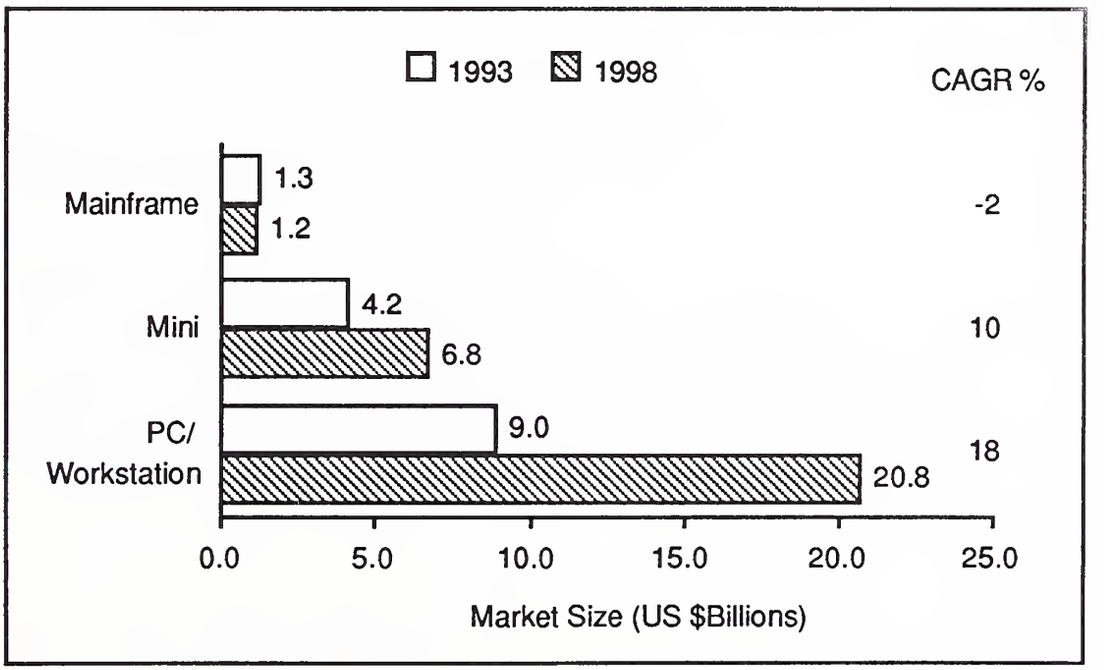


a. Applications Software Products

There will be a slow decay of spending on mainframe applications products as a result of the downsizing trend, as shown in Exhibit III-5.

EXHIBIT III-5

Applications Software Products Market by Platform—Europe



However, this will be more than compensated for by the growth in PC and workstation markets for applications software products. Despite price-cutting competition among the market leaders, software product revenues will continue to flow to the popular brand leaders.

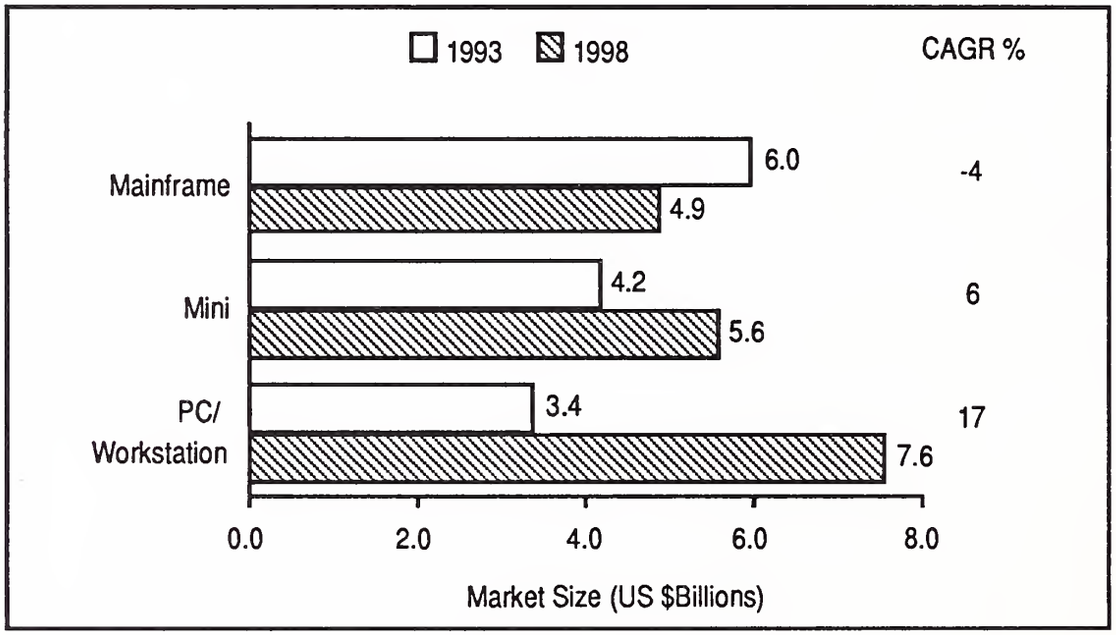
b. Systems Software Products

The picture for systems software products is quite different, as seen in Exhibit III-6. During the 1980s, IBM successfully unbundled its mainframe software and raised its price to compensate for shrinking mainframe hardware prices. As a result, mainframe software dominates the market for systems software at present.

The heavy purchasing of desktop, mobile, workgroup and departmental computers will make PC and workstation systems software replace mainframe systems software as the dominant source of vendors' revenues by 1998.

EXHIBIT III-6

Systems Software Products Market by Platform—Europe



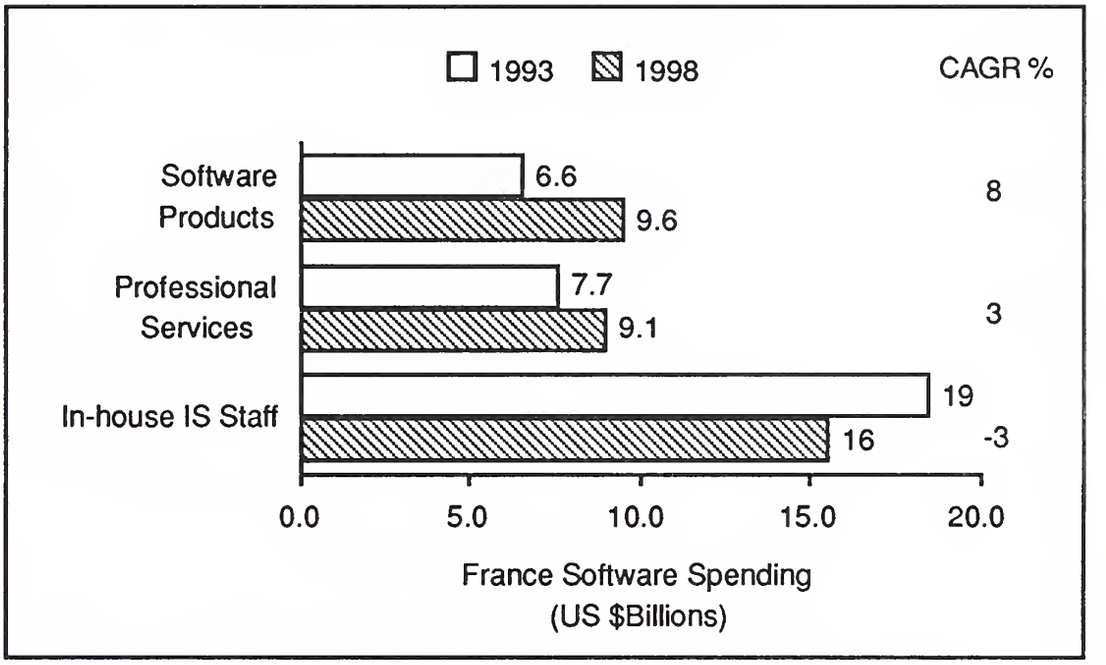
C
Software and Services Spending—France

The professional service market in France is the largest in Europe. The past two decades have seen many large IS departments privatised and become successful market leading vendors—Sligos, for example. Buying in professional services, often in the form of contract labour, became an accepted business practice.

However, recession and cutbacks in IS and defence spending have brought professional services market growth to a halt. The CAGRs given in Exhibit III-7 are well below the averages for Europe given in Exhibit III-2.

EXHIBIT III-7

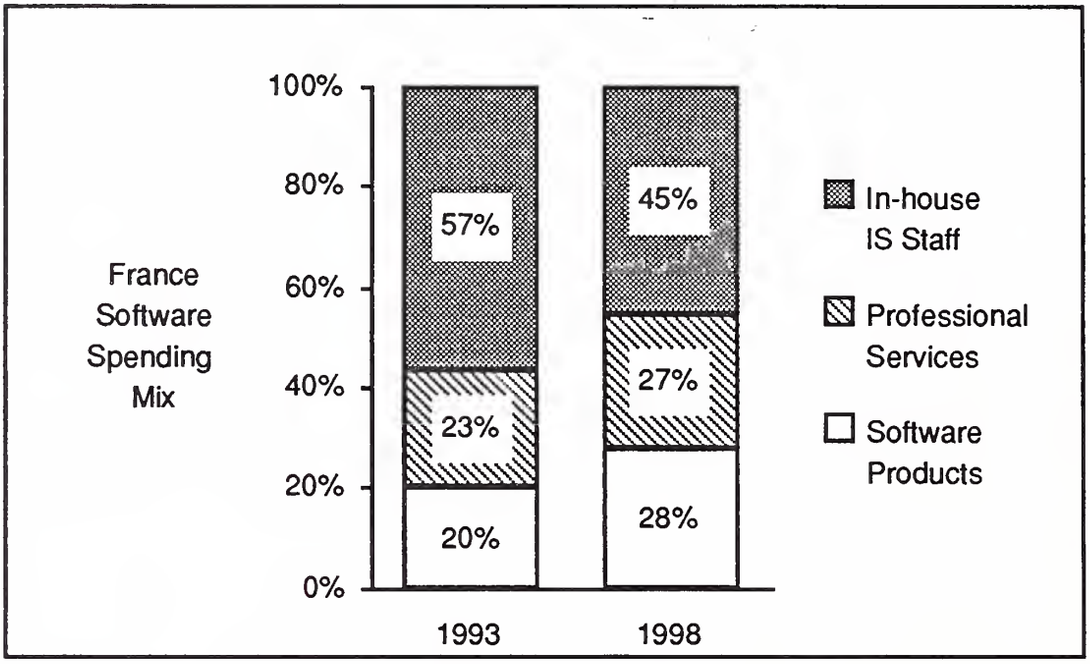
Software and Services Spending
France, 1993-1998



The proportion of software spending that is in-house across Europe is 61%. In France, Exhibit III-8 shows, the figure is 57%—reflecting this long tradition of using external service vendors. Arguments of economics and critical mass will see the in-house proportion decrease another 12% by 1998.

EXHIBIT III-8

Software and Services Spending Mix
France, 1993-1998



Exhibits III-9 to III-11 give the forecasts for the software products market sectors in France for the period 1993 to 1998.

