

INPUT

DISPLAY

STRATEGIC MARKET PERSPECTIVE

Supporting The Networked  
Enterprise, Europe  
1996 – 2000

Customer Services Programme – Europe





1 9 9 6

---

---

# **Supporting the Networked Enterprise – Europe 1996-2000**

**INPUT<sup>®</sup>**

---

Frankfurt • London • New York • Paris • San Francisco • Tokyo • Washington D.C.

# INPUT<sup>®</sup>

Clients make informed decisions more quickly and economically by using INPUT's services. Since 1974, information technology (IT) users and vendors throughout the world have relied on INPUT for data, research, objective analysis and insightful opinions to prepare their plans, market assessments and business directions, particularly in computer software and services.

Contact us today to learn how your company can use INPUT's knowledge and experience to grow and profit in the revolutionary IT world of the 1990s.

## SUBSCRIPTION SERVICES

---

- Information Services Markets
  - Worldwide and country data
  - Vertical industry analysis
- Business Integration Markets
- Systems Integration and Professional Services Markets
- Client/Server Software Platforms
- Outsourcing Markets
- Information Services Vendor Profiles and Analysis
- Electronic Commerce/Internet
- U.S. Federal Government IT Markets
- IT Customer Services Directions (Europe)

## SERVICE FEATURES

---

- Research-based reports on trends, etc. (Over 100 in-depth reports per year)
- Frequent bulletins on events, issues, etc.
- 5-year market forecasts
- Competitive analysis
- Access to experienced consultants
- Immediate answers to questions
- On-site presentations

## DATABASES

---

- Software and Services Market Forecasts
- Software and Services Vendors
- U.S. Federal Government
  - Procurement Plans (PAR)
  - Forecasts
  - Awards (FAIT)
  - Agency Procurement Requests (APR)

## CUSTOM PROJECTS

---

For Vendors—analyze:

- Market strategies and tactics
- Product/service opportunities
- Customer satisfaction levels
- Competitive positioning
- Acquisition targets

For Buyers—evaluate:

- Specific vendor capabilities
- Outsourcing options
- Systems plans
- Peer position

## OTHER SERVICES

---

Acquisitions/partnerships searches

## INPUT Worldwide

### Frankfurt

Perchstätten 16  
D-35428 Langgöns  
Germany  
Tel: +49 (0) 6403 911420  
Fax: +49 (0) 6403 911413

### London

Cornwall House  
55-77 High Street  
Slough, Berkshire  
SL1 1DZ UK  
Tel: +44 (0) 1753 530444  
Fax: +44 (0) 1753 577311

### New York

400 Frank W. Burr Blvd.  
Teaneck, NJ 07666  
U.S.A.  
Tel: +1 (201) 801-0050  
Fax: +1 (201) 801-0441

### Paris

24, avenue du Recteur  
Poincaré  
75016 Paris  
France  
Tel: +33 (1) 46 47 65 65  
Fax: +33 (1) 46 47 69 50

### San Francisco

1881 Landings Drive  
Mountain View  
CA 94043-0848  
U.S.A.  
Tel: +1 (415) 961-3300  
Fax: +1 (415) 961-3966

### Tokyo

Saida Building, 4-6,  
Kanda Sakuma-cho  
Chiyoda-ku, Tokyo 101  
Japan  
Tel: +81 3 3864-0531  
Fax: +81 3 3864-4114

### Washington, D.C.

1921 Gallows Road  
Suite 250  
Vienna, VA 22182 3900  
U.S.A.  
Tel: +1 (703) 847-6870  
Fax: +1 (703) 847-6872

# Abstract

In the past, vendors of IT support services focused much of their activities on supporting specific types of equipment and software technologies. Today, the same vendors face the challenge of supporting complex IT environments in which the needs of the enterprise are increasingly geared towards robust, integrated *business solutions* rather than technology solutions.

Large enterprises are starting to expect their service suppliers to take an holistic approach to their business, providing seamless support and management across complex multivendor networks.

The concept of *enterprise-wide* support encompasses a variety of network-oriented services, which are the subject of this report. More specifically, the report contains:

- Market sizing data for various aspects of network support, including internetworking and network management
- The results of a recent survey of European IT directors which reveals user needs, wants and satisfaction levels with various aspects of enterprise-wide support
- An assessment of the highly competitive market for systems management services, including details of a number of competitive offerings.

Published by  
INPUT  
Cornwall House, 55-77 High Street  
Slough, Berkshire, SL1 1DZ  
United Kingdom

**Customer Services Programme —  
Europe**

***Supporting the Networked Enterprise,  
Europe 1996-2000***

Copyright © 1996 by INPUT. All rights reserved.  
Printed in the United Kingdom. No part of the  
publication may be reproduced or distributed in any  
form, or by any means, or stored in a database or  
retrieval system, without the prior written permission  
of the publisher.

The information provided in this report shall be used  
only by the employees of and within the current  
corporate structure of INPUT's clients, and will not be  
disclosed to any other organisation or person  
including parent, subsidiary, or affiliated organisation  
without prior written consent of INPUT.

INPUT exercises its best efforts in preparation of the  
information provided in this report and believes the  
information contained herein to be accurate. However,  
INPUT shall have no liability for any loss or expense  
that may result from incompleteness or inaccuracy of  
the information provided.

# Table of Contents

<b>I</b>	<b>Introduction</b>	<b>1</b>
	A. Objectives and Scope	1
	B. Methodology	2
	C. Report Structure	2
<b>II</b>	<b>Executive Summary</b>	<b>3</b>
	A. Vendors Face Enterprise-Wide Support Challenge	3
	B. Network Support And Management Services – An \$11bn Opportunity By 2000	6
	C. Vendors Vie For Systems Management High Ground	8
	D. Remote Service Management: A First Step Towards Managing The Enterprise	10
<b>III</b>	<b>Market Opportunities In Network Support And Management</b>	<b>13</b>
	A. Key Opportunities In Network Support And Management	13
	B. Internetworking – Strong Market Emerges	15
	C. Network Management Opportunities Emerge As Users Struggle To Keep Pace With Technology	16
<b>IV</b>	<b>Supporting The Enterprise: The User Perspective</b>	<b>19</b>
	A. Enterprises Consider IT Infrastructures To Be Inadequate	19
	B. IT Directors Are Not Satisfied With Current Levels Of Enterprise Support	24
	C. Remote Service Management Is Considered Key To Enterprise Support	25
<b>V</b>	<b>Managing The Enterprise: A Key Vendor Challenge</b>	<b>27</b>
	A. Vendor Challenge Is Enterprise-Wide	27
	B. Integrated Systems Management: A Key Battleground	28
	C. Network Monitoring – The Key To Systems Management Success?	31



1. Current Network Monitoring is Inadequate	31
2. Organisations Need Help in Network Monitoring	34
D. Vendor Systems Management Service Offerings	36
1. Siemens Nixdorf	36
2. Hewlett-Packard	37
3. Digital	38
4. Olivetti	39
5. Bull Information Systems	40
6. Sun Microsystems	41

---

<b>A</b>	<b>The Customer Services Market Defined</b>	<b>45</b>
A.	INPUT's View Of The Customer Services Market	45
B.	Customer Services Sectors	50
C.	Customer Services Vendors	52
D.	Customer Services Revenue Streams	52



# List of Exhibits

## II

-1	IT Directors' Most Important IT Issues, Europe 1996	4
-2	Anticipated Changes To IT Infrastructure, Europe 1996	5
-3	IT Directors Are Willing To Invest In IT Infrastructure Development	5
-4	Growth Of Network Support And Management Services, Europe 1996-2000	7
-5	IT Directors Perceive Need For Assistance With Systems Management	9
-6	Vendor Opportunities In Remote Service Management, Europe 1996	11

## III

-1	Network-Related Services Market, Europe 1996	13
-2	Growth Of Network-Related Services Relative To Total Customer Services Market, Europe 1996-2000	14
-3	Growth Of Component Network Services, Europe 1996-2000	14
-4	Network Maintenance Market, Europe 1996-2000 (\$m)	16
-5	Network Management Market Drivers And Inhibitors	17

## IV

-1	Major Challenges In Development Of IT Infrastructures	20
-2	Assessment Of Current IT Infrastructure, Europe 1996	21
-3	IT Infrastructure Development Requirements, Europe 1996	22
-4	Willingness To Invest In IT Infrastructure Development	23
-5	Satisfaction With Enterprise Support, Europe 1996	24
-6	Enterprises Seek External Assistance For Enterprise Support	25
-7	Perceived Application Of Remote Service Management	26

## V

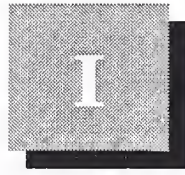
-1	Competitive Activities In Systems Management Sector, 1995/6	29
-2	IT Directors Take Holistic View Of IT Infrastructure	30
-3	Areas Of Low Satisfaction With Systems Management, Europe 1996	32
-4	Perceived Value of Management Practices, Europe 1996	33
-5	Role Of Vendor In Remote Service Management, Europe 1996	34

-6	Perceived Need For External Operations And Support Services, Europe 1996	35
----	---	----

---

**A**

-1	Customer Services Market Structure	47
-2	Software Products Market Structure	49
-3	Customer Services Revenue Streams	53



# Introduction

## A

---

### Objectives and Scope

Large enterprises are increasingly expecting their service suppliers to take an holistic approach to their business, providing seamless support and management across complex multivendor networks.

