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Client/Server Training

Europe, 1994

Software Support Programme—Europe

DECEMBER 1994

Client/Server Training Europe—1994

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Abstract

The explosive growth in client/server computing presents major challenges to both users and vendors of training services.

This report examines the place of client/server in current Information Services strategies, and discusses how re-skilling for client/server technology affects the whole user organisation, and review vendors' strategies to meet user training needs. The report concludes with an assessment of future growth in training activity, and with recommendations for users and vendors of how they may best meet the training challenges and opportunities of client/server.

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I

Introduction

A Purpose

The purpose of the research conducted for this report is to examine the training issues surrounding the adoption of client/server technology. The report addresses questions such as:

- What are the current key training issues for users and vendors of training?
- Where does client/server fit within overall Information Services strategies?
- What impact does client/server have on current requirements for re-skilling of staff?
- How confident are users that they will be able to cope with the training challenges posed by client/server?
- How are vendors reacting to the requirements being imposed on them by users?
- Is training activity expected to increase in the short-term future ?
- What should users do to ensure that they successfully meet the training challenges posed by client/server?
- What should vendors do to ensure that they successfully meet users' client/server training needs?

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B
Methodology

During May and June of 1994, 28 interviews were conducted on the subject of re-skilling for client/server. Fifteen of the interviews were with users, and thirteen were with vendors of training. In both cases, the sample was drawn from the UK, Germany and France.

The companies targeted among users were major European companies, who between them accounted for around 4,000 IT employees. The smallest user had 40 IT professionals and the largest had 1,400.

The vendors were chosen as strategic suppliers of training services because of their important position in the IT world. In other words, the majority had activities in professional services, hardware and software as well as in training. Their combined training revenues were in the order of £70m to £100m annually.

Some vendors also supplied information on their internal training programmes.

C
Report Content

The remainder of this report is organised into four chapters and three Appendixes:

- Chapter II, *Executive Overview*, summarises the findings of this study
- Chapter III, *Training Challenges in the Mid-1990s*, reviews the current state of Information Services strategies, with particular reference to the role that training in general, and client/server training in particular, plays within those strategies
- Chapter IV, *The Re-skilling Imperative*, considers the need to re-skill in order to be able to implement client/server technology, and assesses the extent to which the re-skilling process affects the whole user organisation. It describes what users think about the challenges of re-skilling, and reviews the various strategies being adopted by vendors to satisfy users' requirements
- Chapter V, *Future Challenges and Opportunities*, assesses the extent to which training activity will grow in the short term, and considers what both users and vendors need to do to meet the training challenges and opportunities of the client/server scenario.

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- Appendix A contains a review of a number of vendors' client/server training portfolios

- Appendix B shows the questionnaire used to gather information from users

- Appendix C shows the questionnaire used to gather information from vendors.

D
Other Related INPUT Research

INPUT has published the following related reports that address client/server issues:

- In the *Client/Server Applications and Markets—USA* programme:

  - The Client/Server Explosion-How Users Choose Platforms

  - Client/Server Service Opportunities-Europe, 1993-1998

  - Client/Server Impact on Major Project Contracting-Europe, 1993-1998

- In the *Customer Services–Europe* programme:

  - The Impact of Client/Server Computing.

In addition, INPUT reviews vendor strategies in its Client/Server Profiles.

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II

Executive Overview

A
Training Services are Challenged by Constant Change

1. Information Strategies Are Evolving Fast

There is a changing relationship between Information Services (IS) departments (which are obliged to treat users as customers and compete effectively for their business) and user organisations (which are no longer under any obligation to see their IS department as a privileged supplier of services).

New techniques like prototyping and Rapid Application Development (RAD) allow IS professionals and users to work together in small project teams.

The changing environment obliges IS departments to acquire new, "softer" skills to handle the more open, less bureaucratic relationship in which they now find themselves with users.

Open Systems are a key element of IS strategies, which now emphasise portable, integrated, communicating applications rather than big mainframe datacentres, although the latter, unfashionable as they have become, will continue to have a role to play for some time.

Users are showing a preference for packaged solutions over bespoke development. Influenced by considerations of cost and of speed of implementation, they look for packages with characteristics (e.g. an open architecture) that are consistent with other elements of their overall strategy.

2. Client/Server Features Heavily in Information Services Strategies

Most IS departments have had some involvement with client/server, often as a result of user demand. Regardless of the extent of their

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involvement, users see client/server as a general direction in which they are all proceeding.

Speed of implementation is variable, with many users seeing client/server as a long-term goal rather than an immediate priority.

Users need extensive new skill sets in order to be able to exploit client/server effectively. Many technical areas are involved, including:

- Development Systems/Tools
- Relational Databases
- Networks
- Operating Systems for the client and for the server.

Additionally and, in many people's eyes, more importantly, there are two overriding issues:

- The need to re-skill mainframe-oriented technicians
- The need to develop overview as well as detail skills.

Overview skills are those which enable IS professionals to stand back from detailed technical considerations and take a broader view of key implementation issues. Typically, such skills allow IS professionals to identify the correct technology in the first place, and having chosen it to be aware of interactions throughout the system between client and server and between individual clients and servers.

Such overview skills are often to be found in a new sub-profession of Information Technology, the Information Architect.

The Information Architect in particular, and IS professionals in general, now require an understanding of a number of technologies, as well as a profound knowledge of a specific one.

3. Training Faces Financial Pressures

However pressing the need for re-skilling, training budgets are not increasing, and any training that takes place is closely scrutinised to ensure that it offers real business benefits.

Individual career development is overwhelmingly seen as a secondary goal.

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B

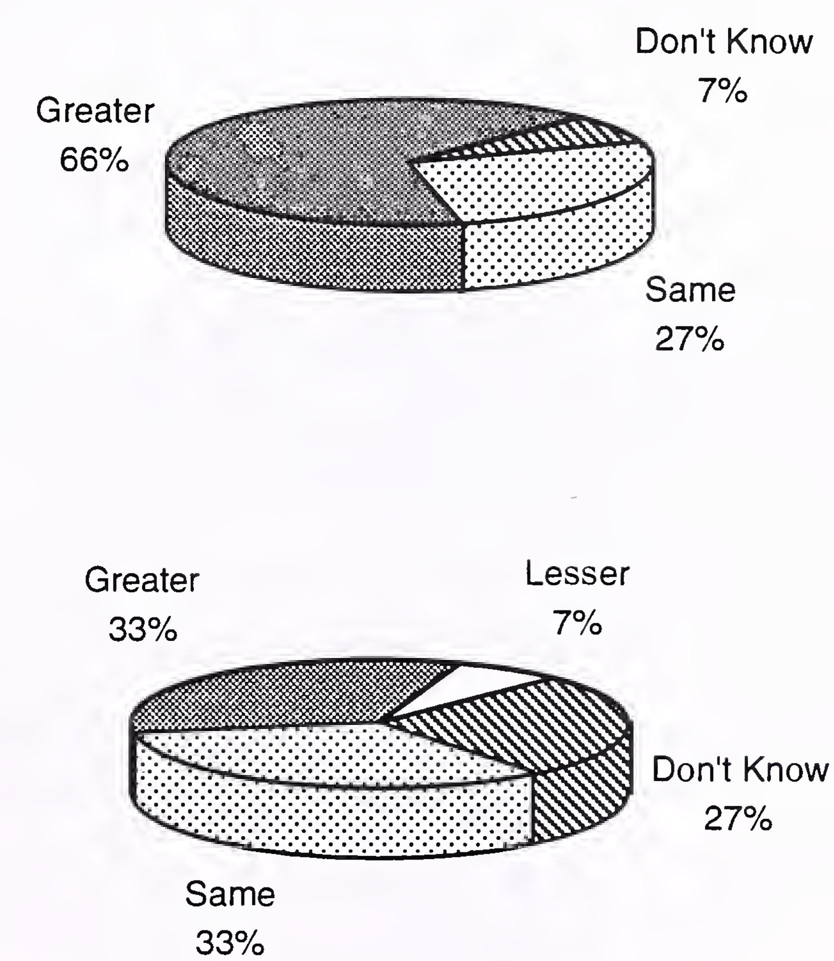
Re-skilling is a Critical Success Factor

1. Client/Server Has Major Re-skilling Implications

Among the leading users and vendors INPUT questioned about client/server training, the vendors were anticipating more problems than the large IS department managers. Exhibit II-1 illustrates these differing viewpoints.

Exhibit II-1

Vendors See More Problems with Client/Server Training



Source: INPUT

Sample: 15 IS managers, 13 vendors, Europe
"How do Client/Server problems compare with previous re-skilling tasks?"

This highlights the challenges facing both vendors and IS management:

- Vendors who wish to have a competitive edge must maintain their client/server skill levels so as to stay ahead of users and other vendors

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- Vendors must respond to the needs of end-users to acquire new software skills