EXHIBIT III-9

Software Products Market
France, 1993-1998

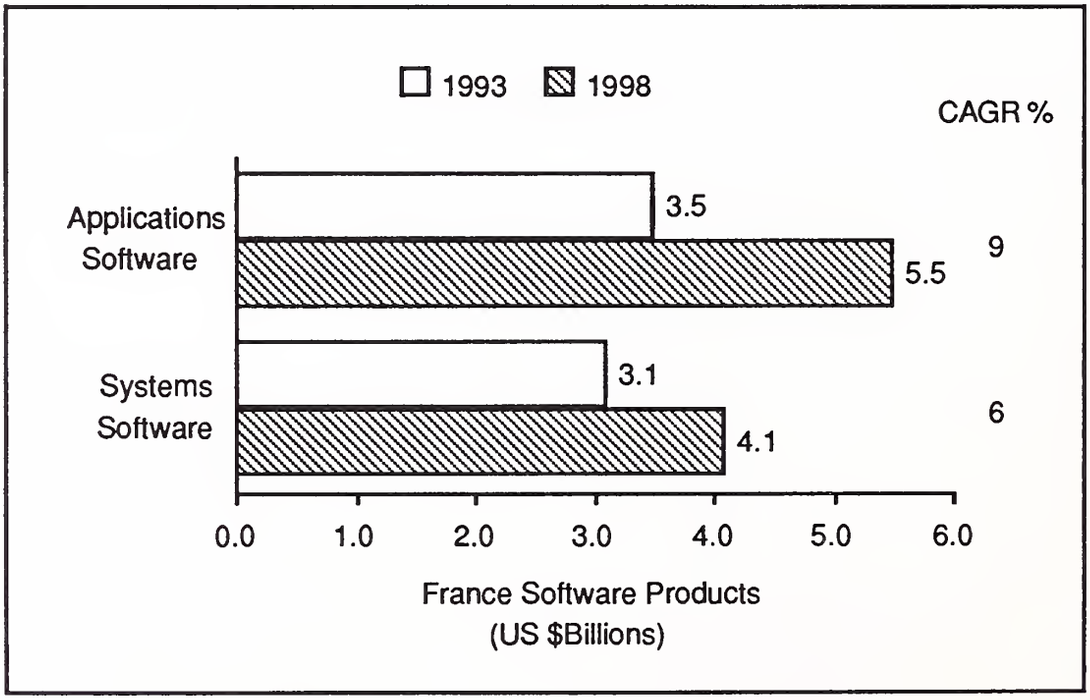


EXHIBIT III-10

Applications Software Products Market by Platform—France

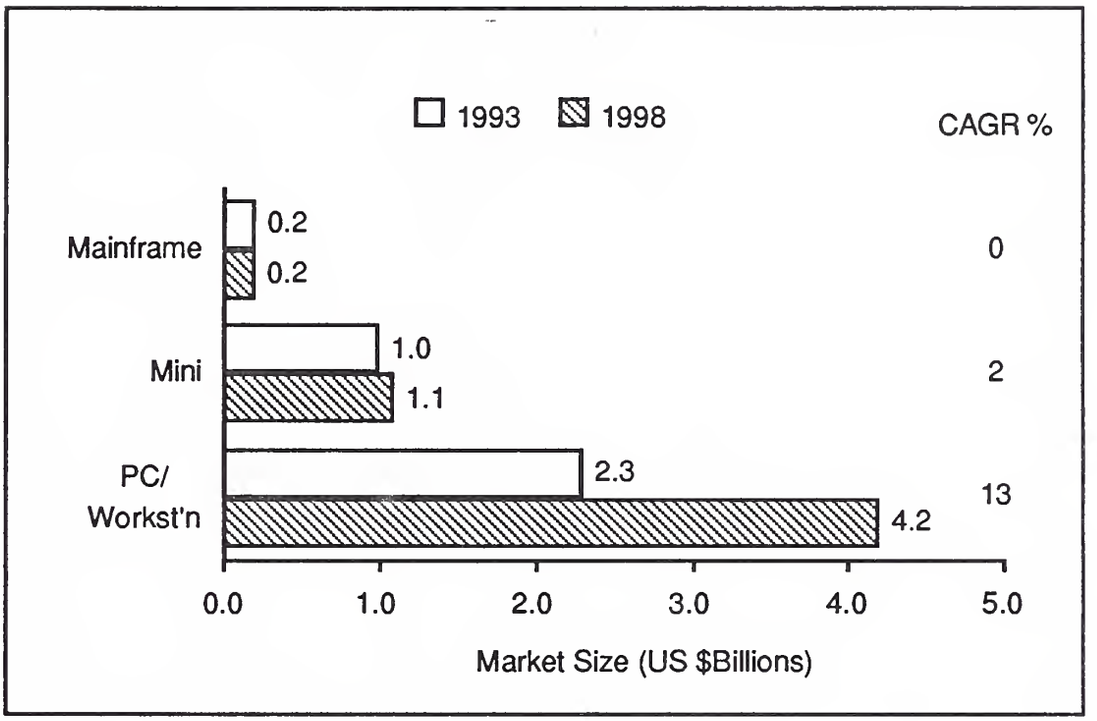
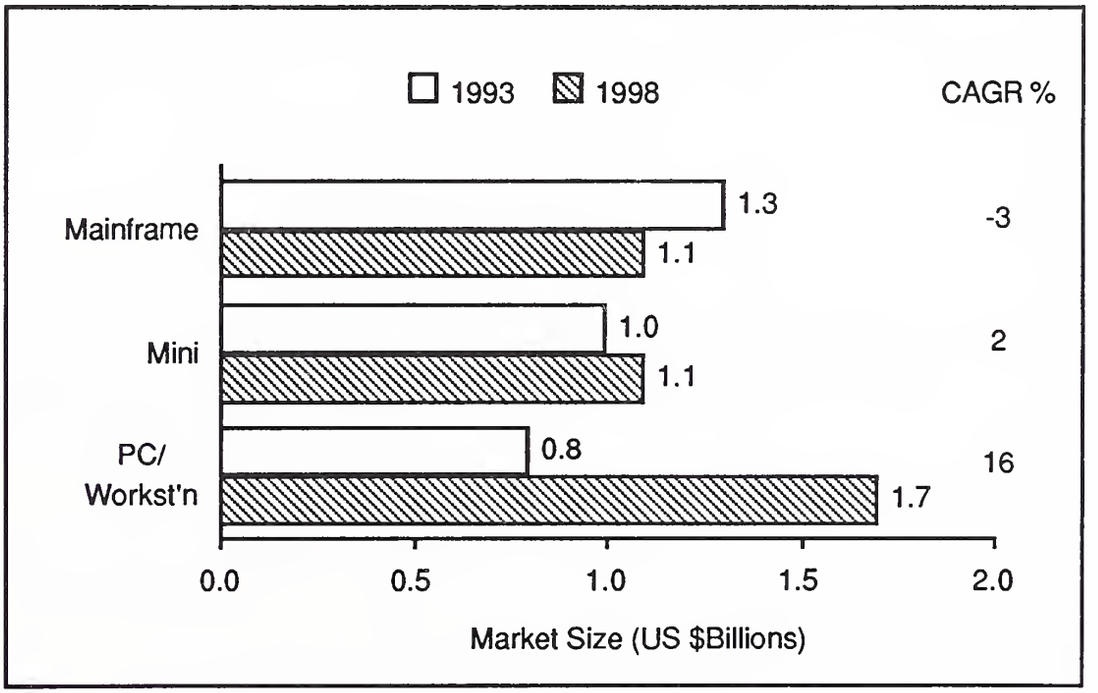


EXHIBIT III-11

Systems Software Products Market by Platform—France



D

Software and Services Spending—Germany

The German market for software and services has unique characteristics. Heavy use of in-house IS department staff for software development is balanced by strong preferences for product-based solutions. As a result, Germany is home to both of Europe's leading software product vendors—SAP and Software AG.

SAP has a highly successful suite of business applications software. Originally mainframe-based and known as R/2, it is now available for UNIX and client/server as R/3.

Software AG is best known for its Natural 4GL and its Adabas database, also originally designed for the mainframe environment, but now embracing client/server architectures.

The use of professional services vendors is relatively underdeveloped in Germany, as illustrated in the market sizes shown in Exhibit III-12. However, the cutbacks induced by the recession that started in mid-1992 will encourage more use of externally purchased resources in the period to 1998.

EXHIBIT III-12

Software and Services Spending
Germany, 1993-1998

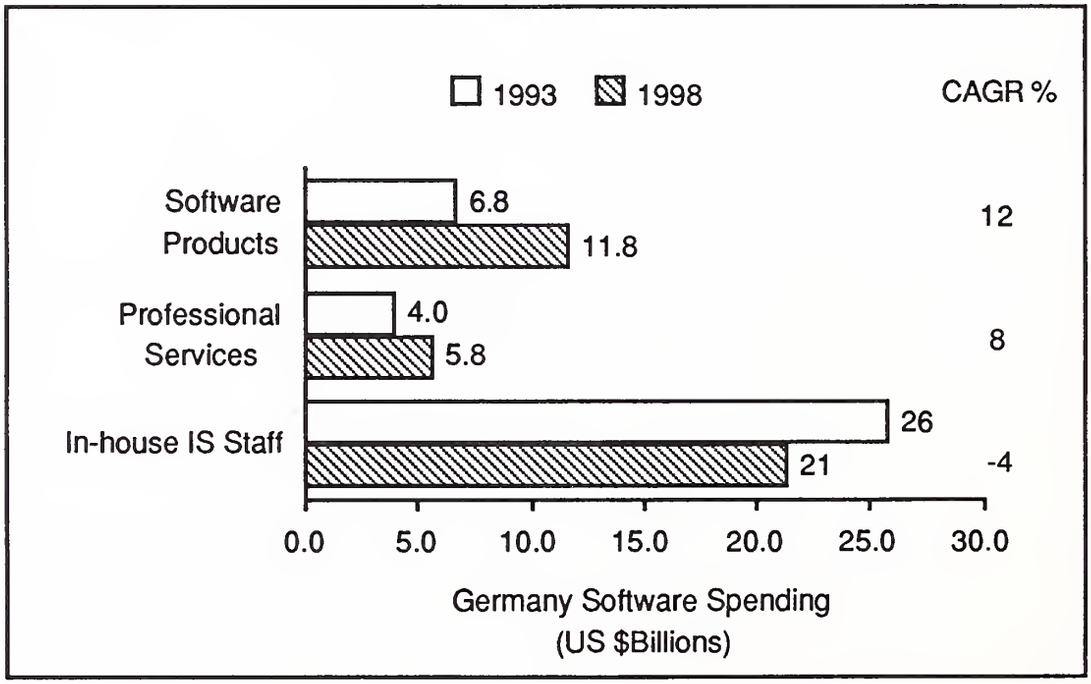
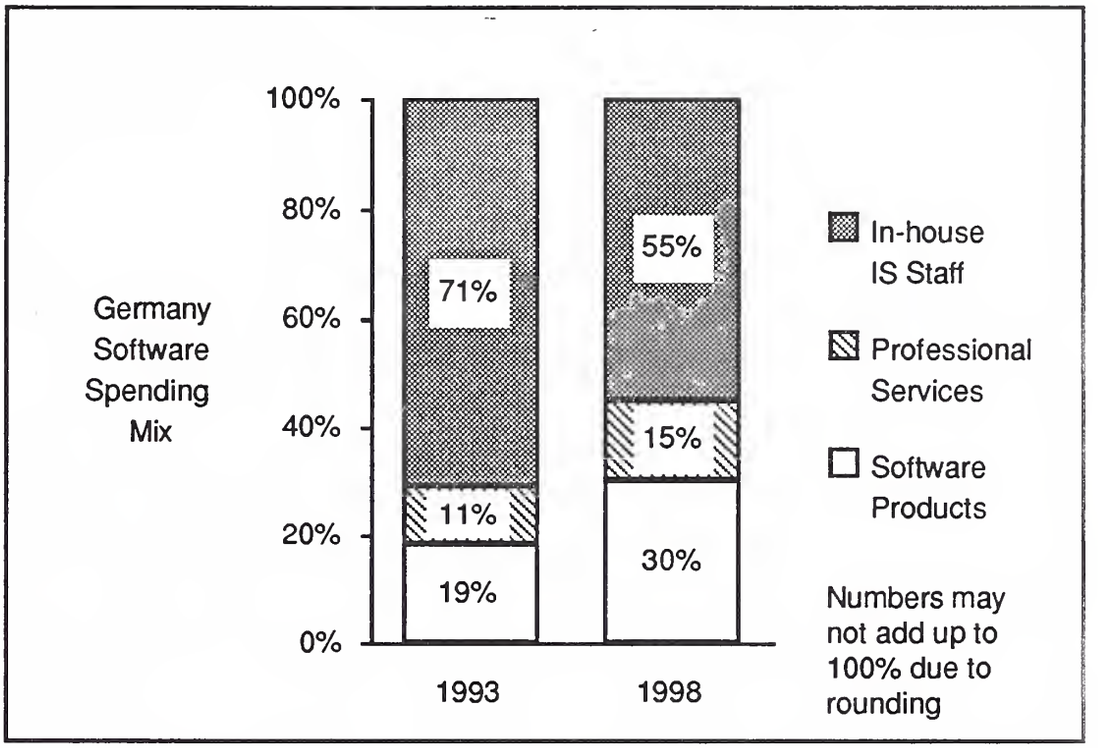


Exhibit III-13 shows the anticipated decline of in-house spending in favour of software products and professional services. Germany has the highest use of in-house staff in Europe.