The concept of *enterprise-wide* support encompasses a variety of network-orientated services, which are the subject of this report. More specifically, the objectives of the report are to provide:

- Market sizing data for various aspects of network support, including internetworking and network management
- The results of a recent survey of European IT directors which reveals user needs, wants and satisfaction levels with various aspects of enterprise-wide support.
- An assessment of the highly competitive market for systems management services, including details of a number of competitive offerings.



**B**

---

**Methodology**

Most of the user data in this report is taken from a survey of 120 IT directors in France, Germany, Italy and the UK. Data from similar surveys conducted earlier in 1996 is used for comparison in some cases.

INPUT's established methodology was used for deriving base year market sizes and forecast analyses for the period 1996 to 2000 (see Chapter 3). The methodology is based on extensive vendor revenue collection and analysis techniques, plus user research conducted in the leading country markets of Europe.

INPUT's analysis is supplemented by information from various other sources including vendor annual reports, company press releases and specialised data published by the computer market trade press.

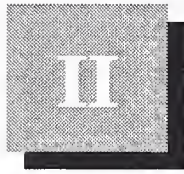
**C**

---

**Report Structure**

The remaining chapters of this report are as follows:

- Chapter II is an executive overview which provides a summary of the key findings of the study
- Chapter III describes the major areas of opportunity in network support, and provides quantitative analyses of various market segments including installation/integration, maintenance, network management and monitoring
- Chapter IV presents the results of a recent survey of European IT directors which reveals user needs, wants and satisfaction levels with various aspects of enterprise support
- Chapter V describes the highly competitive environment for systems and network management services, including details of a number of competitive offerings.
- Appendix A defines INPUT's view of the IT customer services market, and provides detailed definitions of service sectors and delivery modes.



# Executive Summary

## A

### Vendors Face Enterprise-Wide Support Challenge

---

In the past, vendors of IT support services focused much of their activities on supporting specific types of equipment and software technologies. Today, the same vendors face the challenge of supporting complex IT environments in which the needs of the enterprise are increasingly geared towards robust, integrated *business solutions* rather than technology solutions.

Large enterprises are starting to expect their service suppliers to take an holistic approach to their business, providing seamless support and management across complex multivendor networks.

In a number of surveys of IT directors conducted in 1996, a consistent theme has emerged: the need to develop a more distributed IT infrastructure which will enable improved business processes. Exhibit II-1 summarises the most important IT-related issues as revealed to INPUT by IT directors of leading European corporations in 1996.

Exhibit II-1

**IT Directors' Most Important IT Issues, Europe 1996**

Adopt More Distributed IT Infrastructure
Develop IT Infrastructure As A Business Enabler
Improve Support For Operational Systems
Introduce An Enterprise-Wide IT Infrastructure
Reduce Cost Of IT Infrastructure

Source: INPUT

INPUT believes that the single biggest challenge lies in developing the IT infrastructure in such a way that it adequately *supports the business*, not just the underlying technology. And increasingly this means facilitating *external* processes, including electronic interfaces with customers and suppliers, rather than just internal processes such as accounting or human resources.

In the most recent survey of 120 European IT directors, the most important IT requirements included “overall ability to meet future business needs”, “ability to respond to technological change” and “flexibility to support new business processes”. However, respondents were dissatisfied with the capability of their current IT infrastructure to meet these requirements.

Many organisations will struggle in the next few years to develop IT infrastructures which will support their business at a time of significant change. Exhibit II-2 shows that IT directors expect a reasonable degree of change to their IT infrastructures in the near future.

Furthermore, as shown in Exhibit II-3, the great majority of IT directors are willing to invest to support their intentions to develop their IT infrastructures. Almost 60% of directors show great willingness to invest in this area in the next few years.