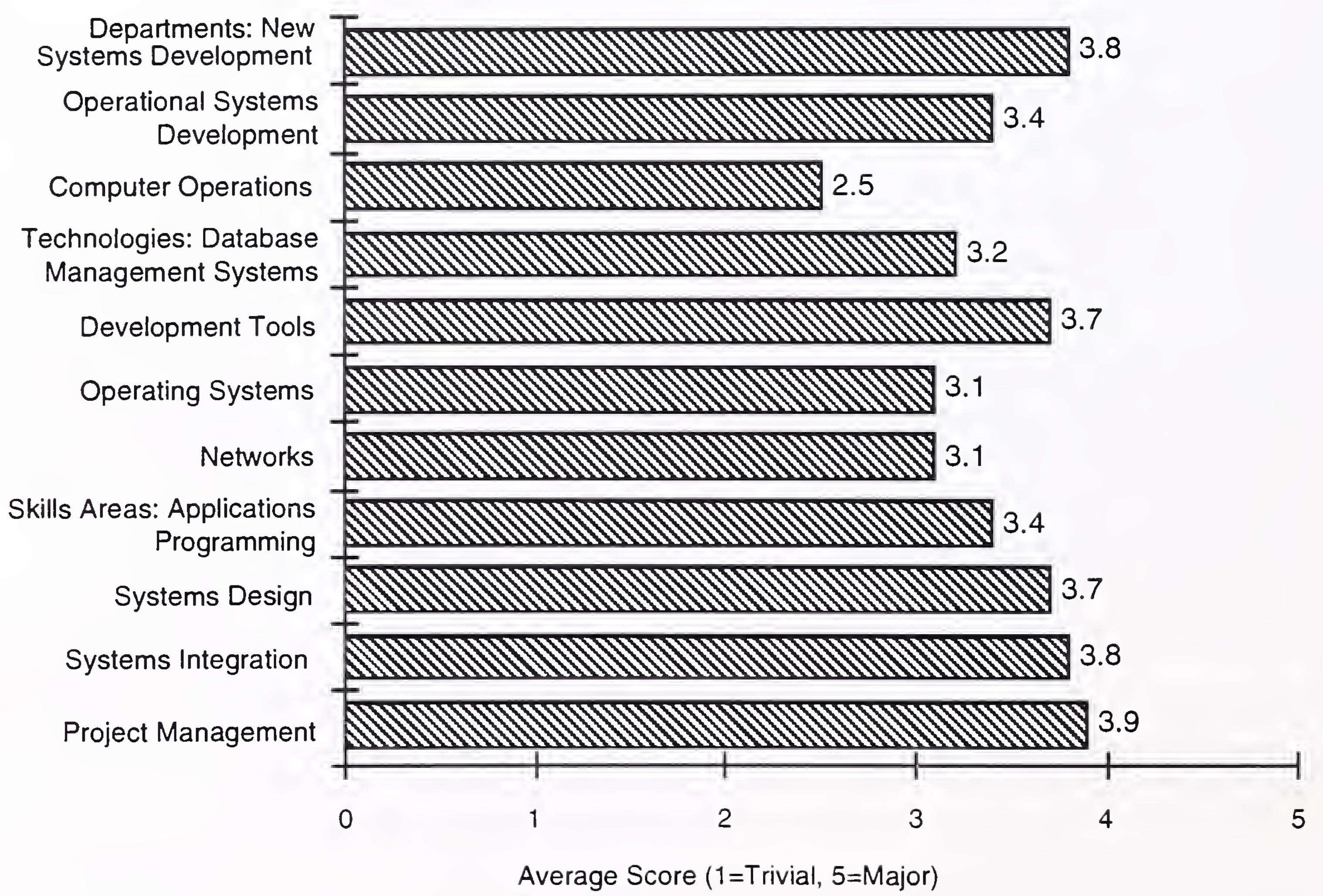
- IS management, particularly in large organisations, must recognise the difficulties presented by the extensive adoption of new client/server architectures in their business system solutions. This will be a major barrier to successful implementation of such systems by in-house teams. There will be many alternative service opportunities for vendors resulting from the slow adoption of client/server in-house

- All parties must recognise the particular challenge facing mainframe staff who need to acquire a radically different skill set in order to adapt to a client/server environment.

Exhibit II-2 shows how users and vendors assessed the significance of the re-skilling task for various topics.

Exhibit II-2

Significance of Re-skilling Task



15 user respondents and 13 vendor respondents. Standard error = 0.1 *Source: INPUT*

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Ten out of eleven average scores are above the mid-point (3.0), which demonstrates how wide-ranging is the re-skilling challenge.

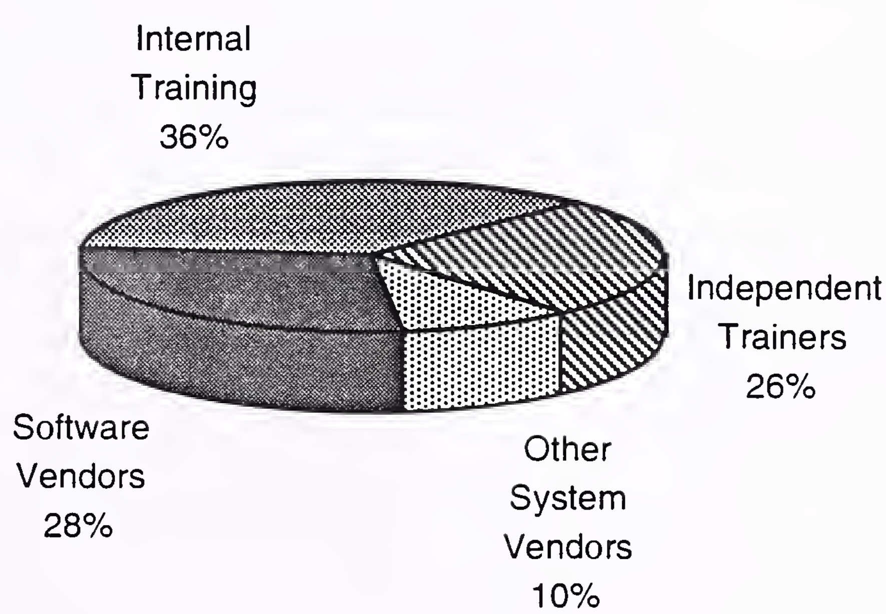
2. Users are Confident that they can Meet the Challenge

Users recognise the size of the client/server re-skilling challenge, but are confident that they can cope with it.

Users can satisfy over a third of their training needs from their own resources –Exhibit II-3 shows user estimates of the use they make overall of various sources of training supply.

Exhibit II-3

Users Place Great Reliance on Internal Training



Average percentage of total training days supplied by source of supply.
Number of 15 responses. *Source: INPUT*

Generally, users do not believe that there is a skills crisis.

Whilst users accept that there would be problems if they attempted to make an overnight transformation from their current systems to an all-client/server environment, they believe that by taking a gradual approach they can handle the problem.

Users have confidence in the quality of their staff, and believe them to be well able to take on board new technologies and new approaches to software development.

Users are happy with the quality and (almost always) the price of the training services they receive.

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A wide variety of training suppliers are used, of which only IBM was mentioned favourably by more than two users.

Users are also happy with the range of courses offered by their suppliers. One vendor interviewed offers 56 client/server courses, and others are in the same league.

In many cases, vendors use partners to fill gaps in their portfolio. For example, 44 of the 56 courses mentioned in the previous paragraph are provided by five partners. This is quite a common procedure, and reflects the extreme difficulty that any single vendor would have in developing a truly comprehensive range of client/server courses with no outside assistance.

3. Vendors have Various Approaches

Exhibit II-4 shows four categories of vendor. The breadth of portfolio is measured by the number of technologies covered. The extent of involvement with the user indicates the extent to which the vendor seeks to use training to reinforce an existing relationship with the user.

Exhibit II-4

Comparative Positioning of Training Vendors

Involvement with Users		Specialised	Wide
	Strategic	**IT Specialists e.g.** SAP Software AG HP	**Comprehensive e.g.** ICL Peritas BIS Digital Oracle
	Tactical	**Franchisers e.g.** Microsoft Novell	**Training Specialists** Learning Tree NETG
		Breadth of Training Portfolio	

Source: INPUT

Comprehensives cover a wide variety of hardware and software platforms. It is noticeable that system vendors are coming to terms with

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the implications of open systems, and are now prepared to teach topics that involve the use of other vendors' hardware.

Franchisers allow third parties to deliver training in their name, but impose strict quality standards before allowing the use of the name. In some cases, the course provider can charge premium prices, as if the courses were being provided directly by the franchiser.

IT Specialists typically sell hardware or software products, and have no objectives beyond helping their clients to learn how to use their products.

Training Specialists have no other business besides training, and must concentrate on providing a high quality, flexible service.

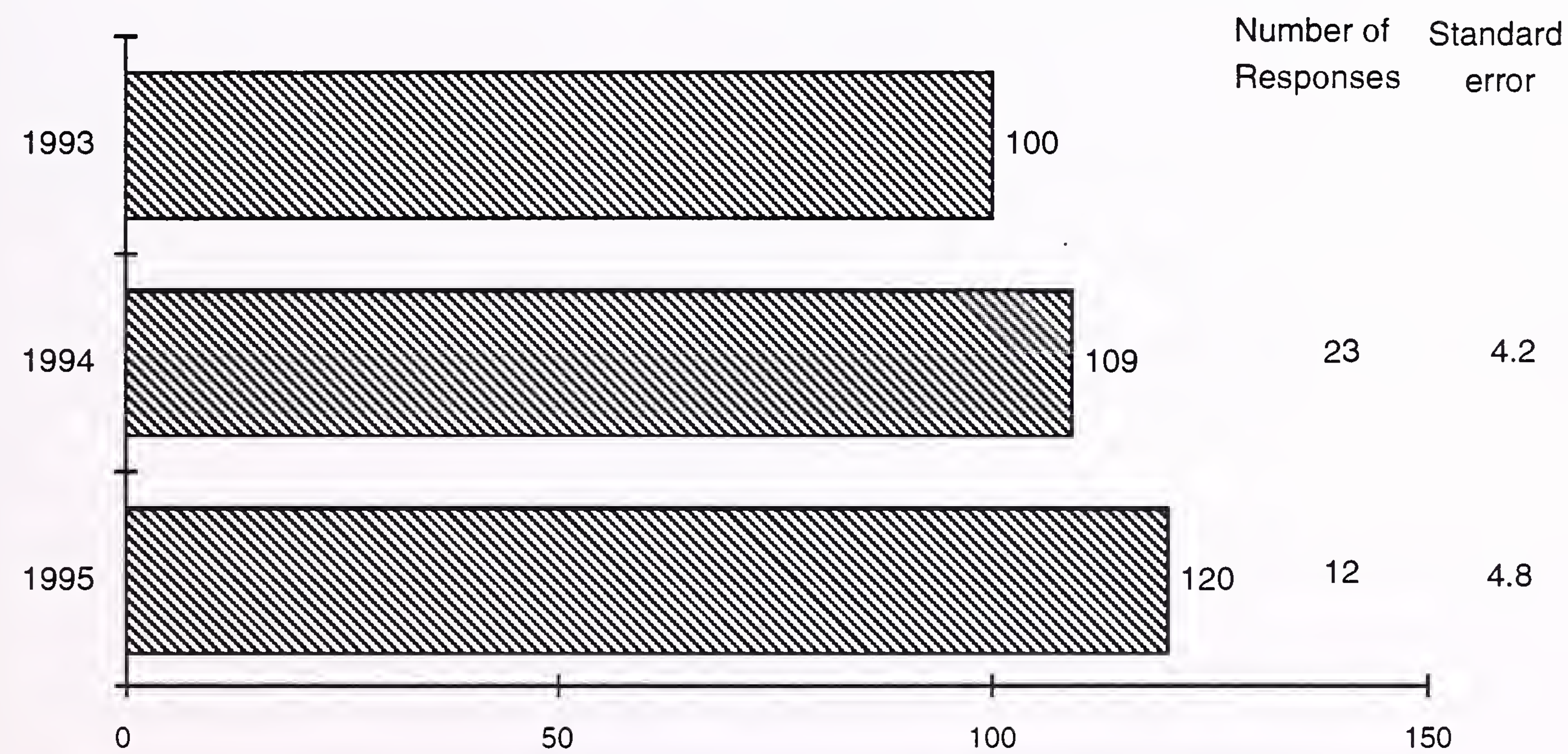
C
Future Challenges and Opportunities

1. Some Growth in Training Activity

Both users and vendors see some growth in training activity over the coming years. Exhibit II-5 summarises their views.