EXHIBIT III-13

Software and Services Spending Mix Germany, 1993-1998



Exhibits III-14 to III-16 show the detailed forecasts for applications and systems software products in Germany.

EXHIBIT III-14

Software Products Market Germany, 1993-1998

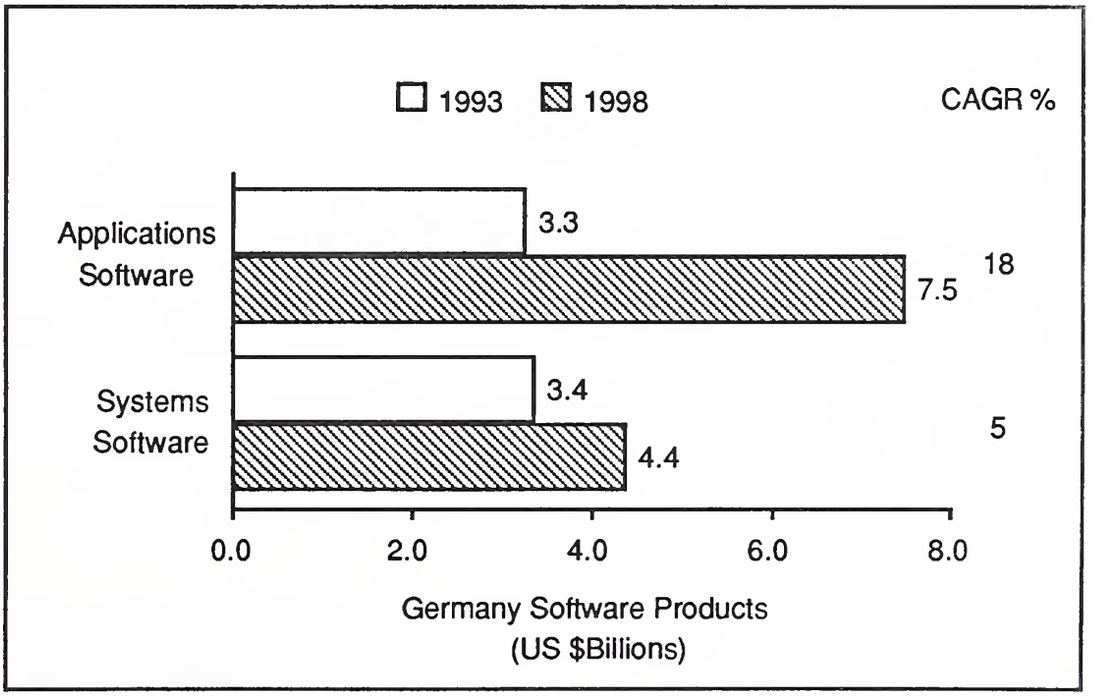


EXHIBIT III-15

Applications Software Products Market by Platform—Germany

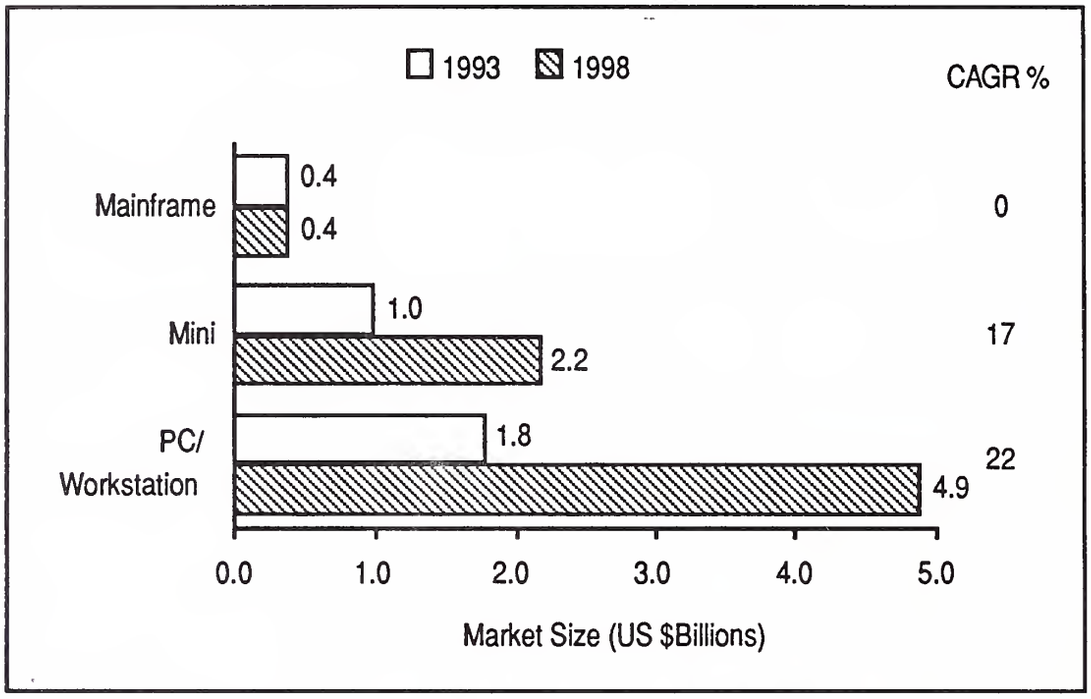
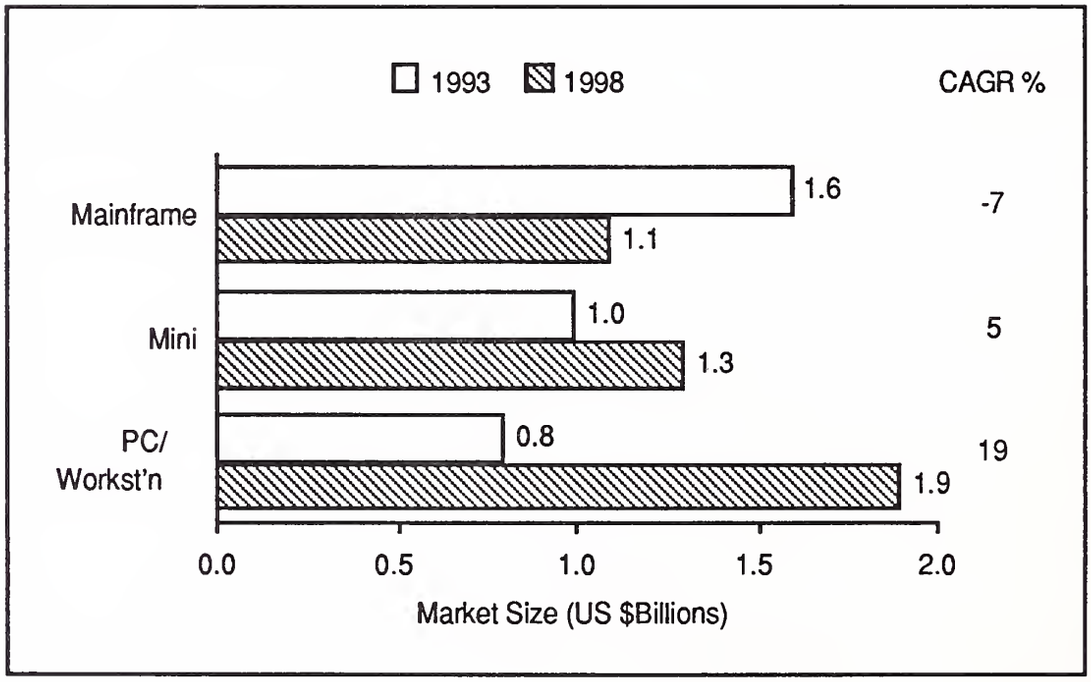


EXHIBIT III-16

Systems Software Products Market by Platform—Germany



E

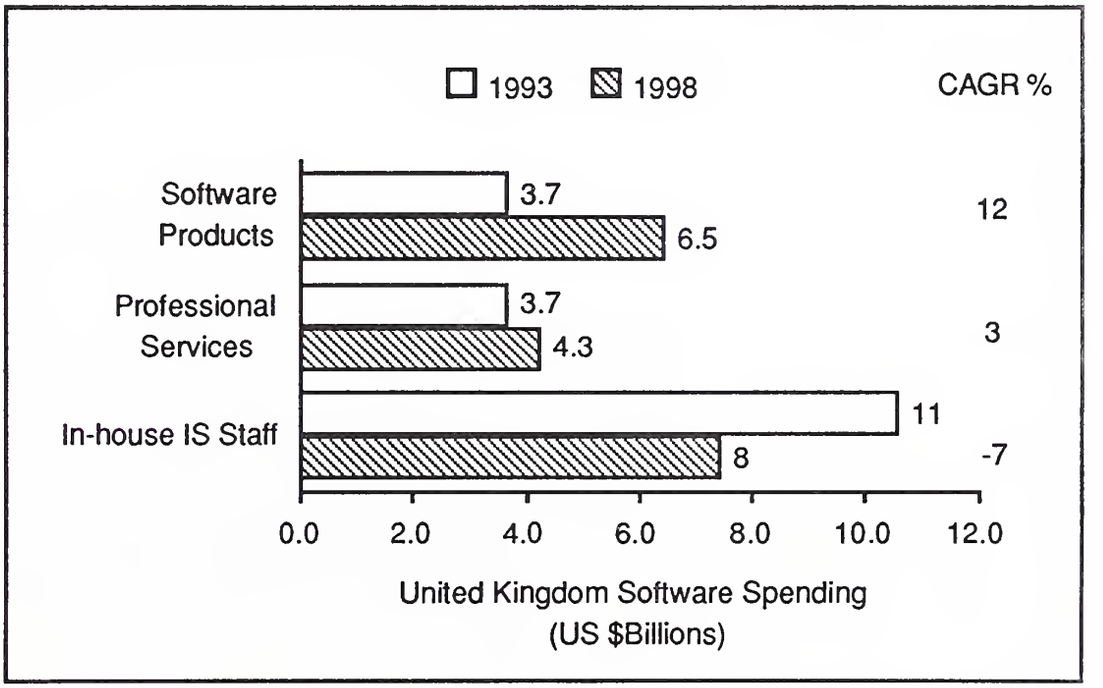
Software and Services Spending—United Kingdom

Hoskyns, the U.K. subsidiary of CAP Gemini Sogeti, has proved itself a market leader in outsourced systems operations. The lengthy recession in the U.K. has encouraged businesses to outsource in order to reduce and control IT costs. Now the U.K. government is also planning to outsource large elements of its own in-house IT—a scheme currently being market-tested by several government departments. Outsourcing is also now extending beyond the management of computer systems and networks to encompass the ongoing management of applications and the associated development resources.