Exhibit II-2

### Anticipated Changes To IT Infrastructure, Europe 1996

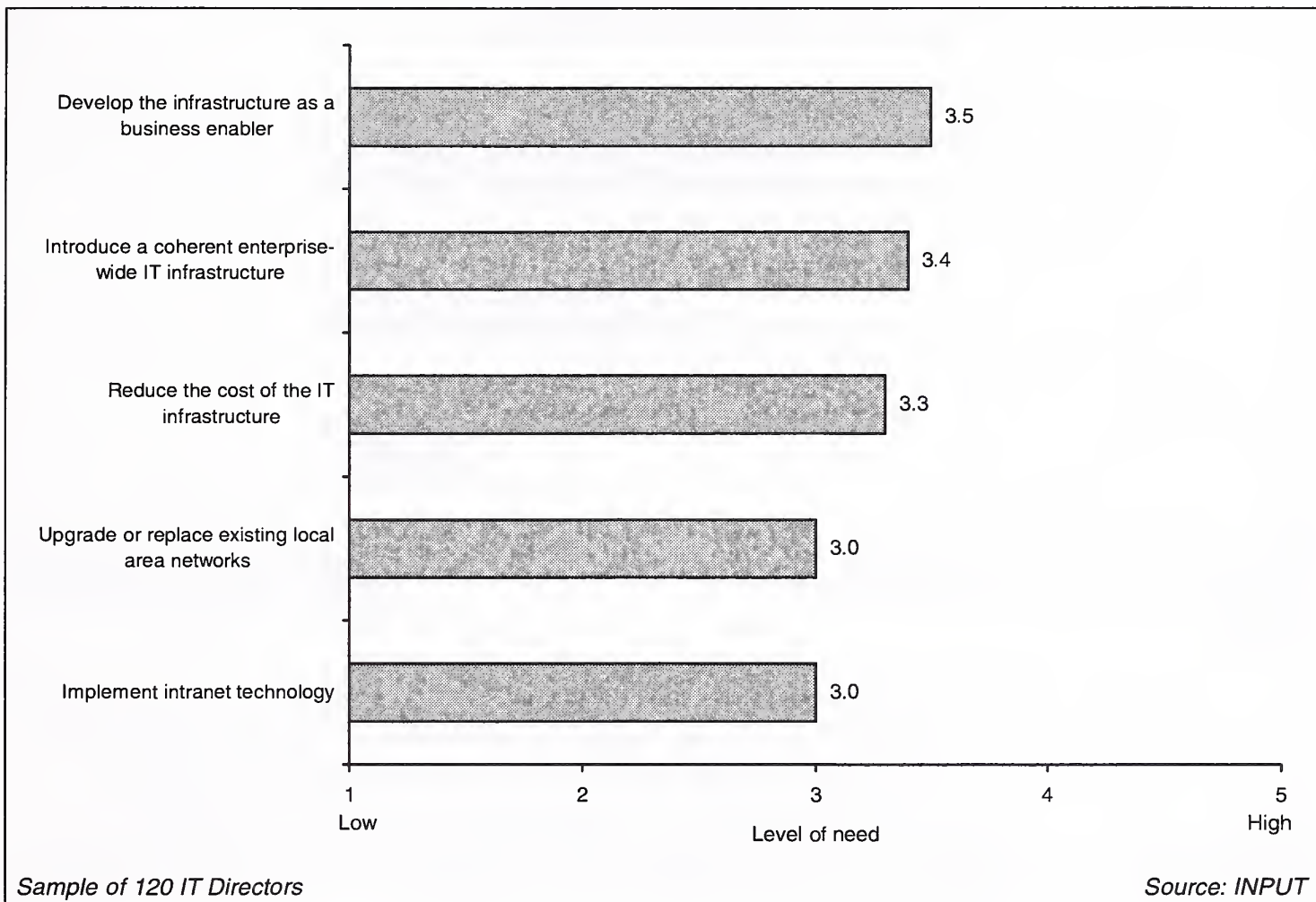
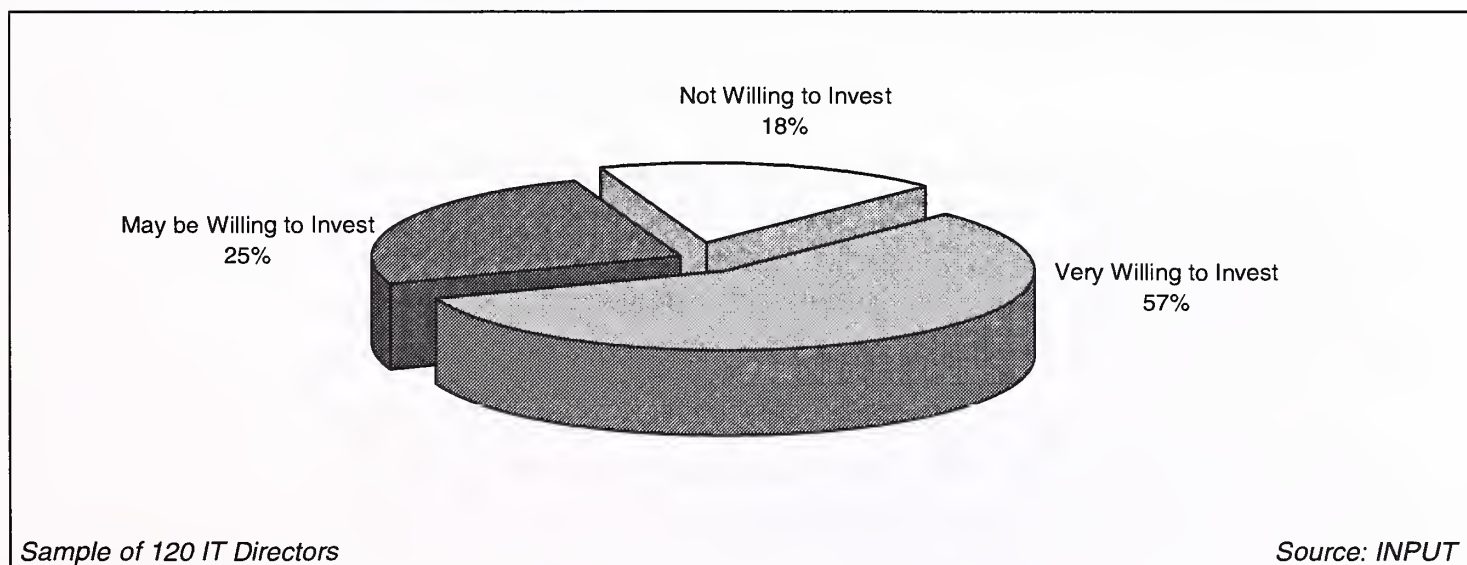


Exhibit II-3

### IT Directors Are Willing To Invest In IT Infrastructure Development



As revealed in Chapter IV, IT directors also acknowledge the need for external assistance with the implementation, support and management of their enterprise-wide IT infrastructures.

Customer services vendors seeking to capitalise on the trend towards enterprise-wide support are alerted to significant opportunities in three areas in particular:

- Network support and management services
- Integrated systems management
- Remote service management.

## B

---

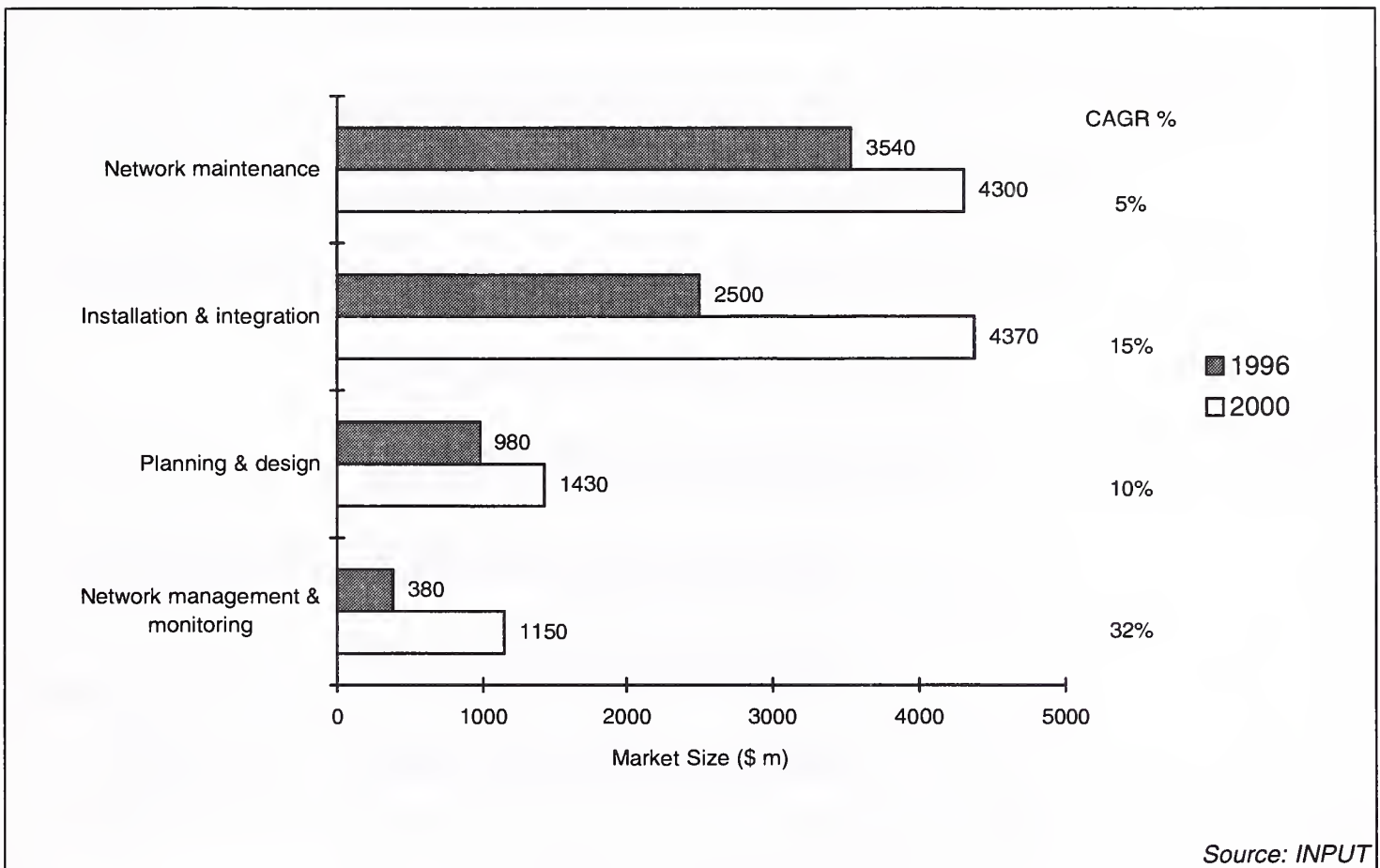
### **Network Support And Management Services – An \$11bn Opportunity By 2000**

The concept of *enterprise-wide* support encompasses a variety of network-orientated services, from installation through to network management. For the purposes of this study, INPUT has identified four separate network-related support or management services, which together constitute a market approaching \$7 billion in Europe in 1996. This will grow to just over \$11 billion by the year 2000.

Exhibit II-4 shows the relative growth of each of the component network services over the next four years.

Exhibit II-4

### Growth Of Network Support And Management Services, Europe 1996-2000



Today, interoperability of networks and the ability to share applications and core data throughout the enterprise are the key IT objectives of most large organisations. However, many organisations have struggled to achieve these goals, and are now acknowledging the need for external expertise to help meet those objectives.