Exhibit II-5

Estimates of Growth in Classroom-based Training



Base–1993= 100%, unit of measurement = person days of training. *Source: INPUT*

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This growth is not staggering, but users and vendors are agreed that however large the overall increase in training activity, the share that will be devoted to client/server will increase in size.

Neither vendor nor users see Computer-Based Training (CBT) as a major contributor to client/server training. However, some respondents (notably vendors) believe CBT has a longer-term role to play, particularly in the area of end-user training, and particularly once multimedia technology is more widely accepted.

Over the next two years, users expect to make less use of internal training than is currently the case. In some cases this, is because they actively seek an independent view, and in some cases because headcount restrictions in training departments force them to resource more training activities from external sources.

2. Requirements for Success

Exhibit II-6 shows key success factors for users.

Exhibit II-6

Advice for Users

- Re-skill at the appropriate time
- Adopt Competitive Tendering
- Put in place better skills' audit mechanisms

Source: INPUT

As with all training, timeliness has a major impact on effectiveness. Training should take place before new technologies are used, but not so far beforehand that new concepts and techniques are forgotten before they can be used in a practical context.

Economic constraints mean that training cost, albeit of lesser importance than training quality and training relevance, is a major factor.

Competitive tendering ensures that high prices are not paid unnecessarily, and thorough skills audit processes ensure that ineffective training is identified and potential problems are eliminated.

Where vendors are concerned, success in a highly competitive marketplace comes from delivering the qualities shown in Exhibit II-7.

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Exhibit II-7

Characteristics of Best Client/Server Training

- Comprehensiveness
- High quality
- Cost-effectiveness

Source: INPUT

Users want a comprehensive service because of the broad range of areas affected by client/server re-skilling needs.

Users want high quality because their investment in client/server is massive, and they cannot afford to deliver a poor result because of inadequate training.

Users want a cost-effective service because their training budget does not always grow in line with their training needs, and they have to bear in mind the price of vendors' offerings.

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III

Training Challenges in the Mid-1990s

A Information Services Strategies are Evolving Fast

1. IS Departments are Treating Users as Customers

Respondents report changes in organisation to bring the user departments into a different relationship with the IS department. The IS department now has to respond more like an outside service provider, knowing that it must demonstrate value for money in order to gain its internal clients' business.

IT management now frequently speaks of Customer Service as being a key objective.

Invited to describe the business goals of his Information Services strategy, the Technical Development Manager of a large financial institution spoke of "... customer service plus profit. The main driver is to achieve excellent quality of service". Such a comment is no longer unusual, although in earlier times we might only have expected to hear it from a vendor.

At the same time the barriers between IT staff and users have come down. The IS department can no longer rely on its arcane technical jargon to impress its clients.

Development cycles have been reduced by techniques and technologies which have replaced the old cumbersome model of User Requirement Statement: Specification Agreement: Coding.

The newer model involves more contact with users and much less programming effort. Application software is increasingly implemented using highly productive tools or through the use of standard packages.

Prototyping and incremental development methods set the framework for the new relationship.

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2. Newer Ways of Working are Evolving

Project working has always been a feature of IS development. However, with the improved productivity of newer development tools and the introduction of standard packages, development cycles have shortened.

Personnel requirements for any one project are much smaller and IS professionals may find themselves working on a number of projects during the course of the year, probably in smaller teams than beforehand and having much more contact with the user.

The IS department may well be having to bid against outside service suppliers for work, and is generally obliged to regard its services as optional to the organisation rather than an automatic right.

So, in terms of skills, the emphasis is no longer uniquely on technical issues. Users report, for example, the need to teach IT specialists consultative skills. Others report the need to teach interpersonal skills.

At the senior level, the IT Director is increasingly required to develop marketing skills in the context of a deeper understanding of the business and its needs. This requirement to understand user preoccupations affects every level of the IS department.

This is a major cultural change in terms of the style of relationships. Teamwork is now the order of the day.

Historically, IT as a discipline has attracted those who like working in a logical fashion with machines. Softer skills are now required.

Under the older bureaucratic model for relationships between users and IS department, the individual IS professional had much less direct exposure to user departments and therefore, in a sense, had to take less direct responsibility in personal terms.

There are indications that the newer styles may pose considerable problems for those who are now more exposed to user requirements.

3. Users are Thinking in Terms of Open Systems

Many respondents identified *open systems* as a key element of their Information Services strategy. Typical comments included:

> "... Communication and integration of applications."

> "... Open applications software running on open systems platforms."

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> "It's a matter of moving towards open systems ... we had two hosts which didn't communicate a lot ... now with UNIX, TCP/IP and RDBMS we have interoperability and portability".

Whilst strategies indicate a move towards Open Systems, the influence of early architectures, with their reliance on big proprietary mainframe-equipped datacentres, is still very strong and will continue to be a factor for some years.

4. Users Move from Bespoke Applications to Packages

For reasons of cost and speed of implementation, many users are considering replacing existing applications with packages, and buying in packages rather than carrying out new development.

Two users explicitly identified this as being a formal part of their Information Services strategy

Users are looking for open packages that are consistent with other elements of their strategy.

5. Vendors are Faced with more Complex User Requirements

This switch to integrated packages from in-house developed and in-house supported code is facing vendors with more complex user requirements. One vendor noted that "The major trend is to open systems, also multivendor. In other words, we are dealing with customers who have got lots of different hardware platforms and also application software, so we are seeing a much wider range of requirements from our customers."

The preference for Open Systems does lead to more diverse hardware and software environments within user organisations, and vendors must accordingly expect to have to satisfy more diverse needs.

B
Client/Server is Taking a Leading Role in Information Services Strategies

1. Client/Server Technology Affects the Whole Organisation

Most users report some involvement with client/server applications. In some cases, IS management indicated that users were specifically demanding client/server solutions.

The majority of users saw the development towards client/server more in terms of the response necessary to support the rapidly changing relationships between the organisation and its customers and suppliers.

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All users see themselves as moving in the general direction of client/server. They are driven by the need to create scope for the flexibility demanded by rapid change in the business environment, the need to improve profitability, and the need to improve customer service.

As Section III (a)3 above makes clear, open systems is a common theme, and client/server was not necessarily the first term used to characterise the IS strategies of respondent companies. However, all user respondents were thinking and planning in terms of transparent infrastructures capable in the long term, of delivering applications at the workstation with access to common data.

Although client/server featured in everyone's thinking, it was often described as a future, rather than a present, development. The following comments illustrate that point:

> "Today it's not the priority—but in the longer term we shall go client/server".
>
> "Now it's nascent — but it's inevitable given the population of PCs out there with the users demanding access to mainframe data. It is formal in that it influences our purchase of software packages".

2. Client/Server Requires New Skill Sets

New individual skills are needed. Re-skilling is particularly required in the area of development tools, object-oriented design and development.

User respondents also speak of the need to re-orientate developers who have produced character-based systems towards thinking in pictures for GUI-based program.

New technical skills are needed in the following areas:

- Development Systems/Tools
- Relational Databases
- Networks
- Operating Systems for the client and for the server.

But the development of new technical skills is not the main issue which concerns users.

Historically, integration issues have been the concern of a relatively small number of people whose main function was design.

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Most developers have worked in a simple environment involving one major programming language (for example, COBOL) and one proprietary operating system.

The main skills issue is to take mainframe-exclusive people and give them skills in newer technologies.

This is seen as a task to be tackled rather than an insurmountable barrier. What is concerning people is the difficulty of finding and/or growing people with the relevant overview. Two main questions occur:

- How to ensure that what is done at the client level does not create problems elsewhere in the system

- How to pick the right technology

  (One user commented "You used to be able to say 'we are a DB2 shop'....now there are choices between, for example, DB2 on a mainframe and Paradox on a PC").

Times are changing rapidly. Writing COBOL programmes for a proprietary IBM system is radically different from writing a PC applications programme running on a network linking to a UNIX or other server, interfacing with a proprietary RDBMS.

No longer can the developer treat the environment as given. The developer needs to understand it, which requires an understanding of a number of technologies as well as a deep knowledge of a specific one.

The skills profile of the individual assumes a T-shape as illustrated in Exhibit III-1.

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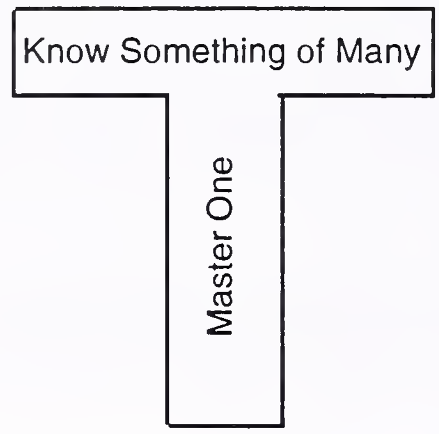
Exhibit III-1

Model Client/Server Individual Technology Skills Profile, T-Model



Source: INPUT

At a higher level, users report the perceived need for an architect as a profession within IT.

There is a need for a senior professional who understands a large number of technologies and who can pick the appropriate technology and understand its interplay with others.

With the increased use of project teams, the more intimate connection with users, the lower utilisation of big programming teams and the more extensive, complex and less predictable environment, comes the need for the specialist to have a background appreciation of the other specialisations in the team.

C
Training Faces Financial Pressures

1. The Current Economic Climate has Placed Constraints upon Budgets

Client/server calls for extensive re-skilling, yet companies do not budget for increases in training expenditure.

One vendor commented, "This is not the age of increased training expenditure. There may be localised impacts from things like client/server, but overall it is not going to increase. The technology is there, but training money is not necessarily increasing".