This strong trend to outsource is combined with downsizing of IT budgets and is forecast to reduce spending on in-house IS staff much faster than elsewhere in Europe. Although this is good news for outsourcing vendors, those vendors who operate primarily in the professional services software development field are experiencing static market demand. Exhibit III-17 shows the size and growth rates of the resultant software spending. Software products are taking an ever larger share of the budget, while professional services vendors will face an ever more competitive market in the U.K.

EXHIBIT III-17

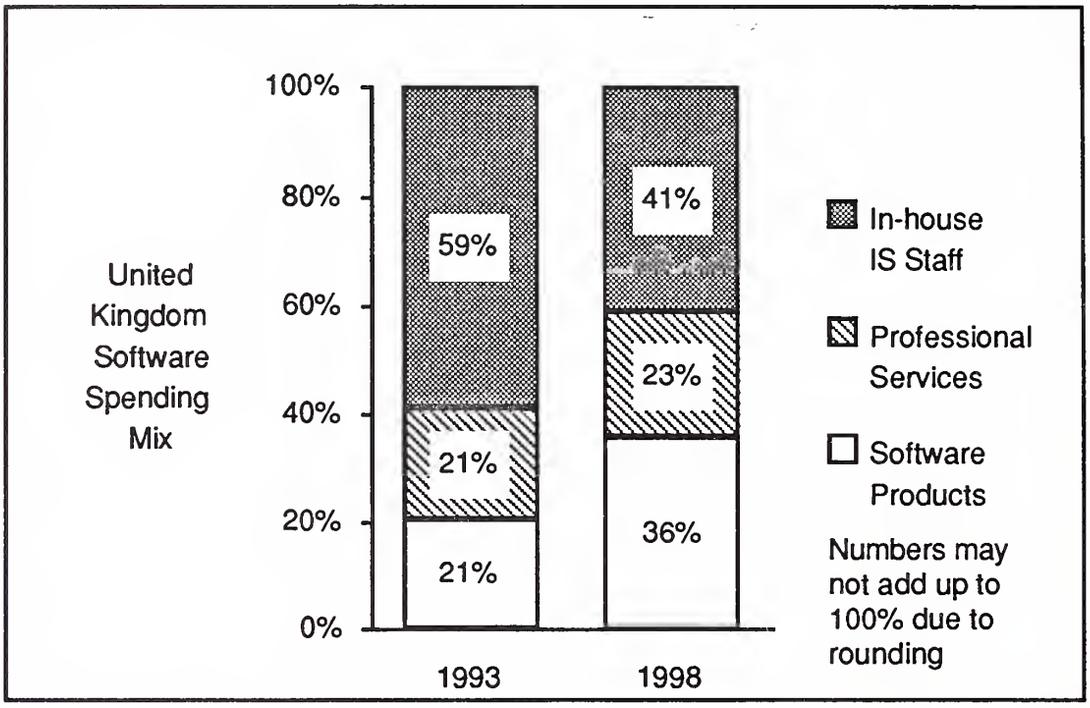
Software and Services Spending
United Kingdom, 1993-1998



The significant change in relative sizes of these sectors is illustrated in Exhibit III-18. This shows the major opportunities for outsourcing vendors, but near-static spending on custom software development in professional services.

EXHIBIT III-18

Software and Services Spending Mix
United Kingdom, 1993-1998



Exhibits III-19 to III-21 give the forecasts for the software products market sectors in the U.K. for the period 1993 to 1998.

EXHIBIT III-19

Software Products Market
United Kingdom, 1993-1998

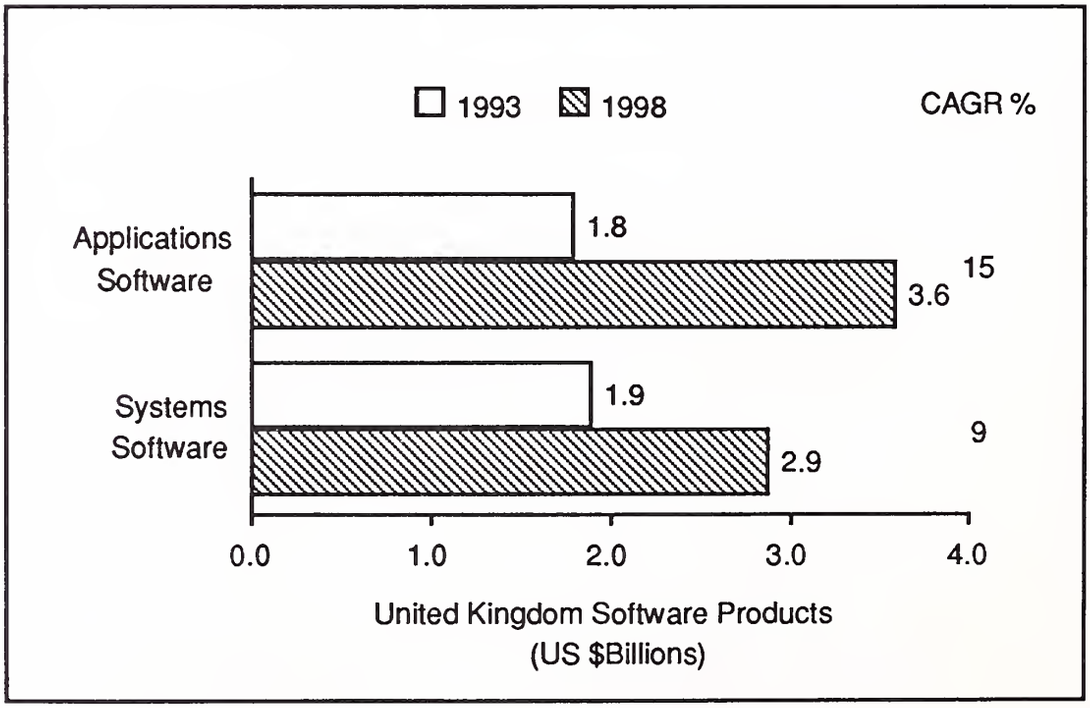


EXHIBIT III-20

Applications Software Products Market by Platform—United Kingdom

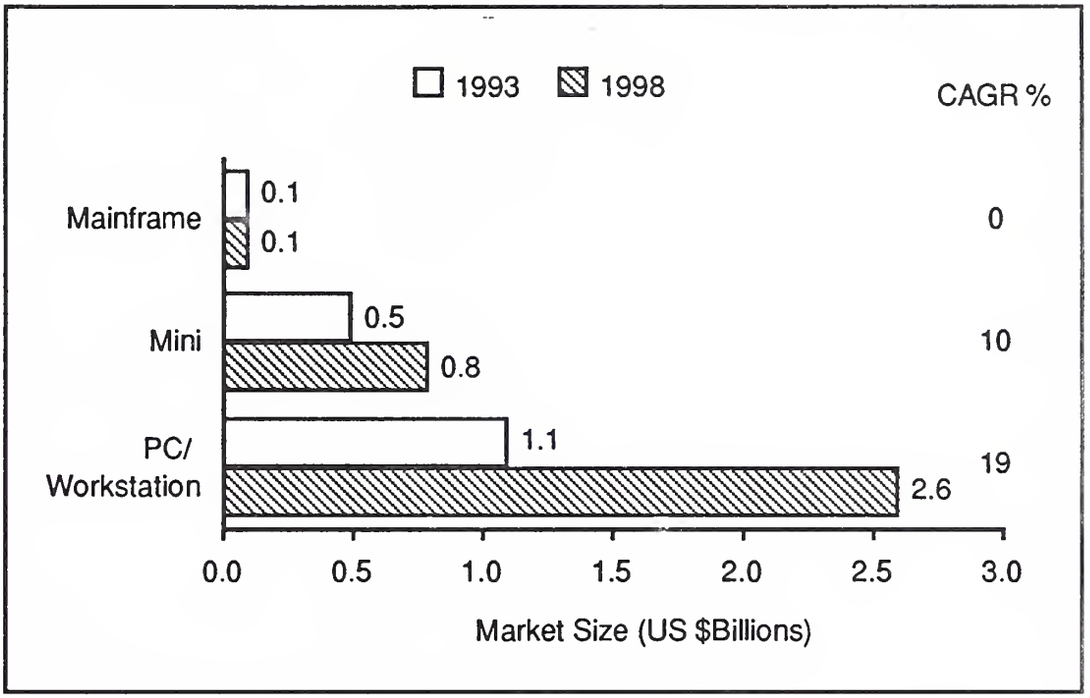
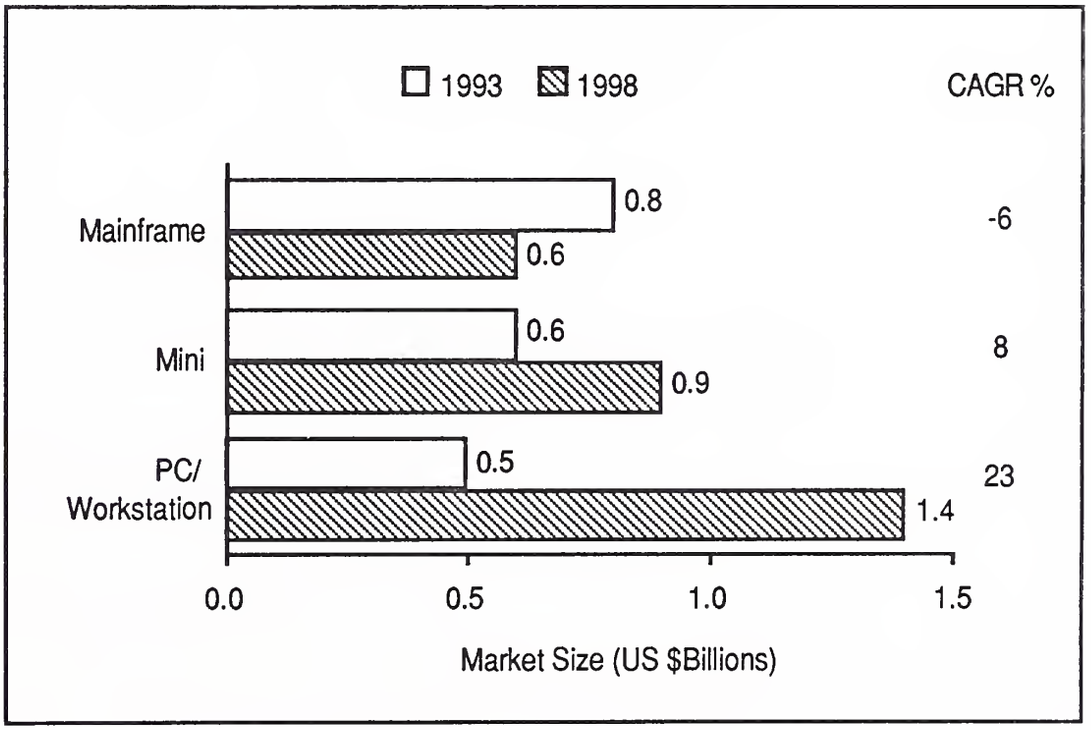


EXHIBIT III-21

Systems Software Products Market by Platform—United Kingdom



F

Software and Services Spending—Italy

State-owned Finsiel and the Olivetti subsidiary Olivetti Information Systems (OIS) tend to dominate the professional services market in Italy. Over 50% of Finsiel's business comes from government, and under its new owner—the Italian state-owned PTT, STET—Finsiel is planning to diversify more strongly into commercial sectors.