At one end of the support value chain, the market for the support of networking products such as bridges, routers and switches is strong. Given the explosion in demand for network integration services, it is no surprise that the market for support of the products which physically integrate networks (either LAN/LAN or LAN/WAN) is growing strongly.

Higher up the value chain, the market for network management and monitoring services has begun to open up in the last two years. INPUT estimates that over 10% of organisations are using external suppliers for network management services, compared with just 5% in 1994.



The reality is that IT managers and network managers are facing an often impossible task to provide an adequate in-house service. Given the diversity and complexity of corporate networks, most IT groups face a real resource gap, which can only be plugged by using external suppliers.

Furthermore, as the number of network management tools available continues to escalate, the ability of internal groups to take advantage of the latest technology declines. Most tools address only part of the enterprise network management need, and hence piecing together the tools to do the complete end-to-end task is not a viable proposition.

## C

---

### Vendors Vie For Systems Management High Ground

Systems management is an umbrella term taken to include network management, performance management, security management, data management and software management.

Several companies have been developing integrated systems management products via acquisition over the last two to three years, including OpenVison and Platinum Technology Inc. However, increasingly the systems management market is polarising around two major players: Computer Associates (Unicenter) and IBM (Tivoli).

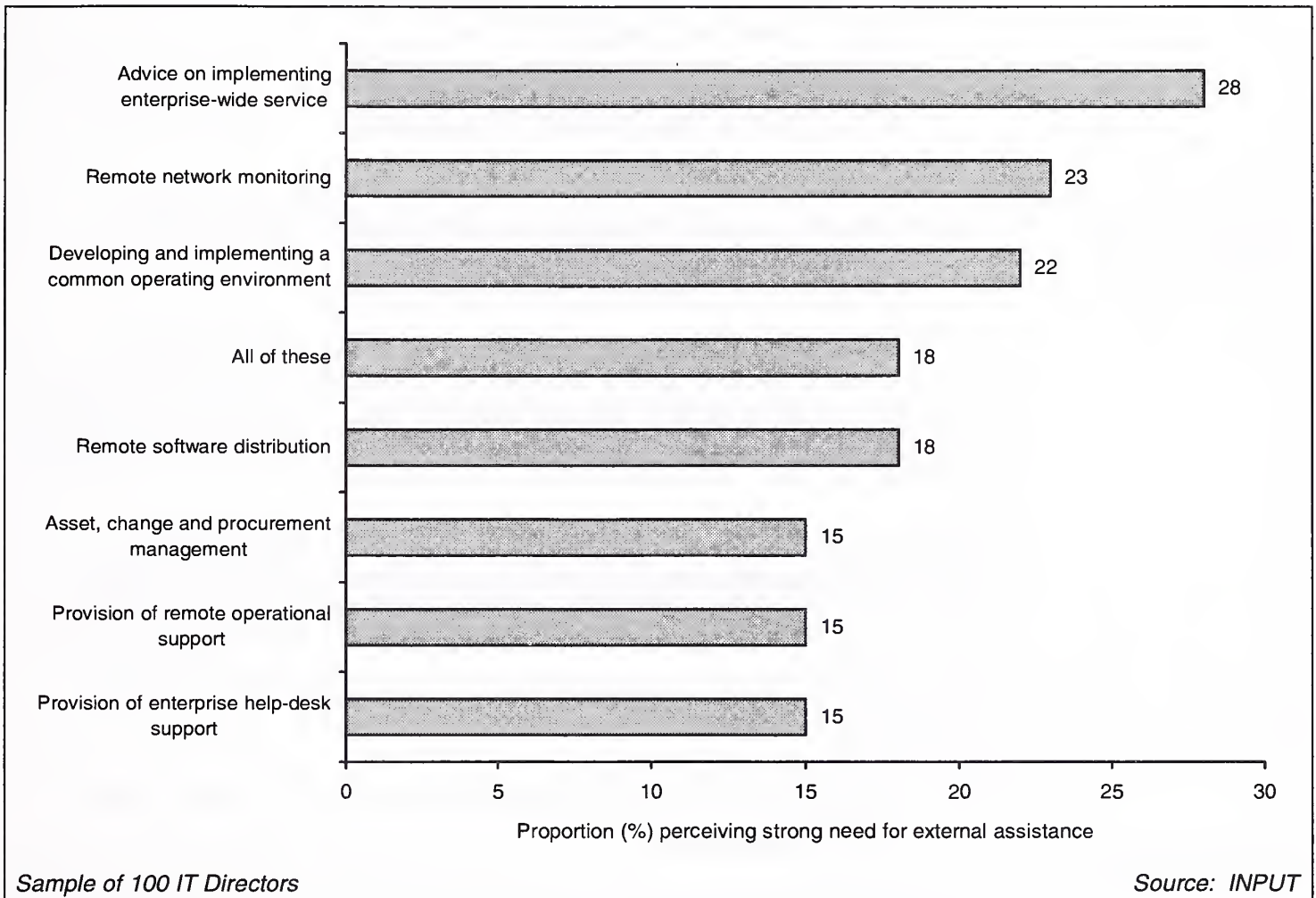
Successful systems management on an enterprise-wide scale demands comprehensive, integrated solutions which cut across technology platforms. Fragmented systems management solutions based on largely proprietary technology are less attractive to organisations seeking to integrate the management of all of their IT systems.

The lack of adequate functionality of systems management software has been an inhibitor to enterprise-wide solutions. Despite a plethora of systems management tools on the market, the inability to integrate with other tools has been the biggest roadblock to the provision of truly enterprise-wide management.

However, the extent to which IT directors perceive the need for enterprise-wide systems management is illustrated by Exhibit II-5.

Exhibit II-5

### IT Directors Perceive Need For Assistance With Systems Management



This chart illustrates the point that organisations are moving towards an enterprise, rather than fragmented, view of systems management. A further illustration of this trend is that 60% of IT directors surveyed perceive that the desktop environment should be managed and supported as part of the enterprise IT infrastructure and not as a distinct entity.

Despite the historic lack of integration among many systems management tools, breakthroughs are beginning to occur. For example, in October 1996 Tivoli announced its TME 10 Global Enterprise Manager, a framework intended to integrate systems management across the enterprise. This product resulted from the bundling of IBM's own SystemView product with Tivoli's TME, following the acquisition of Tivoli Systems Inc. by IBM.

The major systems vendors have begun to line up behind the leading tools providers in putting together their own systems management service offerings. The race to provide fully functioned end-to-end systems management across the enterprise is now on.

## D

---

### **Remote Service Management: A First Step Towards Managing The Enterprise**

The fact that breakthrough products such as TME10 are only just beginning to make integrated systems management a possibility suggests that there is still a long way to go before seamless enterprise systems management becomes commonplace.

However, research suggests that, more than ever, organisations acknowledge the need to manage their IT infrastructures as a single integrated entity rather than as a series of distinct technical components.

In this respect, network monitoring may be one of the keys to future success, since:

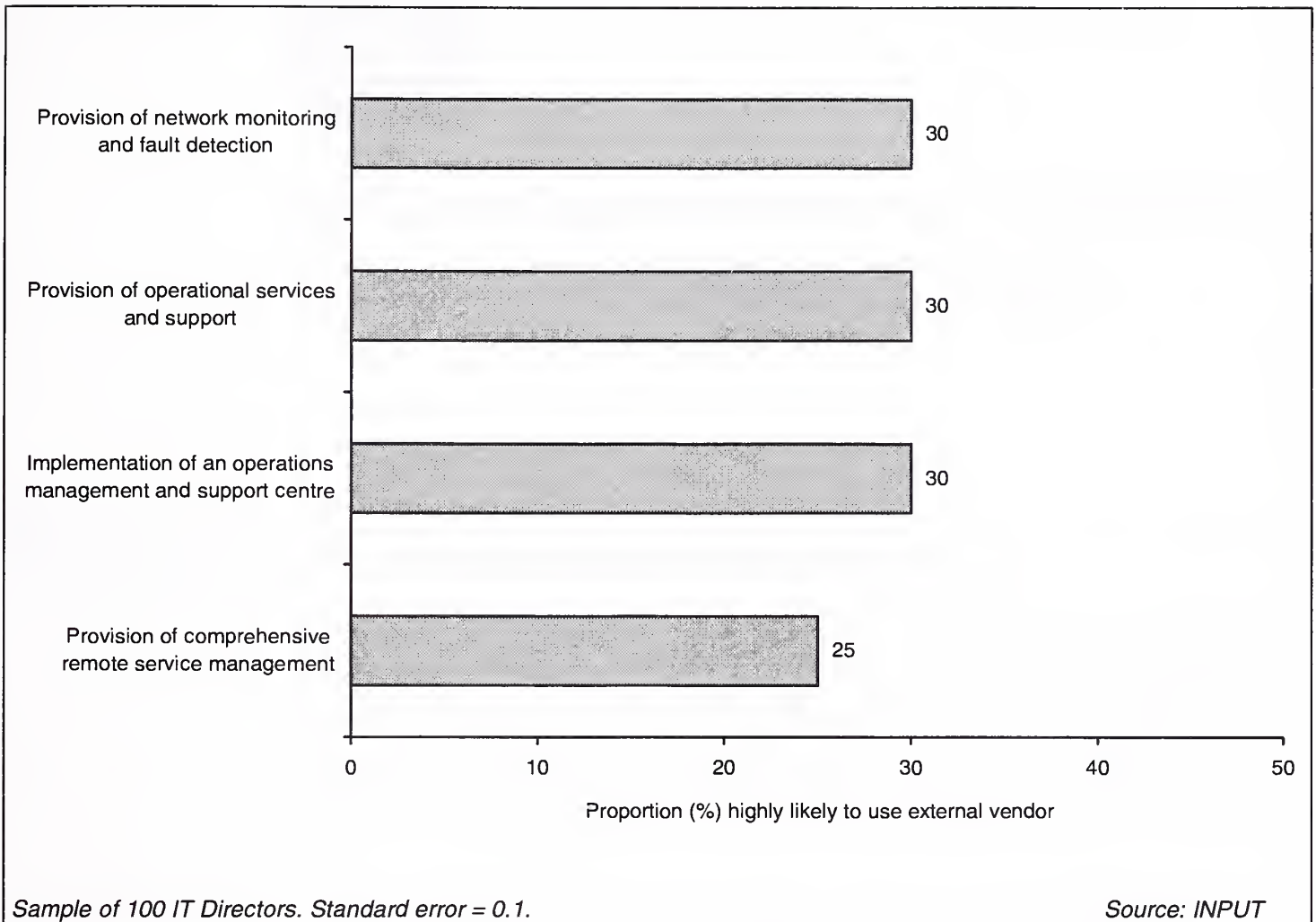
- Organisations are very dissatisfied with their current network monitoring capability
- IT directors perceive a relatively high need for external assistance in network monitoring
- Network monitoring is critical to the successful implementation of enterprise-wide service management.

Exhibit II-6 lists the proportions of organisations that are highly likely to use an external vendor for a number of key remote service management activities.



Exhibit II-6

### Vendor Opportunities In Remote Service Management, Europe 1996



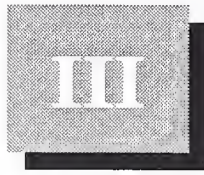
Overall approximately 45% of IT directors would be highly likely to use an external vendor for either:

- Provision of network monitoring and fault detection, or
- Implementation of an operations management and support centre.

INPUT believes that network monitoring is one of the key elements within the framework of enterprise systems management, facilitating performance management and problem solving across the backbone of the IT infrastructure.

Without this key element, it is difficult to monitor or guarantee the performance of applications such as messaging, workflow, or data interchange - all of which are of increasing importance to today's enterprise.

(Blank)



# Market Opportunities In Network Support And Management

## A

### Key Opportunities In Network Support And Management

The concept of *enterprise-wide* support encompasses a variety of network-orientated services, from installation through to network management. For the purposes of this study, INPUT has identified four separate network-related support or management services, which together constitute a market approaching \$7 billion in Europe in 1996. See Exhibit III-1.

Exhibit III-1

**Network-Related Services Market, Europe 1996**

Service	Market Size (\$m)
Planning & Design	900
Installation & Integration	2300
Maintenance (internetworking devices and servers)	3250
Network Management & Monitoring	350
Total	6800

Source: INPUT

Exhibit III-2 shows the combined growth of these services in relation to the total market for IT customer services over the next four years. Services related to the network are forecast to grow at a significantly higher rate than the overall market.

Exhibit III-2

### Growth Of Network-Related Services Relative To Total Customer Services Market, Europe 1996-2000

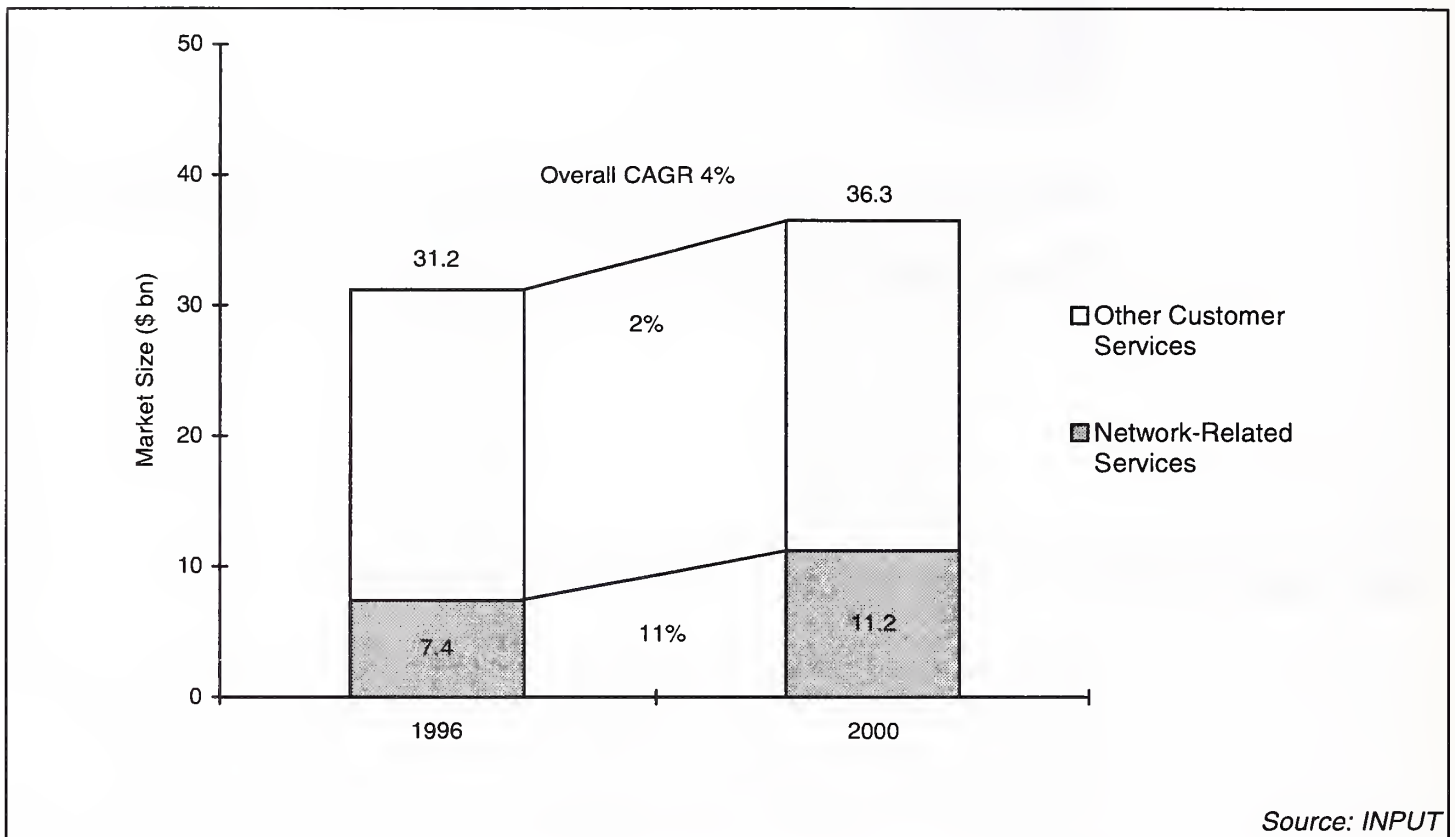


Exhibit III-3 shows the relative growth of each of the component network services over the next four years.