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2. Training Must Offer Business Benefits

Respondents indicate overwhelmingly that business needs outweigh personal development in choosing training programmes for their staff.

Respondents indicate that personal needs are met where possible, but only if they are consistent with the needs of the business.

In this environment, training managers must exercise care in their choice of training, and evaluate the relevance of training before committing to it.

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IV

The Re-skilling Imperative

A
Client/Server Has a Major Impact

1. Client/Server Poses Greater Re-skilling Challenges than Previous New Technologies

Over 45% of users and over 60% of vendors who have a view on the question respond that client/server raises greater re-skilling issues than the new technologies they were implementing five years ago. Typical user comments are:

- "Going from 3GLs to 4GLs was much easier; CASE tools were easier"
- "It is a change of culture for developers, it involves Object Orientation and event-driven programming."

A significant minority of users, however, believe that the challenge is no greater than previous changes. The following comments illustrate their view:

- "Products have got more user-friendly, it's a normal re-skilling issue"
- "We have a good population of IT professionals ... there may be difficulties, there may be some investment required, but it's no more than, say, a few years ago when companies re-skilled some of their non-IT staff."

Vendors must re-skill their own staff fast enough to keep pace with user demand and the availability of new software technologies.

Those vendors that can demonstrate leadership in client/server skills and experience will win market share from those vendors who lag behind.

Vendors must also respond to the relatively new opportunity to train departmental-level users in software skills. Departmental-level users can

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be considered as "intermittent programmers" needing a variety of training services and products to support their use of new (personal or workgroup) software.

2. Client/Server is a Challenge to IS Staff with Mainframe Backgrounds

Users note that client/server calls for extensive re-skilling, although in many cases this challenge is one for the future rather than for the present.

A particular problem concerns the move to more complex operating environments.

One respondent comments that he is finding that people from mainframe-type development backgrounds are not well equipped for the complexities and protected environments of networks. Of those he has tried to re-skill, he estimates a success rate of less than 50%.

Another respondent notes that his team has had to learn a lot of new technologies and cites the example of an analyst programmer from a mainframe having to learn Novell systems.

This user also remarks on the need to come to terms with different ways of thinking, with object technology being a typical example.

3. Many Areas Require Re-skilling

Responses of users invited to assess the significance of the re-skilling task for various topics user responses are as shown in Exhibit IV-1.

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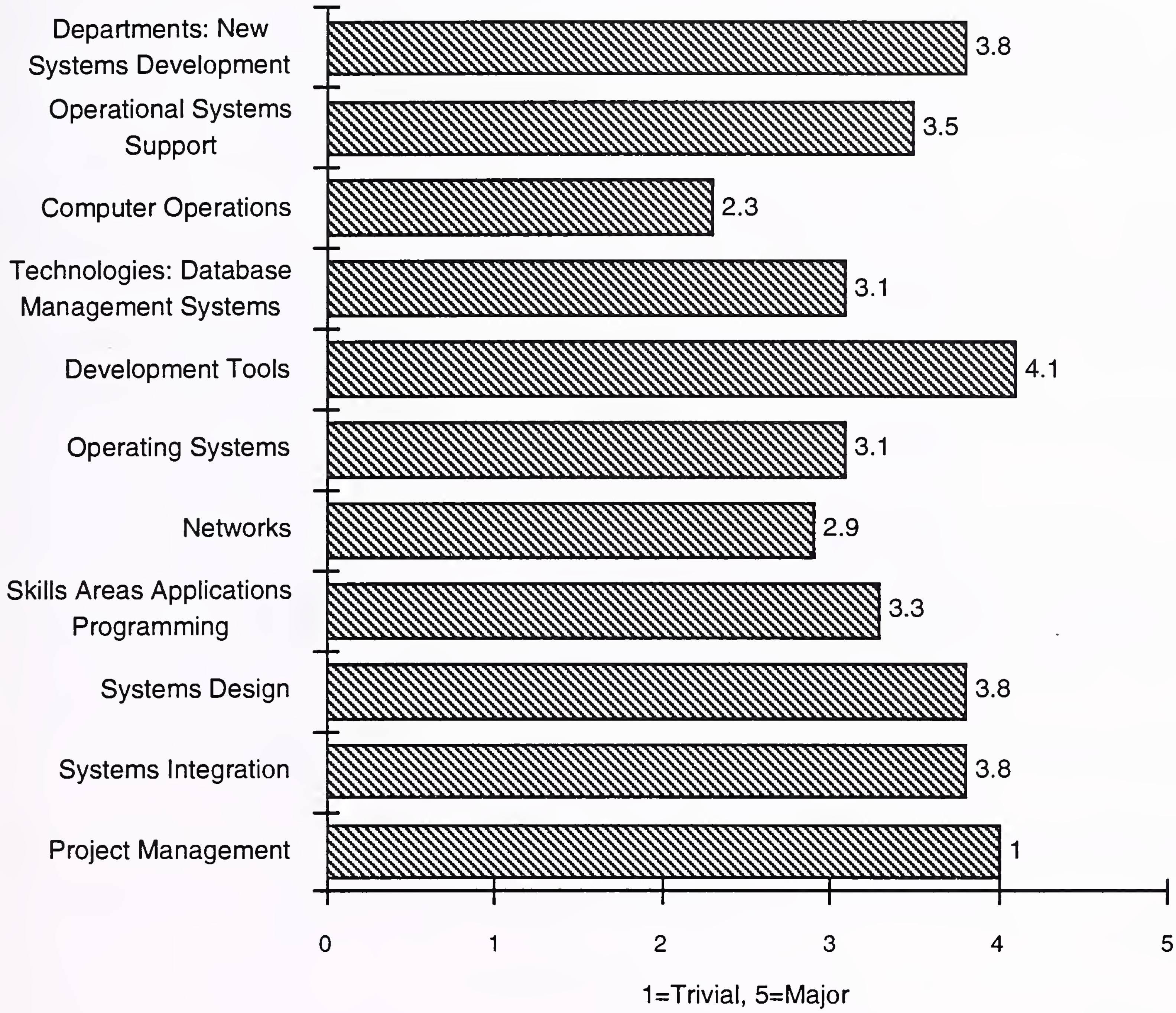
Exhibit IV-1

Significance of Re-skilling Task – User View



15 User respondents. Standard error = 0.2 *Source: INPUT*

Nine out of eleven average user responses are above the mid-point of 3.0. Only four areas are scored very highly, i.e. above 3.75.

Vendor responses to the same question are shown in Exhibit IV-2.

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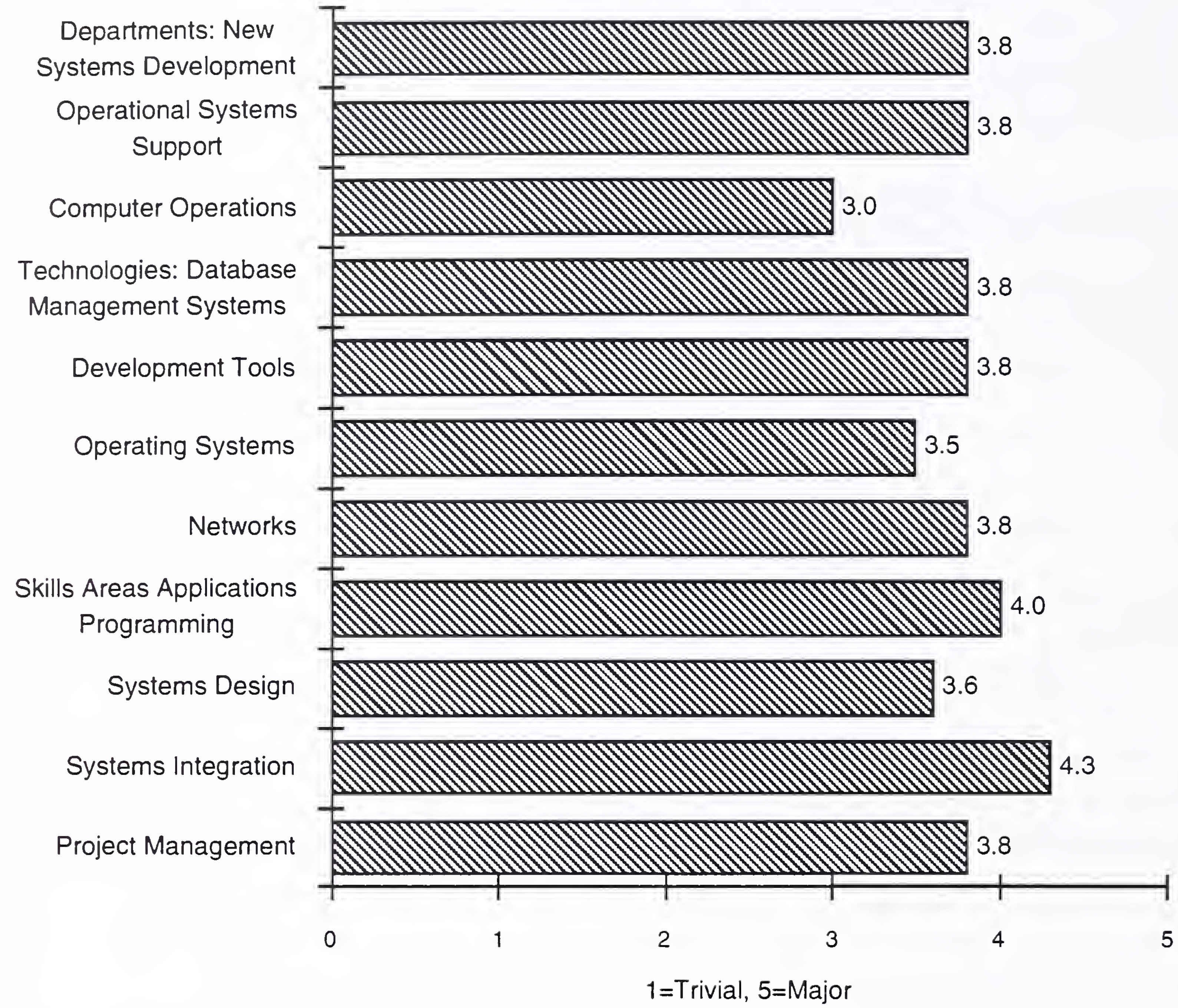
Exhibit IV-2

Significance of Re-skilling Task – Vendor View



13 Vendor respondents. Standard error=0.1 *Source: INPUT*

Ten out of eleven average vendor responses are above the mid-point of 3.0, which, taken together with the user responses, gives some indication of the wide range of areas that need re-skilling as a result of the introduction of client/server technology.