Gross domestic product in Italy is the third largest in Europe after Germany and France. But the overall software and services sector is much smaller than the country's GDP would suggest. Despite this, the Italian market is expected to follow the rest of Europe with software products growing, professional (software development) services static, and in-house staff costs falling, as shown in Exhibits III-22 and III-23.

The relatively low level of IT investment in Italy and the popularity of smaller family business has tended to favour the use of applications software products and smaller systems. The market for software products is already larger than for professional services and will continue to grow more rapidly. Government moves to further fragment the influence of very large state-owned organisations will encourage this trend.

EXHIBIT III-22

Software and Services Spending
Italy, 1993-1998

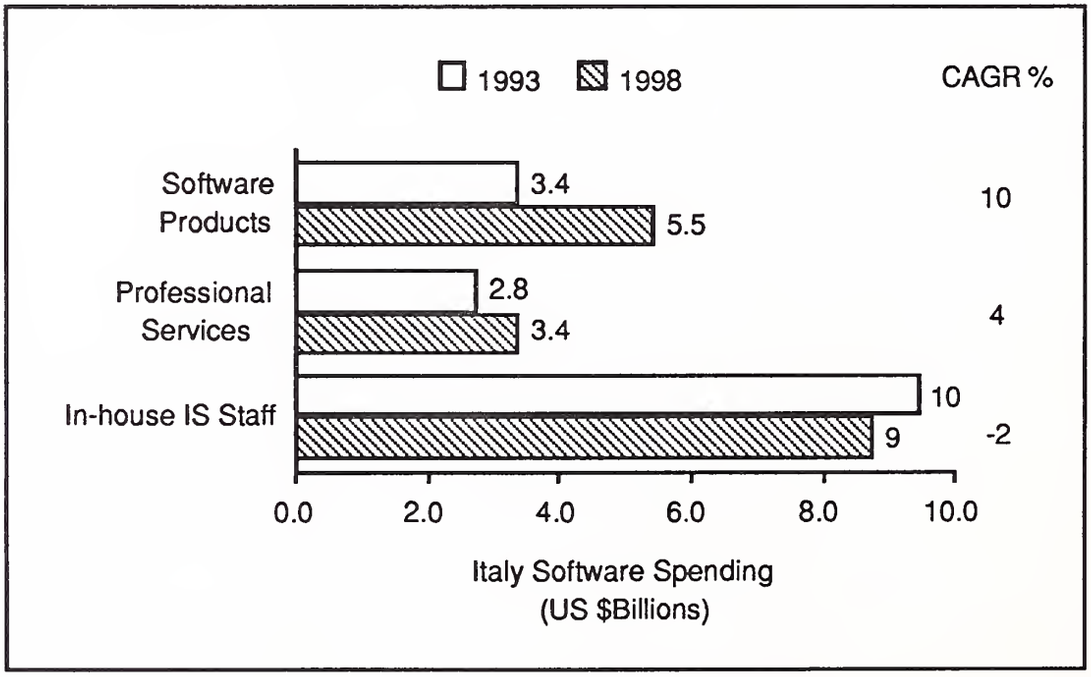
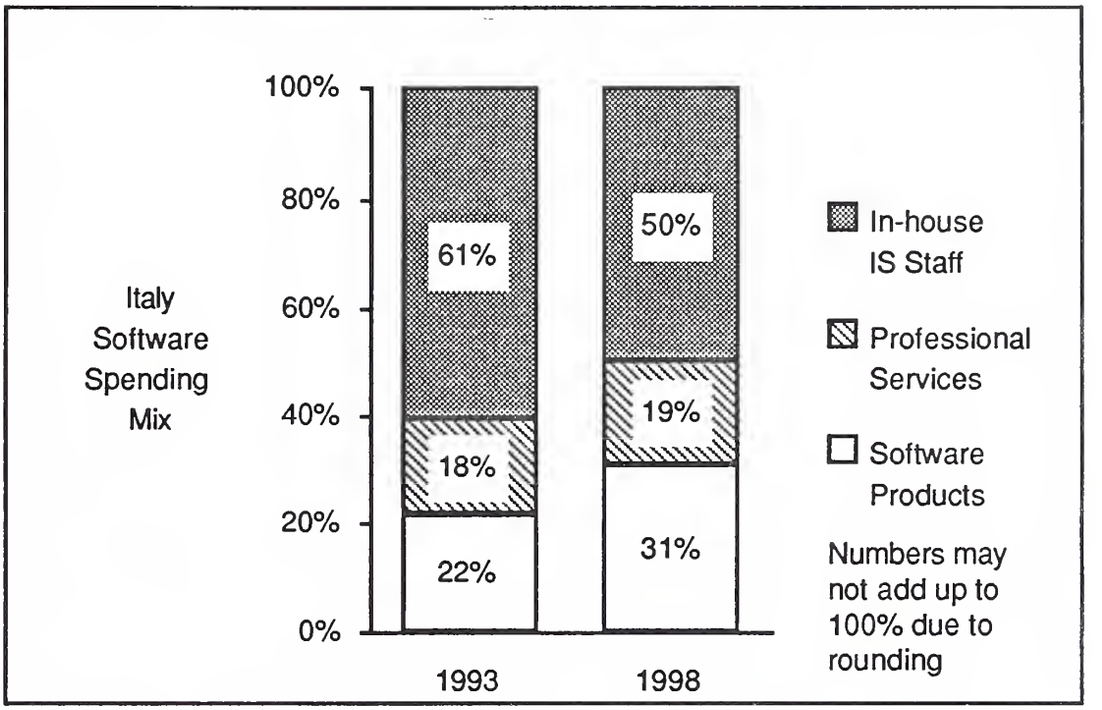


EXHIBIT III-23

Software and Services Spending Mix Italy, 1993-1998



Exhibits III-24 to III-26 show the detailed forecasts for applications and systems software products in Italy.

EXHIBIT III-24

Software Products Market Italy, 1993-1998

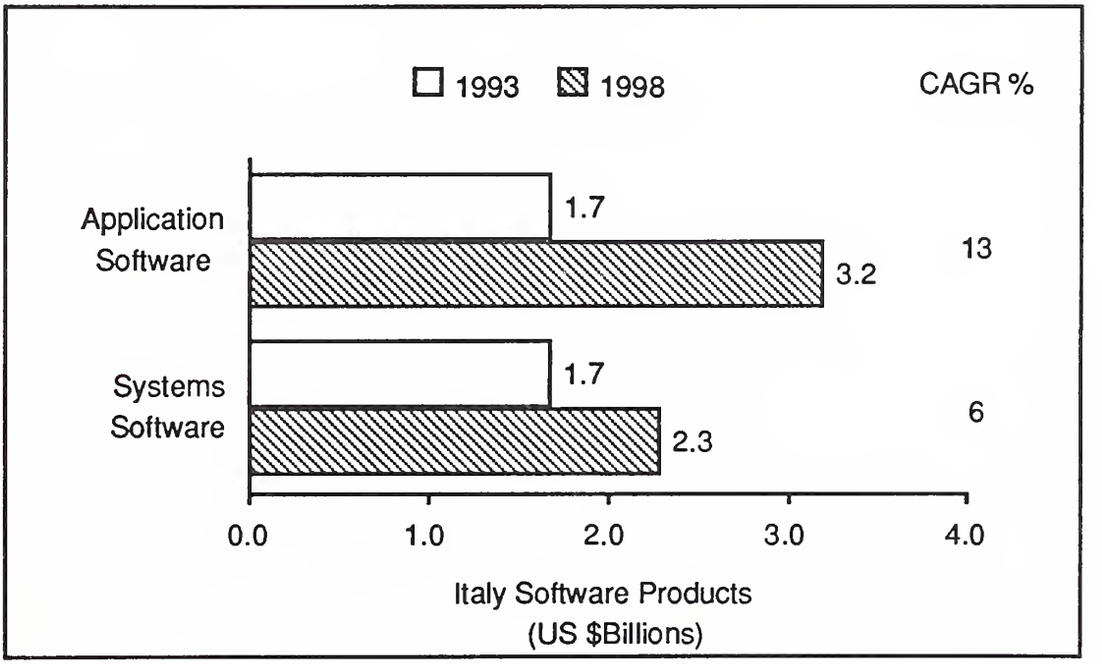


EXHIBIT III-25

Applications Software Products Market by Platform—Italy

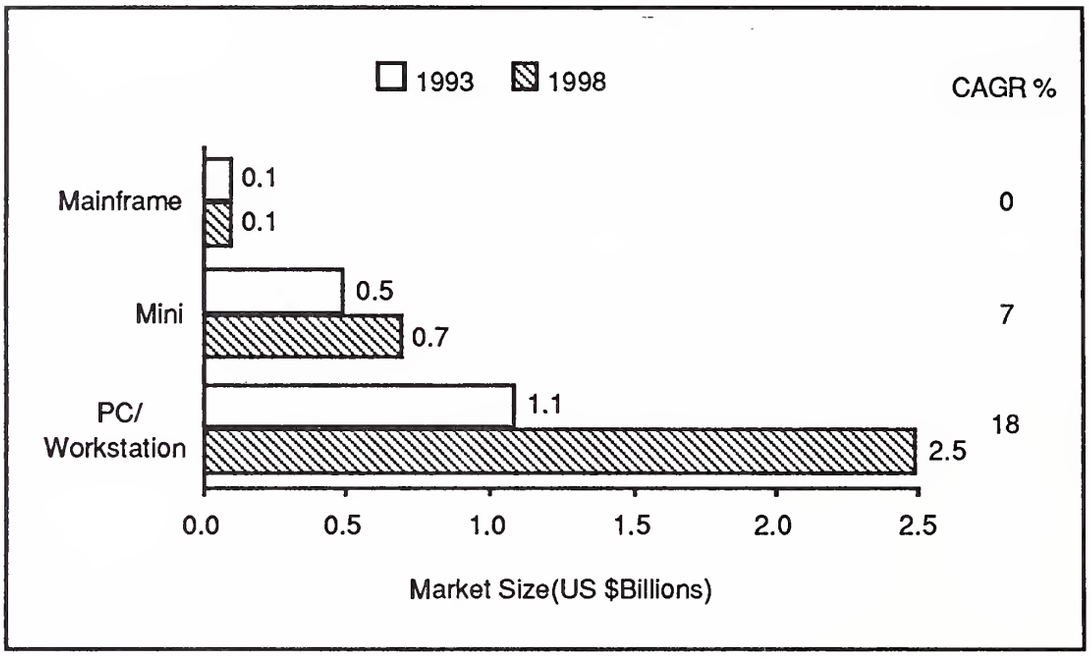
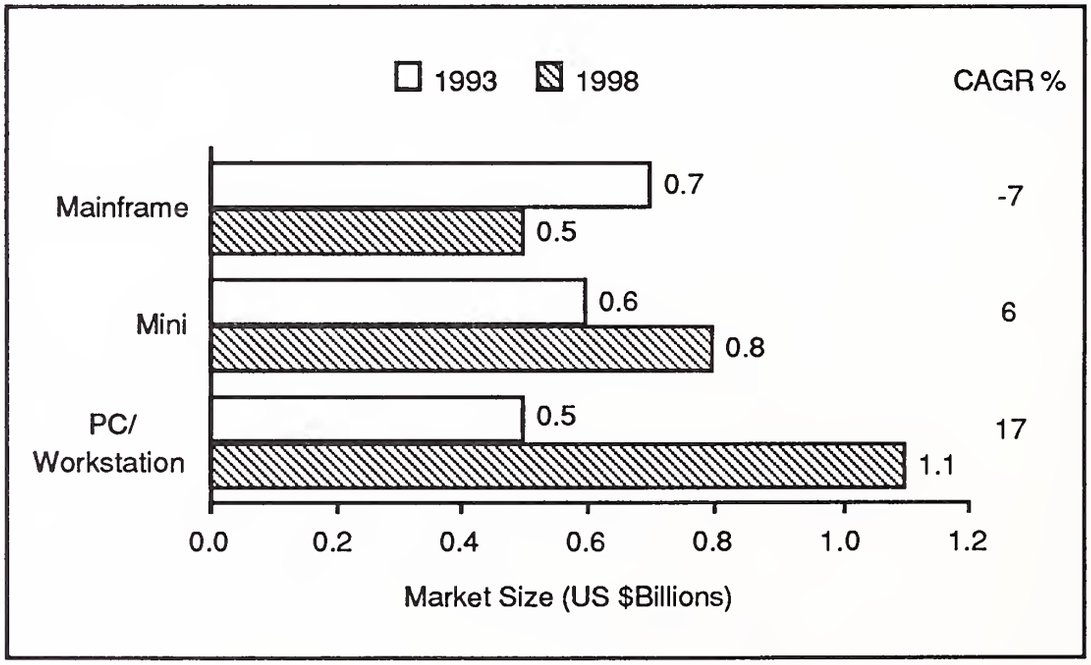