Exhibit III-3

### Growth Of Component Network Services, Europe 1996-2000

	1996	2000	CAGR (%)
Planning & Design	980	1430	10
Installation & Integration	2500	4370	15
Maintenance	3540	4300	5
Network Management & Monitoring	380	1150	32
Total	7400	11250	11

Source: INPUT



As demand for distributed computing grows, significant opportunities are emerging in areas such as network design, implementation, monitoring and management. Even more significantly, however, the market for LAN and WAN integration services looks set for rapid growth, as larger corporates struggle to integrate independent networks on an enterprise-wide basis.

Today, interoperability of networks and the ability to share applications and core data throughout the enterprise are the key IT objectives of most large organisations. However, many organisations have struggled to achieve these goals. Chapters IV and V reveal more about how this will open up significant opportunities for IT services vendors.

## **B**

---

### **Internetworking – Strong Market Emerges**

The continued shift to client/server technology is often cited as the driving force for much of the growth in the IT services markets, but it is the development of the underlying network technology which is enabling that shift.

Recent advances in *internetworking* technology (bridges, routers and switches) have enabled much better physical integration of networks (and hence much better monitoring and management capability) than ever before. And the emerging trend in large corporations towards all switched ATM networks will further enhance network sophistication.

Internetworking services relate essentially to the maintenance of networking products such as bridges, routers and switches. Given the explosion in demand for network integration services, it is no surprise that the market for support of the products which physically integrate networks (either LAN/LAN or LAN/WAN) is growing strongly.

Traditionally, the manufacturers of networking products have not had support operations of their own, and have relied on third parties to provide support. Hence, most leading systems vendors are accredited as service partners of the networking companies.

However, the larger networking companies such as 3Com, Bay Networks and Cisco have all recently emerged as service providers in their own right. Furthermore, these companies are aggressively pursuing higher value service business including network management.

For example, Transcend Networking Framework (TNF) is 3Com's attempt to promote *network simplicity*, a service which provides:

- Scaling of bandwidth and capacity to the requirements of the LAN
- WAN routing and remote access solutions
- Systems-wide network monitoring, analysis and management products, from the desktop to the LAN and WAN.

Exhibit III-4 shows the growth of the network maintenance market, subdivided into internetworking and LAN server maintenance, for the period 1996 to 2000.

Exhibit III-4

#### Network Maintenance Market, Europe 1996-2000 (\$m)

	1996	2000	CAGR (%)
Internetwork Devices	440	650	10
LAN Servers	3100	3650	4
Total	3540	4300	5

*Source: INPUT*

## C

### Network Management Opportunities Emerge As Users Struggle To Keep Pace With Technology

A user survey conducted in 1994 revealed that 95% of organisations at that time relied entirely on in-house resources for network management. The study forecast that, for a variety of reasons, the market for network management by third parties would grow substantially (38% per annum from a small base of \$100 million). However, the study also cited a number of inhibitors which were preventing even stronger growth. The market drivers and inhibitors are summarised in Exhibit III-5.

Exhibit III-5

### Network Management Market Drivers And Inhibitors

Drivers	Inhibitors
Network complexity	User reluctance to outsource network management
Critical business processes	Limited vendor knowledge of client business
Rate of technological change	Rate of vendor skills renewal
Operational expense	User ignorance of real costs
Scarcity of network skills	Perceived loss of control for user IT

Source: INPUT

Since the 1994 study, the market for network management and monitoring services has indeed begun to open up, as the inhibitors to growth have started to break down. INPUT now estimates that over 10% of organisations are using external suppliers for network management services, compared with just 5% two years ago.

The reality is that IT managers and network managers are facing an often impossible task to provide an adequate in-house service. Given the diversity and complexity of corporate networks, most IT groups face a real resource gap, which can only be plugged by using external suppliers.

Furthermore, as the number of network management tools available continues to escalate, the ability of internal groups to take advantage of the latest technology declines. Most tools address only part of the enterprise network management need, and hence piecing together the tools to do the complete end-to-end task is not a viable proposition.

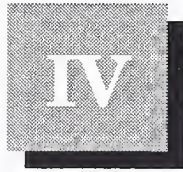
Hence, a growing number of organisations are using external suppliers for network management and monitoring services, from which they are deriving the following benefits:

- Up-to-date network management expertise
- Better leveraged use of the latest network management tools

- Optimised network performance
- Flexibility to respond to changing network configurations
- Flexibility of variable costs.

Chapter IV takes a closer look at current user needs and wants in terms of support for the networked enterprise. Chapter V looks at the competitive dynamics of providing enterprise-wide support.





# Supporting The Enterprise: The User Perspective

## A

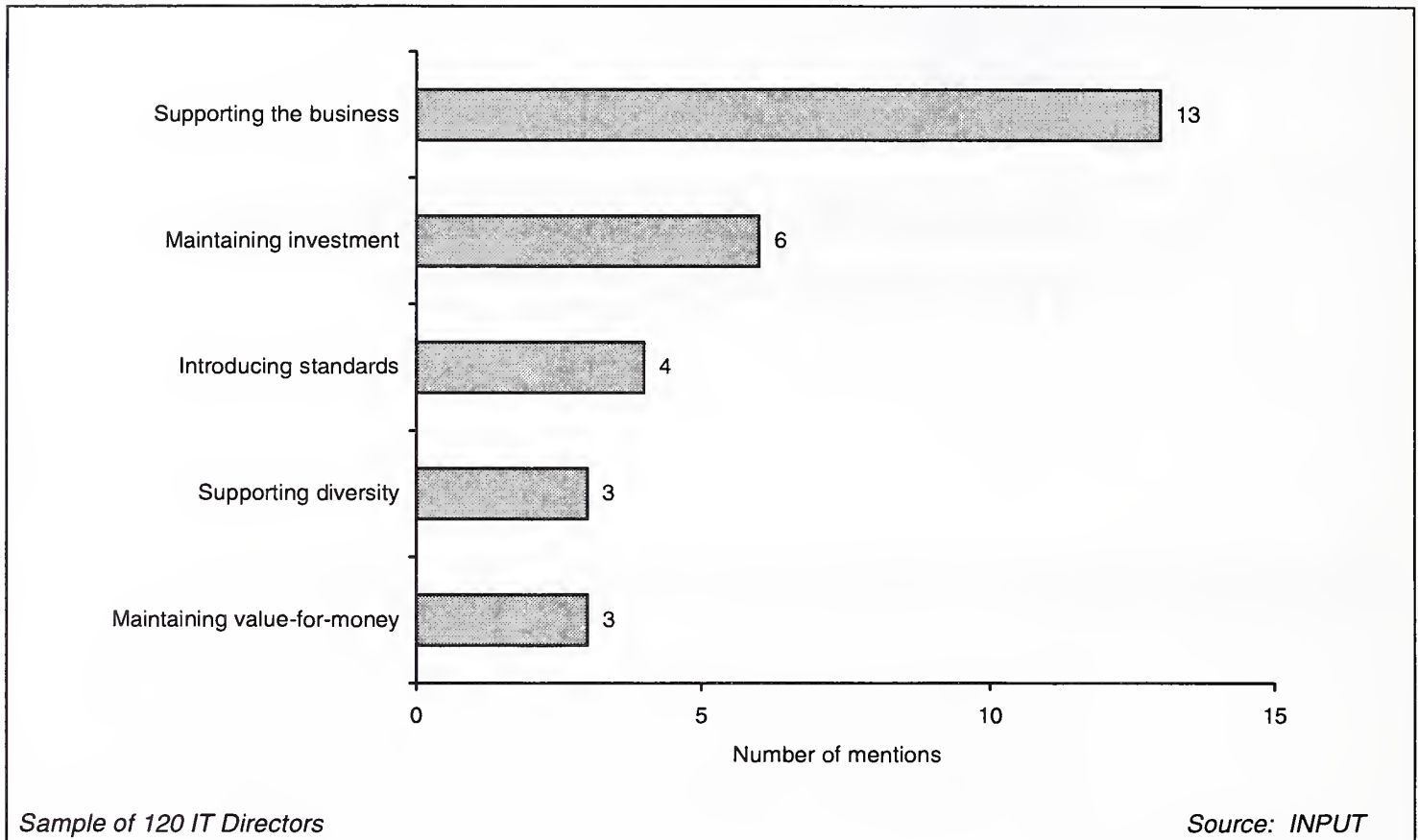
---

### Enterprises Consider IT Infrastructures To Be Inadequate

In a survey of 120 IT directors in France, Germany, Italy and the UK, participants were asked “what are the major challenges facing your organisation in developing its IT infrastructure over the next few years?”. The results of this unprompted question are shown in Exhibit IV-1.