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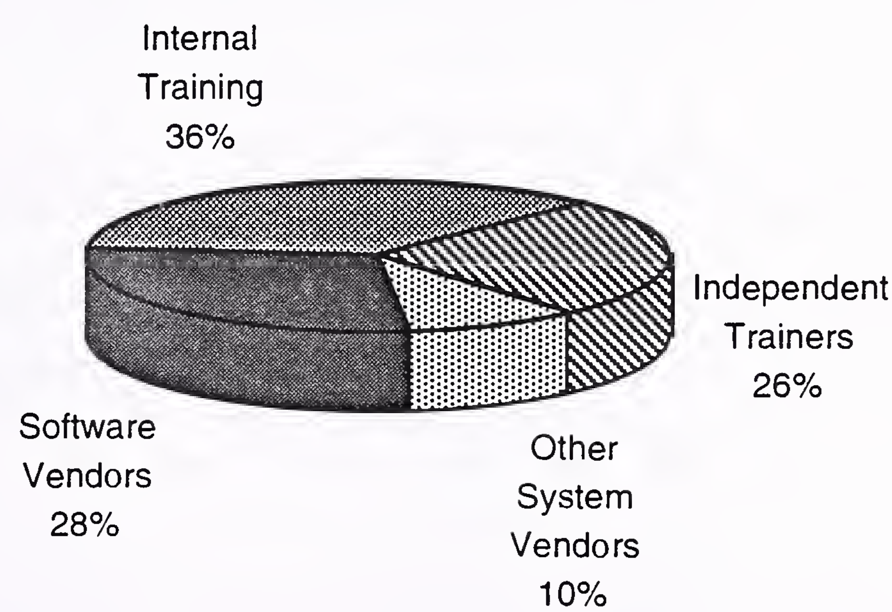
B
Users Take a Positive View

1 Users Place Great Reliance on Internal Training

User respondents, when asked to indicate the percentage of their total training needs supplied by various sources, commented as indicated in Exhibit IV-3.

Exhibit IV-3

Sources of Supply for Training



Number of responses =15. Average percentage of total training days supplied by source of supply. *Source: INPUT*

Internal training is the most popular single source, although if one aggregates the three external sources, they account for over 64 per cent of all training.

2. There is no Skills Crisis

Section IV.C indicates the size of the re-skilling challenge. In order to understand whether this challenge can easily be met, INPUT asked respondents if they thought there is a crisis.

The following quotation sums up the quiet confidence of users, in spite of the caveat about "global vision":

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"If we were to transform our systems overnight into client/server then we would have a skills crisis, but where we have the experience we took capable people and they coped. Clearly some people may have problems but that has always been the case.

"We have stuck with tools close to those which they knew. The problem is the global vision: you need to think events, synchronously, process—this is new. There are a number of system elements which matter and you have to be aware of what is going on everywhere. This is different".

In the progress towards client/server, users are relying on service vendors to support them and to transfer skills.

Users are implementing pilot schemes using their best people, and they have not yet started to implement the big conversion of their workforce. They may not choose to do so. They may concentrate on building from the ground up, i.e. with new recruits.

Users have not finalised their strategy, but they are confident of their ability to choose and implement an appropriate approach.

3. Users have a Favourable View of Suppliers

Fifty per cent of the users who responded to the question indicate unconditional agreement with the proposition that their training suppliers offer value for money.

The rest are generally satisfied, although two comment that some suppliers (typically those who "think themselves good") are somewhat overpriced. Even then, it may be possible to negotiate a better price.

Invited to rank their top three training suppliers, users mentioned many different vendor companies. Only three were mentioned more than once:

- IBM (rated first by four users, second by two users)
- BIS (rated second by two users)
- Integrata (rated third by two users).

Although some users were critical of IBM's offerings (lack of flexibility and too theoretical an approach were mentioned), they clearly retain a leading position in the training marketplace.

Individual client/server skills needs have been met in the past and there is already a very well established market in some relevant courses.

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Indeed, in some cases, the courses are well into their life cycle (e.g. UNIX, Oracle), having reached the stage of a commodity offering and being differentiated on price.

What is new is that major vendors are now offering comprehensive course programmes to meet the overall needs of users under a client/server banner.

Exhibit IV-4 shows one vendor's client/server offering.

Exhibit IV-4

Client/Server Courses Offered by One Vendor

Topic	Number of Courses
C/S Analysis and Design	2
Oracle	16
Ingres	8
Informix	5
UNIX	8
Networks/Communications	7
Visual Basic	4
C	3
C Programming	3
Total Standard "Client/Server" courses	56

Source: INPUT

Other vendors claim a larger number of courses. IBM Deutschland is introducing new courses aimed at the conceptual level for senior staff in both IS and general management and claims that, with these, it will have some 70 relevant courses.

The client/server portfolio varies with the natural audience of the supplier concerned, and with its position in the market. It also reflects the vendor's interest, or lack of it, in alliances. In the client/server portfolio illustrated in Exhibit IV-4 above, 44 course titles out of a total of 56 are provided by five partners.

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The following quote from a hardware vendor illustrates the trend for some vendors to look for partners in order to be able to offer an exhaustive range of courses:

> "An interesting trend, and this is possibly the most significant, is just how willing companies that were adversaries are to collaborate ... I have been speaking with (two hardware vendors) and we have collaborations with (three other vendors). Nobody is trying to do it all on their own—everyone wants to see is there a way we can do business together because we are all typically going for the same bids".

Users were generally satisfied that their needs were covered by the offerings currently available. Even if gaps existed, they could find suppliers who were willing to build an appropriate solution for them.

Vendors, naturally enough, were unwilling to comment on any plans they might have for filling any gaps that they believed to exist.

C
Vendors Adopt Varying Strategies

Exhibit IV-5 contrasts possible strategies for training in two dimensions.

In this analysis, four main groups are identified. Breadth of portfolio (*Specialised* or *Wide*) is the measure of the number of technologies covered. Extent of involvement with the user (*Tactical* or *Strategic*) indicates the extent to which the vendor seeks to use training to reinforce an existing relationship with the user.

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Exhibit IV-5

Comparative Positioning of Training Vendors

Involvement with Users			
	Strategic	**IT Specialists e.g.** SAP Software AG HP	**Comprehensive e.g.** ICL Peritas BIS Digital Oracle
	Tactical	**Franchisers e.g.** Microsoft Novell	**Training Specialists** Learning Tree NETG
		Specialised	Wide
		Breadth of Training Portfolio	

Source: INPUT

1. The Comprehensives Cover the Field

As customers have moved away in hardware and software from the original single-sourcing to a pronounced multivendor policy, the platform vendors have moved away from teaching their own systems only and now support those of their competitors. For example, Digital offer courses in UNIX with parallel streams covering implementations on Digital and IBM machines.

In this context the client/server syllabus — which takes in a number of different technologies – is a natural development.

So the comprehensive supplier is positioning himself to meet a large range of user training requirements by claiming exhaustive lists of courses.

Part of the courses portfolio is not new. UNIX courses are well established, for example. New courses are also being developed, and, as noted above, collaboration with other vendors helps cover gaps.

Two vendors report that they are actively reviewing the concept of outsourcing for training, to take advantage of the availability of relevant training from third parties and to offer an attractive service in a

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fragmented training market to clients who may well be running down their internal training and training management functions.

2. The Franchisers Impose Quality Standards

On the issue of enlarging the portfolio, the *comprehensives* benefit from the policy of those companies which have a limited direct involvement with training but which support those who offer training in specific products–the "franchisers".

Novell and Microsoft courses are now offered by a number of vendors on a basis akin to a franchise arrangement–strict quality control in return for the use of the name.

Quality Assurance includes the concept of qualifications earned by those attending the course. This is reported to be a good selling point among users.

In the case of Microsoft at least, the quality demanded is sufficient for the course provider – the franchisee – to command a premium over the general run of PC trainers.

So the franchiser gets a lot of people trained on his system by leveraging the infrastructures and client bases of the *comprehensives*, and for that matter of any other appropriate supplier.

3. The Specialists Stick to their Strengths

Some vendors report that they are training their customers to use their client/server products and that is all that they intend to do in this arena. Training supports their product, which has some role in client/server architectures.

In contrast to the *comprehensives*, the specialist is content to remain focused and to offer no more courses than are needed to support the immediate skills needs created by the use of the product.

In the case of specialist trainers, those companies who do nothing else but training, the overall approach is different.

Training is not a subsidiary part of a set of strategic offerings, so the overall relationship with the client is not as developed. The company lives or dies by delivering appropriate training, winning business by exploiting strengths of quality, timetabling, flexibility or whatever.

This survey did not extend to some small specialist trainers with small portfolios, but for such vendors there is clearly scope for alliances with *comprehensives* to fill out the latter's portfolio.

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4. A Niche Vendor takes a Radical Approach

Of the vendors surveyed, only Sligos had an approach which was radically different.

Sligos' Management of Change department looks at user human resource and skills issues makes recommendations as to organisational changes and proposes training courses from within the group and outside.

It is a policy which emphasises the tailor-made training offering rather than the standard course.