EXHIBIT III-26

Systems Software Products Market by Platform—Italy



IV IS Departments Compete for Client/Server Projects

Until recently, the IS department and IBM formed a strong coalition that controlled the information technology architecture of most organisations. This team exercised control over technology evaluation and expenditures, standards and the professional staff required to implement systems. The growing influence of users, the downsizing revolution and the resulting migration now under way to client/server (C/S) architectures threatens to destroy that coalition.

IS departments must now urgently re-assess their own role in the light of downsized IS budgets and rapid changes in technology and in the capabilities of end users. They face increasing competition from professional services vendors for most of their traditional roles as they seek to serve their organisations better.

If they can't adopt competitive working practices and management in order to deliver what their users/clients need, they face the threat of being replaced partially or completely by an external service vendor. In particular, they need to re-assess their software engineering practices and the way they contract to deliver services to users:

- Current working practices in IS departments have evolved from "host-led" software engineering based on centralised systems. The cost effectiveness of centralised IS systems is constantly challenged by new desktop and departmental technology.

- The power of users to decide on IT priorities is rapidly increasing. This power has resulted in the emergence of three unique classes of user organisations. The classes have widely varying perspectives and requirements regarding systems planning, technology and systems development.

This new competitive environment for IS departments is a challenge both for them and for the vendors.

A

Current Working Practices—Are "Host-Led" Software Engineering Practices Relevant?

1. Trends in CASE Capabilities

Significant progress has been made over the past five years in the adoption of software engineering working practices in IS. Many of the largest IS departments now have a CASE tool strategy fitting with a standard methodology for systems development and maintenance.

But INPUT's surveys indicate that the use of these standards is still usually limited to research and development rather than full-scale software production or maintenance. In particular, the use of CASE has not reached the levels predicted a few years ago.

Most software engineering methods and tools are oriented towards what INPUT terms "host-led" platforms and development (either mainframes or minicomputers). As already suggested, there is still considerable progress to be made. The maintenance workload has still been largely neglected, though CASE capabilities can be considered basically adequate.

For newer platforms, the picture is quite different:

- People working in PC/workstation environments can choose from a variety of tools for new development; however, offerings are not complete where the target operating environment is to be PC/workstation.

- Client/server environments have a rapidly increasing number of development tools, but little in the way of software engineering products.

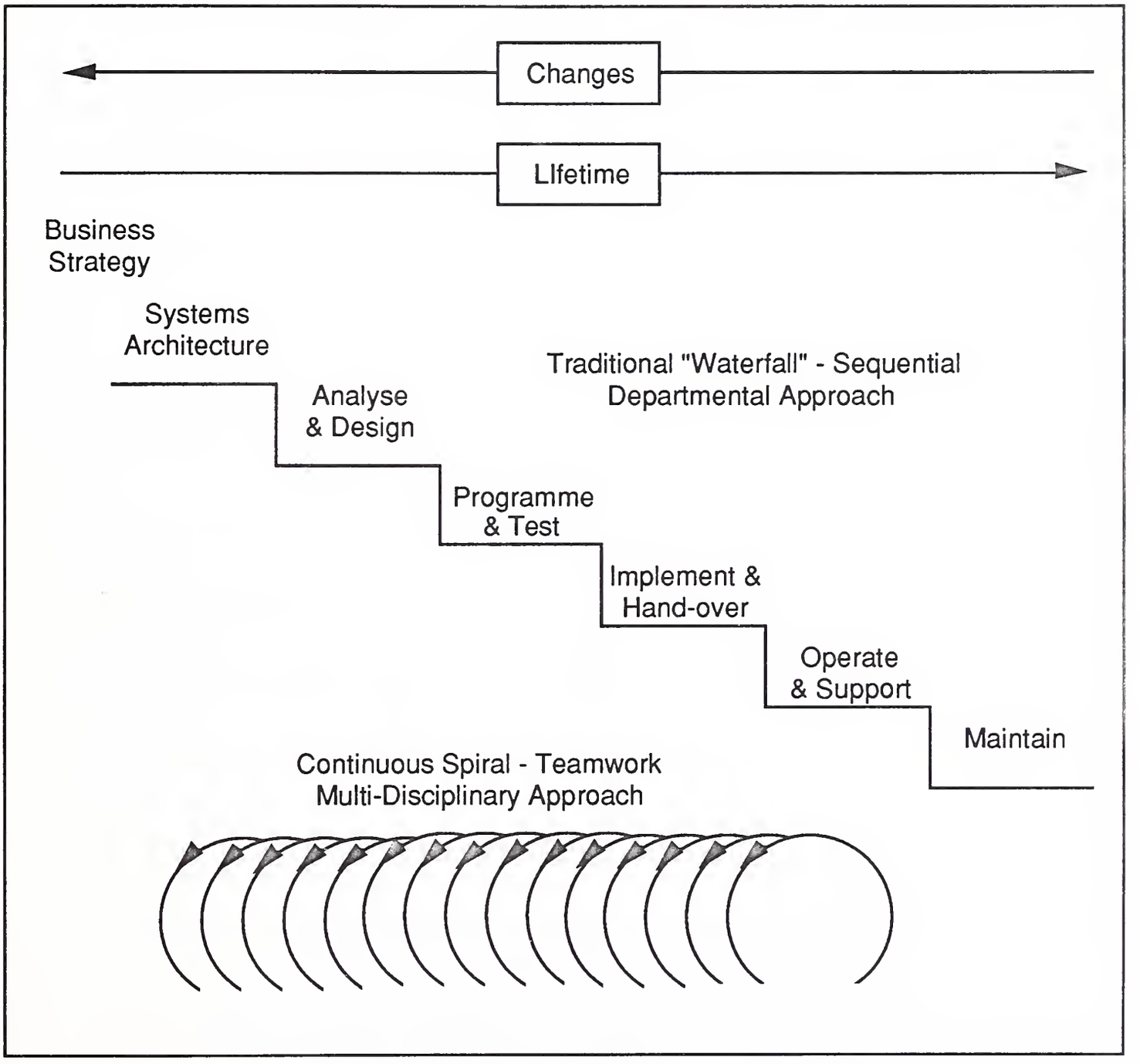
Many of the proven working methodologies for large projects have evolved as a step-by-step or "waterfall" approach. Today, these are being loudly questioned by leading consultants as too rigid and too lengthy to remain relevant in the current business climate. Exhibit IV-1 compares the style of the "waterfall" with the more realistic continuous set of inter-related cycles. Rather than taking a software project through discrete stages of its life, the newer concepts assume that there is a continuous process of renewal taking place and that all stages can be mixed. This requires a multidisciplinary approach—for example, a team that comprises user, analyst, programming, support, maintenance and project management staff.

Overall, the outlook is poor for the use of standard tools and methods. In various forms, information engineering (IE) has been widely adopted as a means of introducing formal working practices into the rather ad hoc IS

world. IE supports information flow, databases, systems and software through their design, production, delivery and ongoing support.

EXHIBIT IV-1

Evolution of the Software Life Cycle



2. User Decision Making Will Change the Role of IS

There are a number of operational implications arising from the trend for end-user management to make more purchasing decisions:

- Individual operating or business units are more likely to reject comprehensive corporatewide systems (for example, even a sensible sounding financial/marketing/production/logistics system).
- Such large (corporate) systems have a greater chance of absolute or relative failure and generally take longer to implement.
- As important, individual departments lose control over the development process. The control issue is so important that many departments will knowingly trade suboptimal systems in favour of those they can control and implement quickly.
- The use of packaged applications and/or systems integrators becomes compelling and attractive..

B

New Client Demands—The Increasing Role of User Departments

Three emerging classes of users, fostered by downsizing and the migration of buying authority, are characterised by INPUT as compute-intensive, knowledge-intensive and data-intensive users.

1. Compute-Intensive Users Are Largely Self-Sufficient

This user class had its origin in the engineering and scientific community. It has grown to include business and financial analysts, and others outside the engineering community whose analytical requirements are facilitated by the growing capabilities of high-end workstations and networking.

Of all the classes using client/server technology, this group reaps the immediate benefit of the hardware's increasing price/performance.

The growing number of packaged solutions and applications frameworks provided by speciality software products companies to address general classes of high-end analytical problem solving also benefits this class. This growth minimises their need for in-house custom development services.

These compute-intensive users know and use UNIX. They do their own programming if necessary and generally feel they can manage their own data. Based on past experience, they don't expect much help from the IS department.

2. Knowledge-Intensive Users Demand Solutions

This class is represented by office workers and professionals who believe that performance on the substantive (as opposed to the administrative) portions of their work can be enhanced by using computer technology.

They know what they want to accomplish, but frequently have information systems requirements that go well beyond their capabilities to meet them.

The types of applications required to support this group are more data-intensive and less mathematically demanding than those of the compute-intensive class. However, in-depth business knowledge is a prerequisite to deliver an effective solution.

This class is less interested in operating systems or tools. It only wants help in implementing applications.

3. Data-Intensive Users Use Popular PC Packages

This user class evolved from those who adopted the PC in the early 1980s. They believe that information technology and data should be distributed freely throughout the organisation.

They use Windows and DOS (or Mac) and believe that there are sufficient application packages to permit end users to make effective use of information technology.

Exhibit IV-2 summarises the emerging requirements of these three user classes in terms of their needs for data, software and development services and their overall dependence on IS.