Exhibit IV-1

### Major Challenges In Development Of IT Infrastructures



Clearly, the biggest challenge lies in developing the IT infrastructure in such a way that it adequately supports the business.

It is interesting to reflect on what respondents mean by “supporting the business”. In the past, an organisation’s IT infrastructure has tended to be viewed as an enabler of *internal* processes such as accounting or human resources. However, increasingly, an organisation’s IT is seen first and foremost as an enabler of *external* processes including the interfaces with customers and suppliers.

Respondents were prompted to rate a number of business needs in terms of importance, and to indicate how satisfied they are with the current capability of their IT infrastructure to support those needs. The results are shown in Exhibit IV-2.

Exhibit IV-2

**Assessment Of Current IT Infrastructure, Europe 1996**

	High Satisfaction	Medium Satisfaction	Low Satisfaction
High Importance		Reliability; Security	Ability to meet future business needs; Ability to respond to technological change; Cost-effectiveness; Flexibility to support new business processes
Medium Importance		Throughput/performance	Ability to support multi-media technologies; Geographic coverage; Interconnection of workgroups
Low Importance			Flexibility to adapt to changing organisational structures

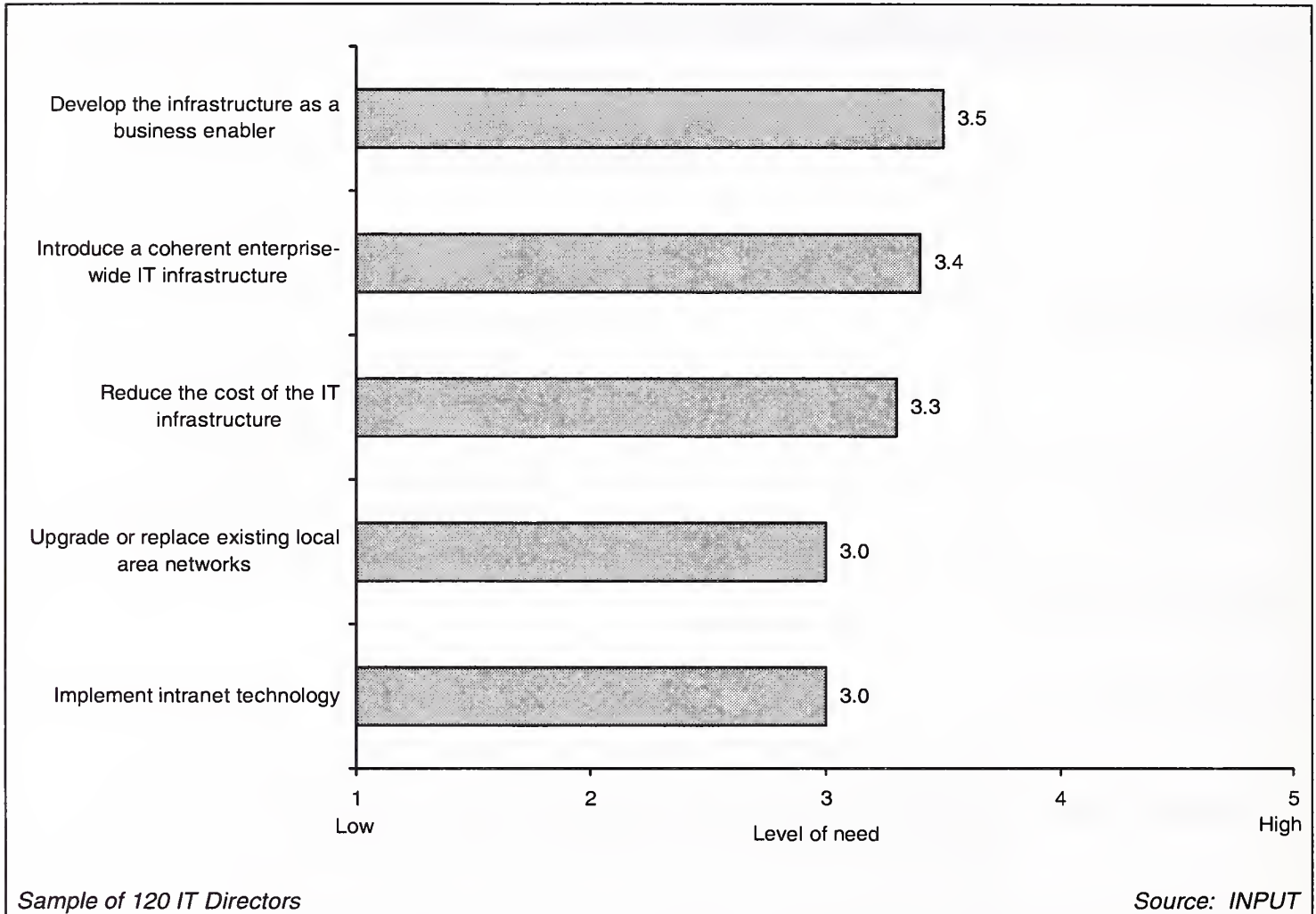
*Sample of 120 IT Directors**Source: INPUT*

The most important business needs related largely to flexibility and adaptability. Hence, “overall ability to meet future business needs”, “ability to respond to technological change” and “flexibility to support new business processes” were all rated highly important. However, respondents were dissatisfied with the capability of their current IT infrastructure to support those needs. Clearly, organisations consider their IT infrastructures to be inadequate in the most important respects.

This finding suggests that many organisations will struggle in the next few years to develop IT infrastructures which will support their business at a time of significant change. Exhibit IV-3 shows that IT directors expect a reasonable degree of change to their IT infrastructures in the near future.