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V

Future Challenges and Opportunities

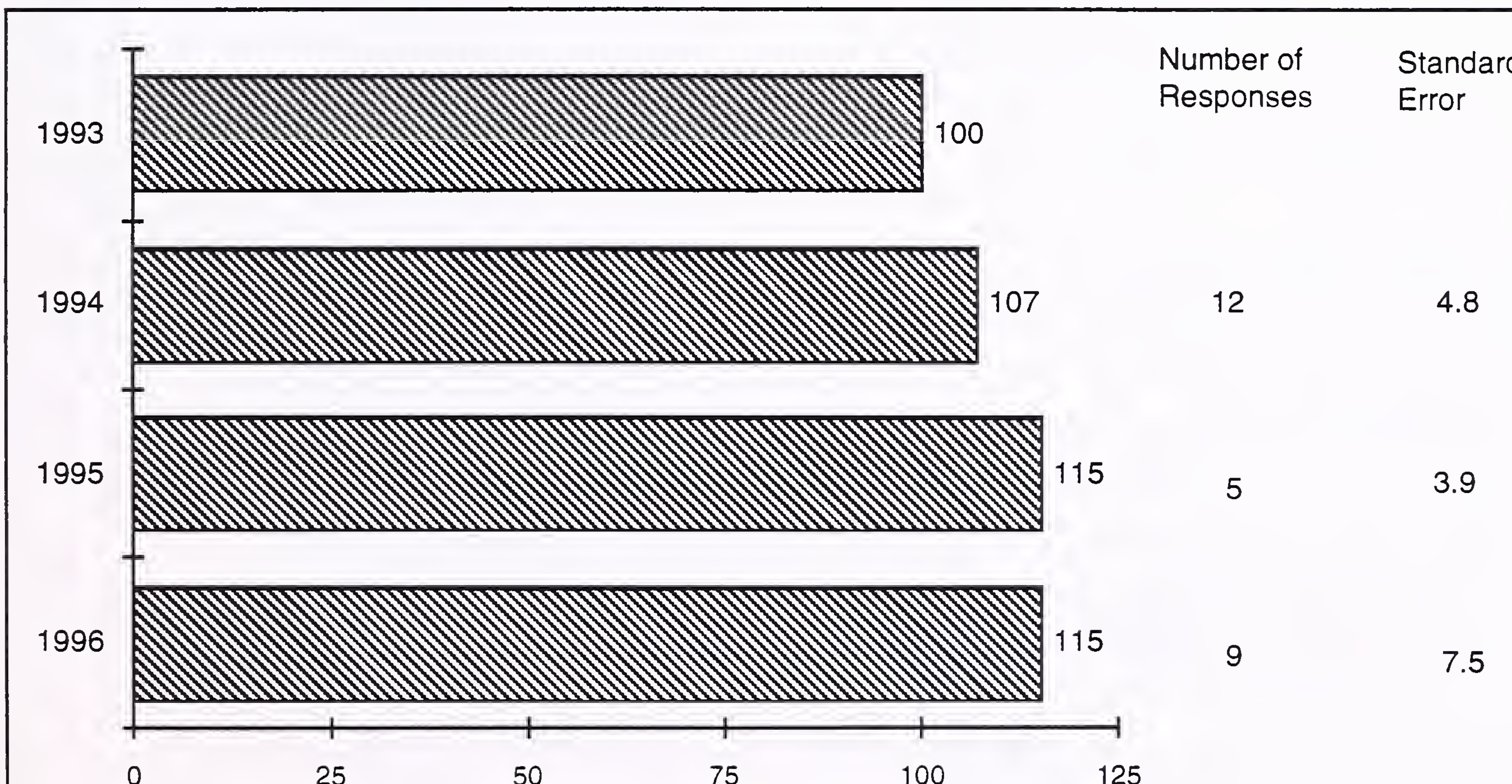
A
Modest Prospects for Growth in Training Activity

1. Steady Growth in Classroom-based Activity

Users were invited to forecast growth in classroom-based activity in 1994, 1995 and 1996. A summary of their forecasts is contained in Exhibit V-1

Exhibit V-1

User Estimates of Growth in Classroom-based Training



Base –1993=100%, unit of measurement = person days of training.

Source: INPUT

Vendor responses to the same question are shown in Exhibit V-2.

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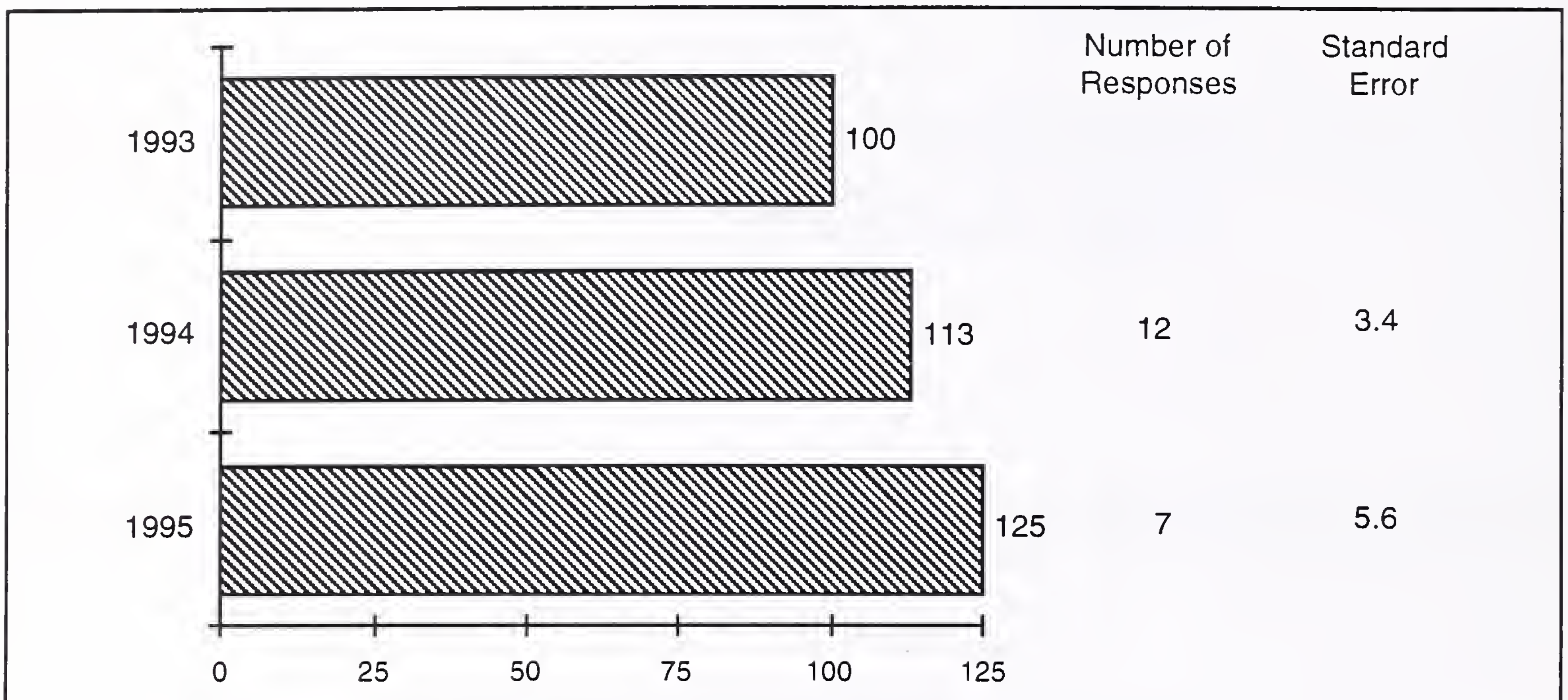
Exhibit V-2

Vendor Estimates of Growth in Classroom-based Training



Source: INPUT

Caution should be exercised in interpreting the figures for 1995 and 1996, since so few respondents are prepared to look that far ahead (indeed, no vendors at all are prepared to estimate what might happen in 1996).

Perhaps it is not surprising that, where they do commit themselves, the vendors are a little more optimistic than the users, given that their job is to provide training.

With these caveats, it is possible to summarise the findings in terms of a modest but not startling growth in classroom-based training.

Users recognise that client/server is a technology that requires a significant amount of training, regardless of the extent to which overall training activity will grow.

Users expect client/server training to account for an increasing share of whatever overall training expenditure they incur.

2. Computer-based Training is still not Widely Taken Up

User respondents do not display significant enthusiasm for Computer-based Training (CBT) as a vehicle for acquiring client/server skills.

CBT is generally regarded as being a peripheral activity of limited application, possibly of more use to end-users than to IT professionals.

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Vendors, perhaps taking a longer- term view, see some potential in the use of CBT, although their enthusiasm is guarded in many cases.

Again, the potential application in end-user environments is noted, as the following comment shows:

> "We have some experience of this [CBT] and see a future for training people, e.g. users, who can't be spared for live training. We've done this for clients".

The advent of multimedia technologies is observed to be a factor that would help to accelerate the acceptance of CBT, and some vendors expect CBT to increase its penetration.

3. Users Forecast Growth in Use of External Training

In section IV.B.1 internal training is estimated to account for around 36% of all training activity.

Looking into the future, over 65% of those users who have a view on the matter feel that by 1996 they will rely less on internal training, and more on the various forms of external training, although they are reluctant to give precise estimates of percentage changes in the overall mix.

There are both active and passive reasons for this change. Some users indicate that they have made a conscious choice to make more use of independent vendors. The following comment indicates one possible reason:

> "... some of the training needed will be independent to get a view uninfluenced by hardware and software vendors".

On the other hand, continuing headcount reductions oblige some users to look outside for sources of training supply. This is not always a welcome change, as one user commented:

> "I think it's bad because it means buying off-the-peg training – not good for productivity in a big organisation like us. We may only need about 30 to 40 percent of a standard course because, say, on [a popular Word Processing package] we only have certain procedures to cover on the tool ".

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B
Requirements for Success

1. Users Should Re-skill in Time

There can be no doubting the extent of the need for training/re-skilling throughout any organisation that adopts client/server, but users must consider carefully the timing of their training.

Timeliness is always a key factor in training, and particularly so where client/server is concerned.

A severe loss of confidence can affect staff who are faced by major new technical challenges if they are expected to overcome those challenges before they are properly trained.

Faced by tight budgets, managers are inclined to cut back on “soft” items like training, but such economies are false.

Individuals who have gained a proper understanding — not only of how to use a new development tool, for example, but also why it is being used and how it will affect users — approach projects with improved morale and with a better chance of avoiding costly mistakes.

On the other hand, training should not take place too early. It is most frustrating to forget the precepts that have been learnt at great cost before the opportunity has arisen to put them into practice.

2. Users Should Make Extensive Use of Competitive Tendering

In the current economic climate, vendors compete hard for their share of users’ training expenditure. That being the case, it is surprising that so few users follow competitive tendering procedures when setting out to put training programmes in place.

Exhibit V-3 analyses the frequency of use of competitive tendering for supply of training services.

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Exhibit V-3

Cases in which Training Expenditure is Subject to Competitive Tender

Less than a quarter	22.2%
Less than a half	33.3%
Less than three-quarters	22.2%
Between three-quarters and all	22.2%

Source: INPUT

Percentage of all respondents who subjected various amounts of training expenditure to competitive tender. Number of responses 9. Because of rounding, percentages may not add up to 100%.