EXHIBIT IV-2

User Requirements by User Class

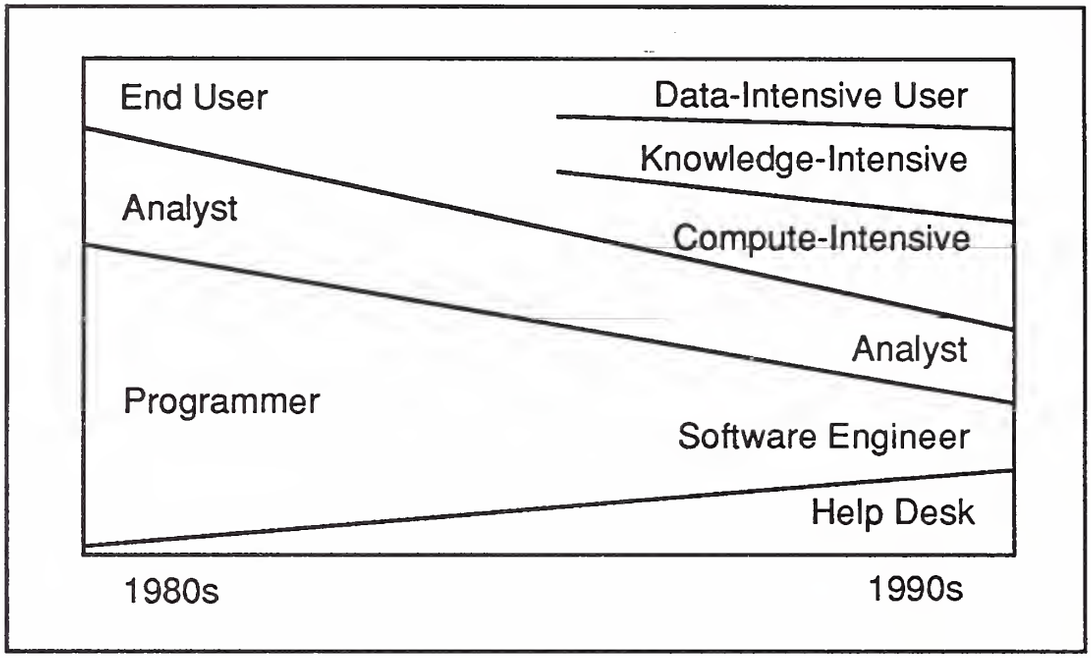
User Class	Data Needs	Software Needs	Dev. Needs	IS Depend.
Compute-Intensive	L	H	L	L
Knowledge-Intensive	M	M	H	M
Data-Intensive	H	L	L	H

Key: H = High M = Medium L = Low Source: INPUT

One conclusion to be drawn from all these end-user capabilities and their changing demands is that career opportunities for professional programmers will continue to be eroded. Exhibit IV-3 gives a schematic picture of the diminishing role of the code-cutting programmer over the next decade.

EXHIBIT IV-3

Diminishing Role for Programmers



V Vendor Services Reposition for New Opportunities

The decentralising of IT systems into the hands of end users continues as technology becomes richer in function and ever more cost effective. Requirements for custom-developed applications are being replaced with demand for off-the-shelf solutions and the integration of such software products.

These fundamental changes present a major challenge to professional services vendors seeking to reposition themselves in the market for a return to higher profits:

- Central IS management is being replaced by end-user management in more and more purchasing decisions.
- Software products are being re-engineered to client/server architectures, requiring a whole range of new skills among professional service staff.
- Older legacy application systems running on central computers need to be managed more efficiently and integrated with newer end-user systems.
- Competition for market share has become fierce as growth in spending on software and services has fallen from 25% per year in 1988 to 6% in 1993.

A End-User Demand—Service Focus for the 1990s

The two underlying trends that will change the shape of the information technology (IT) industry over the next five years are: the continued migration of buying authority to the end user, and the ongoing evolution of client/server (C/S) technology. Professional services vendors must respond rapidly to this potential reorientation of their market in the 1990s and strengthen their service focus on users.

1. Business Application Solutions—Users Prefer to Purchase

As users continue to take charge of their own destiny, the current trend to solution buying will accelerate. Selling to end users has characteristics that necessitate changes in vendor strategy.

- End-users, even in post-downsized environments, are more interested in purchasing a solution that meets their need than in building their own.
- It is unlikely that end users will retain the number of full development staff that central IS functions have traditionally maintained. Thus, as a focal point for buying shifts, vendors will increasingly need to demonstrate their ability to deliver total solutions.
- End-user executive management is seldom impressed by the razzle-dazzle of technology. The primary credibility test for vendors will be their ability to discuss the business issues and solutions that are relevant to the buying executive's key area of interest.

2. Market Fragmentation Requires New Marketing Methods

There will be many more buyers in any situation. Vendors will need to re-assess their sales and marketing mix in order to reach their customers at reasonable cost.

- As individual operating units assume responsibility for the bulk of their systems activities, the number of contact points for the vendor in a given firm will grow.
- End-users' interests focus on results. Methodologies, processes and techniques, although necessary and appreciated, do not take the place of timely delivery of good-quality results.
- End-users also expect vendors to carry more of the responsibility for delivery of results that directly benefit the business operation than has traditionally been the case when vendors dealt primarily with central IS.

B

Scalable and Networked Software Products Suit Distributed Organisations

Andersen Consulting is a good example of a professional services vendor that has invested heavily in reskilling and tooling up for client/server. During 1992, Andersen estimates, 70% of new projects undertaken were based on client/server architecture. In 1993, Andersen believes this will be close to 100% of new projects.

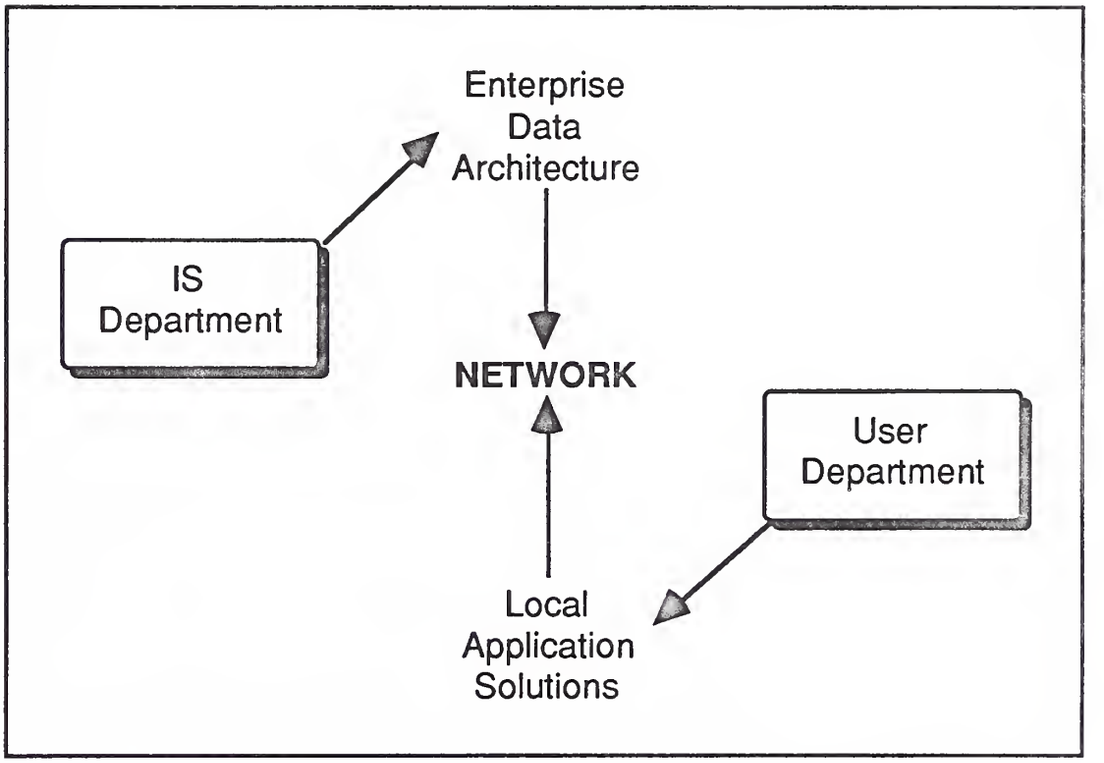
Software product vendors are already racing to migrate, re-engineer or replace their traditionally successful products with those more suited to a distributed client/server environment.

Exhibit V-1 illustrates the convergence of two purchasing groups—the IS department and the end-user departments—as they both work towards network-based information systems. This is particularly true of market sectors in which the central mainframe has not fitted well to their own (de-centralised) business architecture.

For example, industries with a highly distributed company structure such as transportation or retail are now discovering that there are computer architectures to match their company architecture—distributed and client/server.

EXHIBIT V-1

IS and User Routes to Networked Solutions



IS departments have generally adopted the concepts of enterprise architectures where individual applications are specified within the context of a model of the information needs of the whole enterprise. Repositories and information engineering figure prominently in their strategies.

On the other hand, end-user departments have a pragmatic view of applications and are generally looking for fast results. They tend to buy local solutions and then seek some way to integrate them into the corporate systems.

Both groups are looking to replace their individual computers with an information network. But they are approaching the same goal from opposite sides.

Software products vendors are following the same path. Where the IS department has been the traditional customer, they are offering downsizing routes to the network solutions. Where the end user has been the traditional customer, they are offering an upsizing route to the networked solution.

1. Downsizing to Client/Server—Mainframe Software Vendors Race to Scale Down

Computer Associates has re-engineered its suite of systems management software from the mainframe to a UNIX environment. SAP has started to deliver its R/3 UNIX application suite as an alternative to its highly successful R/2 on the mainframe.

In fact, all the systems software and applications software product vendors are following the same path as the IS department and moving to network-based and client/server models.

2. Upsizing to Client/Server—PC Software Vendors Upgrade to Networked Products

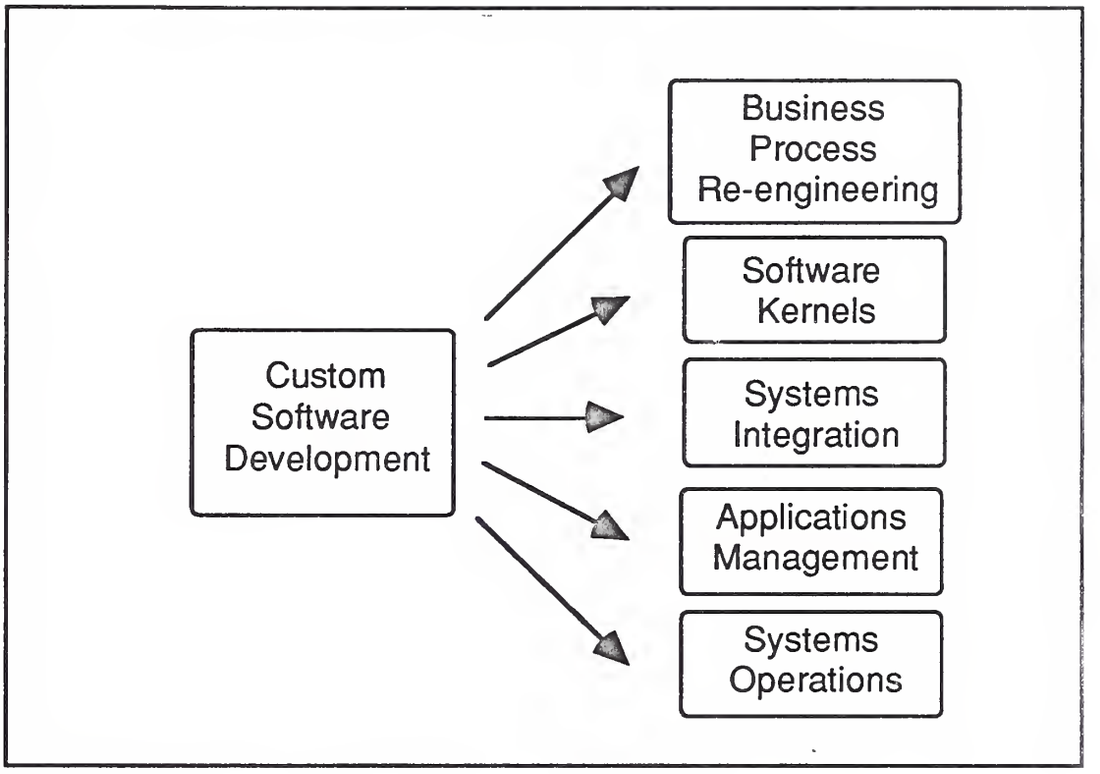
Borland has engineered enhancements to its PC database products to start its five million end-user customers on the route to networked application solutions. Microsoft has begun deliveries of Windows NT to similarly attack the multi-user networked systems market.