This shows that more than half of the users who responded follow competitive tendering procedures for fewer than half of their training purchases.

Users who wish to be successful should always have quality of training in the forefront of their mind but they cannot ignore the budgetary constraints that are placed upon them, and they must at least give some consideration to cost in choosing a supplier.

3. Users Should Put in Place Better Skills Audit Mechanisms

Activities that should take place before training are discussed in section V.B.2. Turning now to the aftermath of training, INPUT's research shows a lack of careful assessment by users of the effectiveness of training programmes.

Users were asked how they review skills and assess the investment they have made in training. One user speaks of "annual skill appraisal against forward workload, individual training plans and review against performance after the course", but he was in a minority. Most are making do with either informal or non-existent procedures for assessing the cost-effectiveness of training.

If the implementation of client/server technology is a training-intensive activity, then it is particularly important to assess the value that is being added by the training process.

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4. Vendors Should Offer Comprehensive and Cost-effective Portfolios

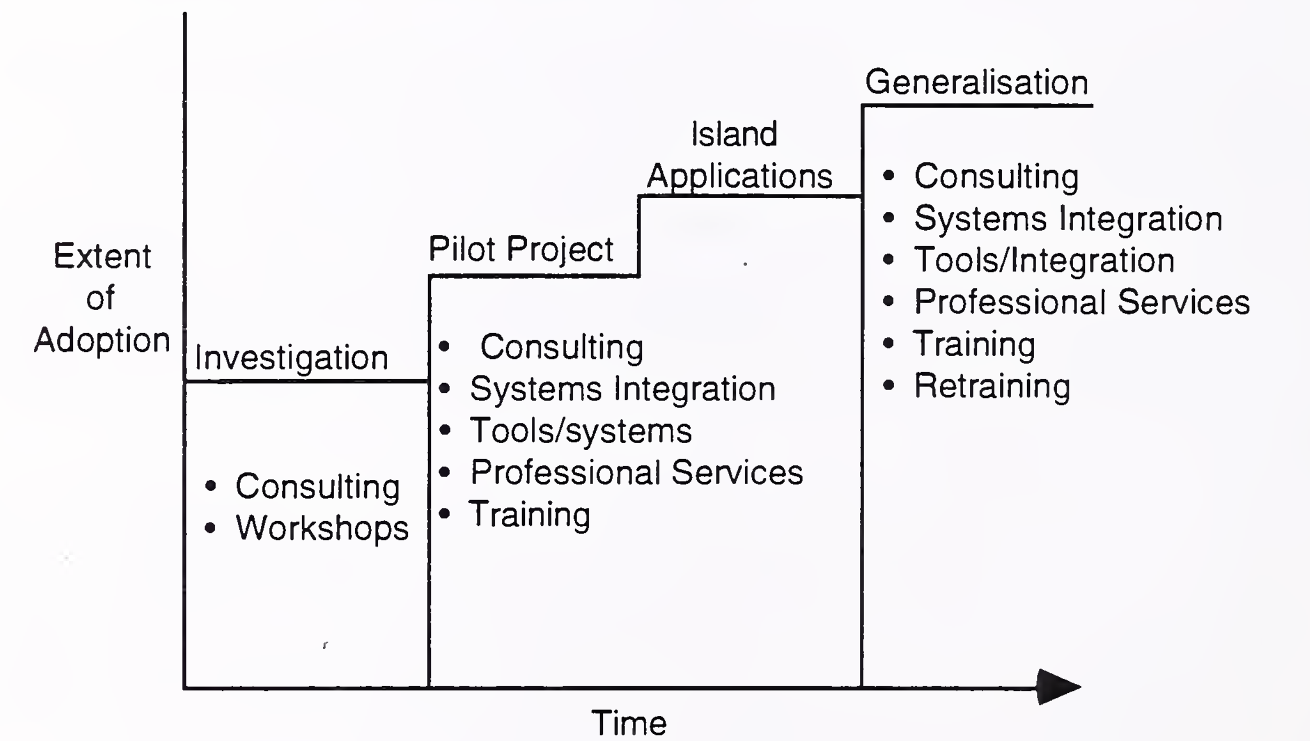
a. Client/Server Training Offers a Variety of Opportunities to Vendors

Training is an important issue and a source of revenue but many of the leading vendors tend to see client needs throughout the process of introducing client/server primarily in terms of services and products other than training. They have, in other words, other sales opportunities to pursue.

Exhibit V-4 indicates the progression of user needs in the stages of migration to client/server.

Exhibit V-4

Services at Stages of Adoption of Client/Server



Source: INPUT

At the *investigation* stage, the information issues are conceptual. The user organisation seeks advice and details of supplier offerings.

The possible formal events for information gathering are seminars and workshops and these may be provided by a training vendor.

Trainers report that at this stage, their consultancy divisions often lead the way and staff such events.

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As the organisation moves to implementation, as *pilot projects* and *island applications* of varying scale and scope are installed, its needs expand. Development tools and other software are required.

The organisation may well elect to use the professional services of a supplier on the first system for one or more of a number of reasons:

- To increase speed of implementation
- To cover for lack of in-house skills
- To use an outside supplier as a skills transfer agency.

For whatever reason, the overall user need for services goes far beyond the small number of courses which may be purchased at this stage (for example, for training on the new tools).

Major service vendors recognise this need, and are geared to meet it. So training stays where — in the hierarchy of the IT community's preoccupations — it appears to belong in the second order of priority.

The major training/retraining activity is seen in the *generalisation* phase. Here, as ever, the opportunities are seen by service vendors in terms of their “heavy ” service offerings like Professional Services and Systems Integration.

The importance of training, however, as a key element in any successful implementation of client/server technology cannot be measured only in terms of the revenue stream it brings to a vendor. Indeed, vendors who neglect it may well find themselves unable to take advantage of the more lucrative opportunities that are available to them in other areas.

Users look to vendors who can offer comprehensive support in all areas, throughout all stages of their take-on of client/server.

Users seek out training that addresses the needs of all individuals whose activities will be affected by client/server — not just IT professionals, but users and all types of management within both the Information Services and user areas.

b. Users Seek Out Vendors whose Offerings are Reasonably Priced

The importance of cost in today's economic climate is discussed in section III.C. In most cases, the quality and comprehensiveness of the training offered are the major factor in a user's choice of a training service. Those things being equal, however, cost becomes a factor. Vendors, therefore, must take pains to ensure that their pricing is competitive.

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A

Client/Server Training Portfolios

The sales literature of selected training vendors was examined to establish the extent to which client/server courses were promoted.

This Appendix describes and comments upon the offerings of the following vendors:

- Oracle
- Integrate
- IBM Deutschland
- Learning Tree International
- SNI
- Peritas

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A
Oracle

1. Description

The Oracle Training Services Course directory presents some 60 or more courses mainly relating to Oracle products. No specific reference to client/server is made but the whole offering is introduced under the banner of open systems. The introduction to the brochure from the Director of Training services reflects the need for IT professionals to acquire skills in a number of different technologies; more than one database system may well be used in a given computer system, for instance.

Reference to client/server is made in the area of desktop and end-user computing.

Business partnerships to provide “an all-embracing curriculum” are referred to. These are with:

- Digital Learning Services
- Open Education
- Pyramid Professional Services
- Hewlett-Packard Educational Services
- McDonnell Douglas Information System
- Aims Systems
- KPMG Management Consulting
- QA Training Ltd
- Peritas
- Azlan

Through partnerships, Oracle gives its customers access to a range of technology, methodology and management courses.

2. Commentary

The Oracle brochure reflects the view that client/server and Open Systems places requirements on a training provider beyond those which can be reasonably met by one organisation - hence the large number of

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partnerships. Between Oracle and its partners a comprehensive package of courses could be put together for any re-training exercise. However, the absence of specific client/server branding is an interesting reflection of the company's view that its technology is self evidently central to the process of introducing client/server architecture but that client/server is not yet a key issue for promoting courses.

B
INTEGRATA Training

1. Description

INTEGRATA presents a large number of courses under the general headings of Management and Communication, Courses for DP Specialists and Courses for DP Users. It presents its offering as independent of manufacturer, but has a number of courses on specific manufacturers' technologies as well as more general overview courses. A new section is being introduced this year to cover client/server technology in which four courses (including two new courses) are promoted. They are aimed mainly at teaching concepts to managers.

In addition, the corporate introduction reflects the merger between INTEGRATA Training and CDI, the latter being specialists in devising specific course/curriculum programmes for companies on an in-house basis. The introduction also emphasises the challenge of re-training for client/server which is envisaged as a highly personal process based on some shared concepts on distributed systems networking and new development technologies and further on individual professionals developing their own skills.

2. Commentary

The INTEGRATA catalogue perhaps does not reflect the importance which INTEGRATA is attaching to client/server.

C
IBM Deutschland

1. Description

IBM Deutschland promotes its client/server courses in a new brochure under the general title of "Open client/server Training". This is based on what it calls a complete, practical and product-independent curriculum, and is the result of considerable research work by IBM. The curriculum is being introduced in other European countries as well.

The client/server curriculum covers the following titles:

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- Open Client/Server Systems - Introduction
- Network Concepts for Open Client/Server Systems
- Concepts and Development of Distributed Networks
- Basic Design of Open Client/Server Applications (planned)
- CASE Tools in the Open Client/Server World (planned)
- Development of Open Client/Server Systems (Introduction)
- Data Management in Open Distributed Systems
- Specification of Open Client/Server Systems
- Design and Implementation of Distributed Relational Databases
- System and Network Management in Multivendor Environments
- Development of User Interfaces (planned)
- Integration Techniques (planned).

In addition, the brochure contains details of some 60 courses covering network systems implementation, application development and databases. The majority of the courses relate to technologies which are IBM specific. There are some additional client/server courses at the more detailed level (e.g. client/server in the MVS/ESA environment).

2. Commentary

IBM's course offerings in this area are among the most clearly branded with client/server compared with other vendors.

D Learning Tree International

1. Description

Learning Tree's brochure contains details of some 60 courses of which eight are specifically branded as client/server. Other courses are indicated as being relevant to a generic group entitled "Client/server and Internetworking courses".

The specifically client/server courses are:

- Business Process Reengineering

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- Implementing Open Systems
- Introduction to Client/Server Computing
- Client/Server System Design and Configuration
- Building Client/Server Applications
- Distributed Programming using DCE
- Relational Databases: Design Tools and Techniques
- Data Management for Client/Server Systems.

Some of these courses are specified by Learning Tree as core elements of a certification programme for its "Certified Client/Server Systems Professional".

These core courses are:

- Introduction to Client/Server
- Client/Server Systems Design
- Data Management
- Building Applications.

To qualify, the student must take an additional course from among the following electives:

- Implementing Open Systems
- Business Process Reengineering
- Distributed Programming using DCE
- Relational Databases: Design Tools and Techniques
- UNIX Hands-on Workshop
- Windows NT Hands-on Workshop
- OS/2: a Comprehensive Hands-on Workshop.
- Local Area Network: Implementation and Configuration.

The specific objective of the certification programme is to teach:

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- Evaluation of benefits and challenges in client/server computing
- Migration of legacy systems and legacy applications to client/server
- Design and configuration of client/server systems
- Application of open interface standards
- Organisation management and accessing of data in a client/server environment
- The evaluation of approaches to distributed database management
- Building client/server applications with visual development tools
- Use of rapid prototyping techniques
- Implementation of client/server solutions.

The other courses offered by Learning Tree are promoted under the following headings:

Networking, Novell Netware, Operating Systems/Programming, Software Development, PC Technical Support, Management.

2. Commentary

Learning Tree's approach is substantially independent of vendor and its certification programme goes some way to meeting the concept expressed in user interviews of a core of shared knowledge along with specialist expertise in one particular area.

Some of Learning Tree's courses offer overviews of a number of different technologies, satisfying another requirement encountered in user interviews - the need to know which technology was appropriate for a particular job.

E
Siemens Nixdorf (SNI)

1. Description

SNI courses are presented in catalogues which describe some 500 courses. The Information Management catalogue describes titles organised under the headings of software development, data communication and networks, databases, personal development, management and office methods/automation. Client/server computing is included in the courses for data communication and networks.

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A supplement to the Information Management catalogue describes the courses seen as specifically relevant to server computing. Eleven courses are described including "Client/server Computing" — a concept introduction - together with courses in the areas of remote/distributed data storage, distributed processing, distributed presentation, presentation, CASE tools for client/server implementations and Local Area Networks.

Other catalogues are available for other areas such as multi-user/workstation/PCs, and system-specific training on BS 2000 and on R/3 Live.

2. Commentary

The SNI strategy on client/server computing does not seem to be fully represented in this documentation.

F
Peritas

1. Description

The Peritas client/server offering is contained in its "The Open Systems UNIX Training Portfolio" which covers some 60 courses mainly concerned with UNIX. UNIX versions AIX, SCO and Solaris are taught, as well as those relevant to ICL equipment. The Solaris courses are supplied by SunMicro Systems on a partnership basis.

Client/server is specifically included as a topic within a course aimed at management, "Integrated IT Systems — A Management Overview". The majority of the courses are aimed at developers and support staff and include courses on C and networking.

2. Commentary

Client/server in this document seems to be almost equated with UNIX.

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B

User Questionnaire

The following was the first of two questionnaires used to gather information for this study.

A Respondent Background

A1 What is your company's main business?

A2 What is your own area of responsibility?

A3 How many professional IT staff are there within your area?

A4 Could you indicate the percentage of your total expenditure on IT which is attributed to:

TRAINING %
SOFTWARE SUPPORT %
CONSULTANCY %

Are these related to your company's total IT spend or that of your area ?

A5 Approximately how many training days/employee is that?

A6 How would that vary, if at all, between

NEW SYSTEMS DEVELOPMENT?
days/employee/year
OPERATIONAL SYSTEMS SUPPORT?
days/employee/year
COMPUTER OPERATIONS?
days/employee/year

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B
IT Trends and Strategies

B1 What are the principal trends in your company's Information Systems Strategy (ISS)?

B2 What are the main business results your ISS is intended to achieve?

B3 What is the role of Client/Server if any in your overall strategy?

B4 What are the main IT issues in your ISS?

C
Impact on Skills

C1 In the successful implementation of newer architectures and technologies like Client/Server, how would you score the issue of re-skilling in terms of its importance on a scale 1 to 5, where 1= unimportant and 5= most important?

C2 Compared to the re-skilling issues raised five years ago are those raised by Client/Server etc:

GREATER?
OF THE SAME ORDER?
LESS?

Please comment.

C3 Does Client/Server raise re-skilling issues which are different from those raised by other IT developments?

C4 Is there a crisis of skills relating to Client/Server?

C5 How would you score the following skills and job areas where re-skilling may be required?

Please evaluate the re-skilling task on a scale 1 to 5, where 1= trivial and 5= major?

DEPARTMENTS:-

NEW SYSTEMS DEVELOPMENT
OPERATIONAL SYSTEMS SUPPORT
COMPUTER OPERATIONS

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TECHNOLOGIES:-

DBMS
DEVELOPMENT TOOLS
OPERATING SYSTEMS
NETWORKS
OTHER :

SKILLS AREAS:-

APPLICATIONS PROGRAMMING
SYSTEMS DESIGN
SYSTEMS INTEGRATION
PROJECT MANAGEMENT
OTHER :

C6 Please indicate any changes in organisation, either within IT or between IT and the users which give rise to the need for re-skilling.

C7 How would you rank the importance of new patterns of working in creating re-skilling needs on a scale 1 to 5, where 1= unimportant and 5= most important?

D
Strategies for Re-skilling

D1 Please indicate the percentage of your total training needs supplied by:

INTERNAL TRAINING	%
SOFTWARE VENDORS	%
OTHER SYSTEMS VENDORS	%
INDEPENDENT TRAINERS	%
OTHERS	%
(TOTAL)	100%)

D2 Please estimate any changes in numbers of training days/employee over a time frame starting last year — in percentage terms:

1993	100%
1994	%
1995	%
1996	%

D2a How do any changes link to the issue of re-skilling?

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D2b Do you expect any changes in use of self-administered learning systems, like CBT?

D3 In 1996 what do you expect the split between the following sources of training to be?

INTERNAL TRAINING	%
SOFTWARE VENDORS	%
OTHER SYSTEMS VENDORS	%
INDEPENDENT TRAINERS	%
OTHER	%
(TOTAL)	100%)

D4 Please estimate any changes in your use of CONTRACTORS, over a time frame starting last year, in percentage terms :

1993	100%
1994	%
1995	%
1996	%

D4a How do any changes link to the issue of re-skilling?

D5 Please estimate any changes in your use of CONSULTANCY over a time frame starting last year - in percentage terms:

1993	100%
1994	%
1995	%
1996	%

D5a How do any changes link to the issue of re-skilling?

E Decision Factors

E1 What are the principal factors in setting budgets for training?

E2 How would you score the following in terms of their importance in deciding on training on a scale 1 to 5, where 1= unimportant and 5= most important?

BUSINESS NEEDS
PERSONAL DEVELOPMENT
OTHER

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E3 What proportion of the total training spend is subject to competitive tender ?

1 - 25%
26 - 50%
51 - 75%
75 - 100%

Please comment.

E4 Does the use of multi-disciplinary project teams require new approaches to reskilling?

F
View of Suppliers

F1 Do your strategic training suppliers give you value for money?

F2 Who are the top three and what are their strengths and weaknesses?

1

STRENGTHS

WEAKNESSES

2

STRENGTHS

WEAKNESSES

3

STRENGTHS

WEAKNESSES

F3 Which — if any — of your training needs are not adequately catered for because of gaps in the training market?

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G
Skills Audit Mechanisms

G1 How do you review skills and assess investments you have made in skills transfer mechanisms like training?

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C

Vendor Questionnaire

The following was the second of two questionnaires used to gather information for this study.

A Respondent Background

A1 What is your company's main business?

A2 What is your own area of responsibility?

A3 How many full time trainers are there within your area?

A4 Could you indicate the percentage of your training revenues as a proportion of revenues?

Is that a percentage of your company's total revenues?

If not, of what is it a percentage?

B IT Trends and Strategies

B1 What are the principal IS trends that influence strategy for training offerings?

B2 What are the main business results your training offerings are intended to achieve?

B3 What aspects of Client/Server do you intend to help your clients with?

B4 Could you supply me a list of your Client/Server courses?

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C
Impact on Skills

C1 In the successful implementation of newer architectures and technologies like Client/Server, how would you score the issue of re-skilling in terms of its importance on a scale 1 to 5, where 1= unimportant and 5= most important?

C2 Compared to the re-skilling issues raised five years ago for your customers, are those raised by Client/Server etc:

Greater?
Of the same order?
Less?

Please comment.

C3 Does Client/Server raise re-skilling issues which are different from those raised by other IT developments?

C4 Is there a crisis of skills relating to Client/Server:

For you?
For your customers?

C5 How would you score the following skills and job areas in which re-skilling may be required?

Please evaluate the re-skilling task on a scale 1 to 5, where 1= trivial and 5= major?

Customer departments:-

New systems development
Operational systems support
Computer operations

TECHNOLOGIES:-

Dbms
Development Tools
Operating Systems
Networks
Other:

Skills Areas:-

Applications programming
Systems design

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Systems integration
Project management
Other:

C6 Please indicate any changes in your customers' organisation which give rise to the need for re-skilling.

C7 How would you rank the importance of new patterns of working in creating re-skilling needs on a scale 1 to 5, where 1= unimportant and 5= most important?

D
Strategies for Re-skilling

D1 To what extent do you see yourself as being in competition with the following categories (1= not at all, 5= heavily)?

Internal training
Software vendors
Other systems vendors
Independent trainers
Others

D2 What is your view of the development of market expenditure in training?

1993	100%
1994	%
1995	%
1996	%

D2a How do any changes link to the issue of re-skilling?

D2b Do you expect any changes in use of self-administered learning systems, like CBT?

D3 Do you expect to perform better than the market?

Where will you gain share, if anywhere?

Internal training
Software vendors
Other systems vendors
Independent trainers
Other:-

D4 Are there other offerings within your portfolio which are relevant to skills transfer?

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E
Decision Factors

E1 What are the principal factors for your customers in setting budgets for training?

E2 How would you score the following in terms of their importance for your customers in deciding on training on a scale 1 to 5, where 1= unimportant and 5= most important?

Business needs
Personal development
Other

F
View of Own Organisation

F1 Do you believe that you give value for money?

How do you know?

F2 Please assess your own:

Strengths
Weaknesses

F3 What gaps in the training market are you looking to fill?

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