The full effect of PC software vendors starting to compete for business with central systems vendors is not yet clear. But it will most definitely be good news for the customer, whether IS or end user, in terms of improved value for money—meaning lower software prices.

As they respond to market and technology changes, professional services vendors are having to replace their traditional role of custom software development. Exhibit V-2 identifies some of the key new business activities that still show good growth potential in Europe.

EXHIBIT V-2

Repositioning Traditional Professional Services



A general reduction in software pricing will accelerate this trend away from custom software development. This reduction will force professional services vendors to promote more strongly their capabilities in areas such as systems integration, systems operations or legacy software management.

C

Legacy Software Opportunities Largely Ignored

Two-thirds of the typical IS department's resources are used to support operational (legacy) software. The majority of this software is central or host-based applications written and modified in-house over a long period. Professional services vendors have been slow to see this huge IS spending load as an opportunity. Most vendors have chosen in the past to focus on the implementation of new applications rather than the support of old ones written by someone else.

As the software and services industry restructures to reflect a general slowdown in spending on new development, some vendors have specialised in services for the support and management of legacy applications software.

1. Applications Management and Operational Software Support Specialist Services Emerge

INPUT's research clearly identifies the huge amount of in-house resources dedicated to legacy applications and their operational support. It is also clear that the main issue is not one of the technical complexity of the task—though this is most people's perception. The key issue is management of the software environment and management of the level of service offered to users.

A number of smaller companies specialise in applications management and operational software support for applications originally developed by the customer. French vendors have been especially quick to seize this business opportunity.

In the U.K., CGS Hoskyns has recently won some high-value contracts in which it has acquired the customer's entire IS department and contracted to provide a full application management service.

2. Client/Server Front Ends Combining PC and Mainframe Investments

Many legacy systems remain in constant use because they are the core of a company's business and are therefore business critical. On the other hand, many users now have PCs that must emulate dumb terminals in order to access these legacy systems. This does not allow very efficient integration between the users' desktop applications and the mainframe database.

Systems integration vendors are finding that a high proportion of their projects are aimed at getting the best out of the combined old and new investments. Putting an easy-to-use, modern user interface at the desktop has become top priority for many customers as they review the payback from existing investments.

ECSoft is an example of a European vendor, based in France, that specialises in offering Legacy software tools. These tools help IS to manage legacy systems better and to integrate such systems into new client/server front ends.

3. IS Management Tools and Techniques Must Become More Professional

Chapter IV identifies some of the challenges facing IS managers as they re-engineer their departments to meet the new needs of their company. Over the longer term, it is clear that IS managers must run their operations as though they are independent vendors, with the following elements:

- Contracted service level agreements with users

- Professional business management and IS staffing
- Financially justified and profit oriented

For many IS departments, this transition will demand many new products and services from professional services vendors who have proven business working practices and management aids.

The alternative to getting into better business shape is that even more IS departments will find themselves outsourced or replaced by a systems operations vendor.

D
Vendors Must Invest in Marketing for Professional Services

The highly competitive nature of the market during the 1990s will require vendors to improve there own business strategy and management. Investment in marketing has been generally ignored so far by professional services vendors.

Professional services vendors have generally treated marketing as an activity required to support sales. Obviously, professional marketing is more than just a few brochures. To stimulate purchaser awareness, demand and loyalty requires investment in a full, orchestrated mix, covering:

- Market segmentation analysis and product planning
- Competitive intelligence
- Channel development strategies
- Account management and development
- Marketing communications (PR, advertising, etc.)
- Database marketing (highly targeted)
- Customer satisfaction and needs research

As users increasingly dominate the purchasing process, vendors must invest in more commercial marketing methods to build market awareness and increase customer loyalty. Such investment is particularly important when future revenue growth is only going to come by winning new clients away from an established relationship with a competitor. Vendors can no longer rely on naive marketing strategies or just reference sales to win business.

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A Appendix—Software Spending Forecast Database Summaries

EXHIBIT A-1

Software and Services Spending Europe, 1993-1998

	US$ Billions		
	1993	1998	CAGR (%)
In-house IS Staff	88.0	75.0	-3
Professional Services	26.8	35.9	6
Software Products	28.8	48.1	11
Applications Software Products	14.5	28.7	15
Mainframe	1.3	1.2	-2
Mini	4.2	6.8	10
PC/Workstation	9.0	20.8	18
Systems Software Products	14.3	19.4	6
Mainframe	6.3	5.2	-4
Mini	4.4	6.0	6
PC/Workstation	3.5	8.1	18

EXHIBIT A-2

Software and Services Spending France, 1993-1998

	US$ Billions		
	1993	1998	CAGR (%)
In-house IS Staff	18.6	15.6	-3
Professional Services	7.7	9.1	3
Software Products	6.6	9.6	8
Applications Software Products	3.5	5.5	9
Mainframe	0.2	0.2	0
Mini	1.0	1.1	2
PC/Workstation	2.3	4.2	13
Systems Software Products	3.1	4.1	6
Mainframe	1.3	1.1	-3
Mini	1.0	1.2	4
PC/Workstation	0.8	1.8	18

EXHIBIT A-3

Software and Services Spending Germany, 1993-1998

	US$ Billions		
	1993	1998	CAGR (%)
In-house IS Staff	25.9	21.4	-4
Professional Services	4.0	5.8	8
Software Products	6.8	11.8	12
Applications Software Products	3.3	7.5	18
Mainframe	0.4	0.4	0
Mini	1.0	2.2	17
PC/Workstation	1.8	4.9	22
Systems Software Products	3.4	4.4	5
Mainframe	1.6	1.1	-7
Mini	1.0	1.3	5
PC/Workstation	0.8	1.9	19

EXHIBIT A-4

Software and Services Spending United Kingdom, 1993-1998

	US$ Billions		
	1993	1998	CAGR (%)
In-house IS Staff	10.6	7.5	-7
Professional Services	3.7	4.3	3
Software Products	3.7	6.5	12
Applications Software Products	1.8	3.6	15
Mainframe	0.1	0.1	0
Mini	0.5	0.8	10
PC/Workstation	1.1	2.6	19
Systems Software Products	1.9	2.9	9
Mainframe	0.8	0.6	-6
Mini	0.6	0.9	8
PC/Workstation	0.5	1.4	23

EXHIBIT A-5

Software and Services Spending Italy, 1993-1998

	US$ Billions		
	1993	1998	CAGR (%)
In-house IS Staff	9.5	8.8	-2
Professional Services	2.8	3.4	4
Software Products	3.4	5.5	10
Applications Software Products	1.7	3.2	13
Mainframe	0.1	0.1	0
Mini	0.5	0.7	7
PC/Workstation	1.1	2.5	18
Systems Software Products	1.7	2.3	6
Mainframe	0.7	0.5	-7
Mini	0.6	0.8	6
PC/Workstation	0.5	1.1	17

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B Lead Vendor Questionnaire

The following are extracts from a wide-ranging questionnaire used to determine vendor data and opinions on a variety of market issues.

Confidentiality - INPUT may publish **facts** provided about your company's past performance. However all **opinions** expressed by you will remain anonymous and will not be attributed to your company. Your opinions will be used to support statistical industry trend analyses. In your answers below we consider growth forecasts (columns 5 & 6) and the whole of questions 6, 7 and 8 to be opinions.

QUESTIONNAIRE

1. Please confirm your company name:.....

2. To avoid double counting of revenues please indicate your major shareholders and their percentage ownership.

   Major Shareholder Ownership (%)

   .....

3. What was your total European revenue for 1992? How much of it can be attributed to business from a parent company or its subsidiaries (i.e., captive)?

   Total European Revenue.....Currency (e.g., US $) .....

   Percent captive within parent group.....%

The next few questions ask you to give us a guide as to the sources of this revenue (turnover) in 1992. We need to understand how much for each type of product and service you deliver (Q6), and how much relates to different technology platforms (Q7).

Each table asks for either a revenue figure or a percent of total (columns 2 & 3), how this has changed during 1992, and how it might change in 1993 and 1994 (columns 4, 5 & 6). Please provide as much detail as possible on your major markets, even if it is only a rough estimate or guide to percentages. If you cannot provide percentages, please describe your business expectations in words.

If you have substantial business in more than one country, please complete copies of Q5 to Q7 for each major country. Local currencies are preferred for country revenue figures.

Q7 asks for the split of business across the life cycle of projects, from the initial design/consulting phase to maintenance and support. We are particularly interested in the pattern of this project business and how you expect it to change.

6. SOURCE OF REVENUE BY TYPE OF SERVICE OR PRODUCT REGION: EUROPE

1 Please State Currency Clearly --------->	2 1992 Revenues ( )	3 Share of Total Revenue (%)	4 Actual Growth '91-'92 (%)	5 Expected Growth '92-'93 (%)	6 Expected Growth '93-'94 (%)
Total Europe Revenues	------	100%			
SERVICES					
SOFTWARE PRODUCTS					
HARDWARE PRODUCTS					
OTHER REVENUES					
SERVICES (PROJECTS):					
• **Design Services:**					
Business Consulting					
IS Consulting					
• **Development Services:**					
Product Development					
Custom Software Development					
Systems Integration					
• **Implementation Services:**					
Installation					
Education & Training					
Enhancement					
• **Support Services:**					
Software Maintenance					
Hardware Maintenance					
Operations Outsourcing					
• **Contract staff (body-shop)**					
• **Data Services:**					
Processing Services					
Network Services (VAN)					
SOFTWARE PRODUCTS:					
• **Systems Software**					
• **Applications Software**					

Additional comments:

7. REVENUE MIX, BY TYPE OF PLATFORM OR ARCHITECTURE REGION: EUROPE

1 Please State Currency Clearly --------->	2 1992 Revenues ( )	3 Share of Total Revenue (%)	4 Actual Growth '91-'92 (%)	5 Expected Growth '92-'93 (%)	6 Expected Growth '93-'94 (%)
Total Europe Revenues	-----	100%			
By **Hardware Platform**:					
Mainframe					
Midrange					
Workstation					
PC					
Network					
Total Europe Revenues	-----	100%			
By **Software Platform**:					
Windows					
OS/2					
UNIX					
OS/400					
Oracle					
DB2					
Others (Please specify)					
Total Europe Revenues	-----	100%			
By **Architecture**:					
Client/Server					
Object-Oriented					
Workflow/Workgroup					
Others (Please specify)					

Additional comments:

Thank you very much for answering these difficult revenue questions. Now please give some indications of how you see the markets changing in future.

8. In which key markets is your company planning to invest? Why? What are the biggest obstacles to success?

Our top priority market (1) is: .....

.....

.....

.....

Why? .....

.....

.....

.....

Obstacles? .....

.....

.....

.....

Our next top priority market (2) is: .....

.....

.....

.....

Why? .....

.....

.....

.....

Obstacles? .....

.....

.....

.....

Our next top priority market (3) is: .....

.....

.....

.....

Why? .....

.....

.....

Obstacles? .....

.....

.....

.....

Our next top priority market (4) is: .....

.....

.....

.....

Why?.....

.....

.....

.....

Obstacles? .....

.....

.....

.....

Once again, many thanks for your help. Please confirm:

Your Name:.....

Position:.....

Address:.....

.....

.....

.....

Telephone: .....

FAX: .....

Please FAX this completed questionnaire to INPUT (Europe) on +44 (0) 71 629 0179.

As well as the specific questions tabled above, we ask you also to mail any published information (at least your latest financial report) which will help our consultants to understand the strengths of your company.