Exhibit IV-3

### IT Infrastructure Development Requirements, Europe 1996



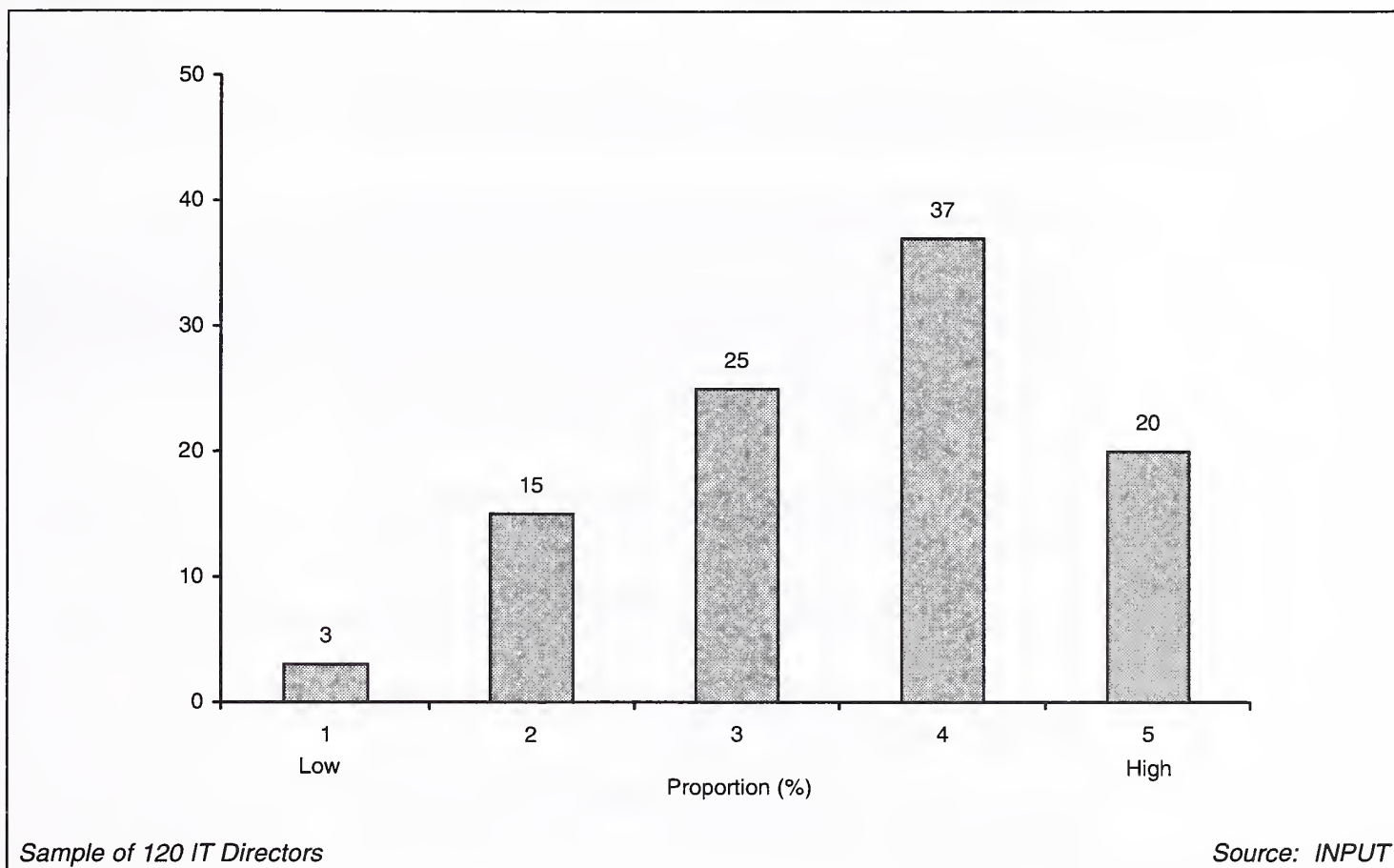
The anticipated changes in IT infrastructures reflect fundamental business pressures such as the growing need to implement forms of electronic commerce.

Furthermore, as shown in Exhibit IV-4, the great majority of IT directors are willing to follow through their intentions to develop their IT infrastructures. Almost 60% of directors show great willingness to invest in this area in the next few years.



Exhibit IV-4

### Willingness To Invest In IT Infrastructure Development



However, there is evidence of marked variation in the willingness of organisations to invest in IT infrastructure development - between countries and between industry sectors. In summary:

- Eighty per cent of IT directors in Germany are highly willing to invest, compared with 60% in Italy, 50% in France and only 45% in the UK
- In both the distribution and financial services sectors, approximately 80% of IT directors are highly willing to invest, compared with just over 50% in Manufacturing and just over 40% in Services.

**B****IT Directors Are Not Satisfied With Current Levels Of Enterprise Support**

Exhibit IV-5 shows current satisfaction levels with a variety of enterprise support services.

Exhibit IV-5

**Satisfaction With Enterprise Support, Europe 1996**

	Importance	Satisfaction	Difference
Achievement of robust desktop environment	4.0	3.2	0.9
Combined monitoring of all local and wide area networks	3.4	2.7	0.8
Network monitoring of the LAN	3.5	2.7	0.7
Development of enterprise-wide systems management capability	3.6	3.0	0.6
Standardisation of the desktop environment	3.4	3.2	0.2

Sample of 120 IT Directors (1 to 5 scale)

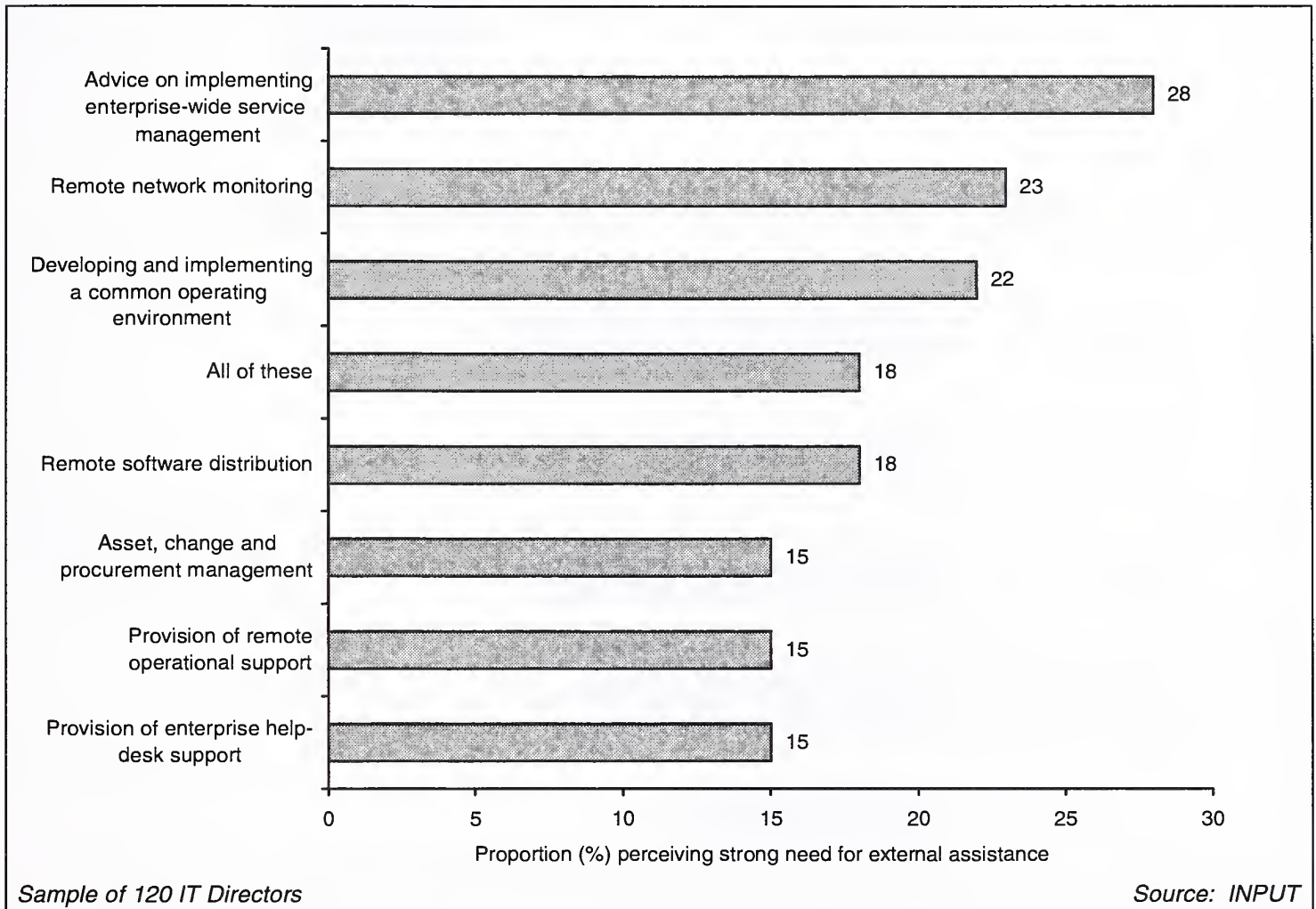
Source: INPUT

The evidence of this survey suggests that in many of the most vital aspects of providing enterprise-wide support, support organisations are falling short of requirements by a long way. Even in the more limited space of the desktop, respondents clearly feel that much could be done to establish a more robust environment. Interestingly, however, progress appears to be being made in terms of standardisation of the desktop environment, where satisfaction levels are relatively acceptable.

Nonetheless, in the key areas of network monitoring and management, satisfaction levels with current service provision are very low indeed. And, as shown in Exhibit IV-6, this has a direct correlation with intentions to seek external assistance to help improve a variety of these services.

Exhibit IV-6

### Enterprises Seek External Assistance For Enterprise Support



## C

### Remote Service Management Is Considered Key To Enterprise Support

The need to implement enterprise-wide systems management is seen as the most important area in which external vendors can assist. This theme is explored more fully in Chapter V, as is the proposition that remote network monitoring is the most likely key to success in the wider field of systems management.

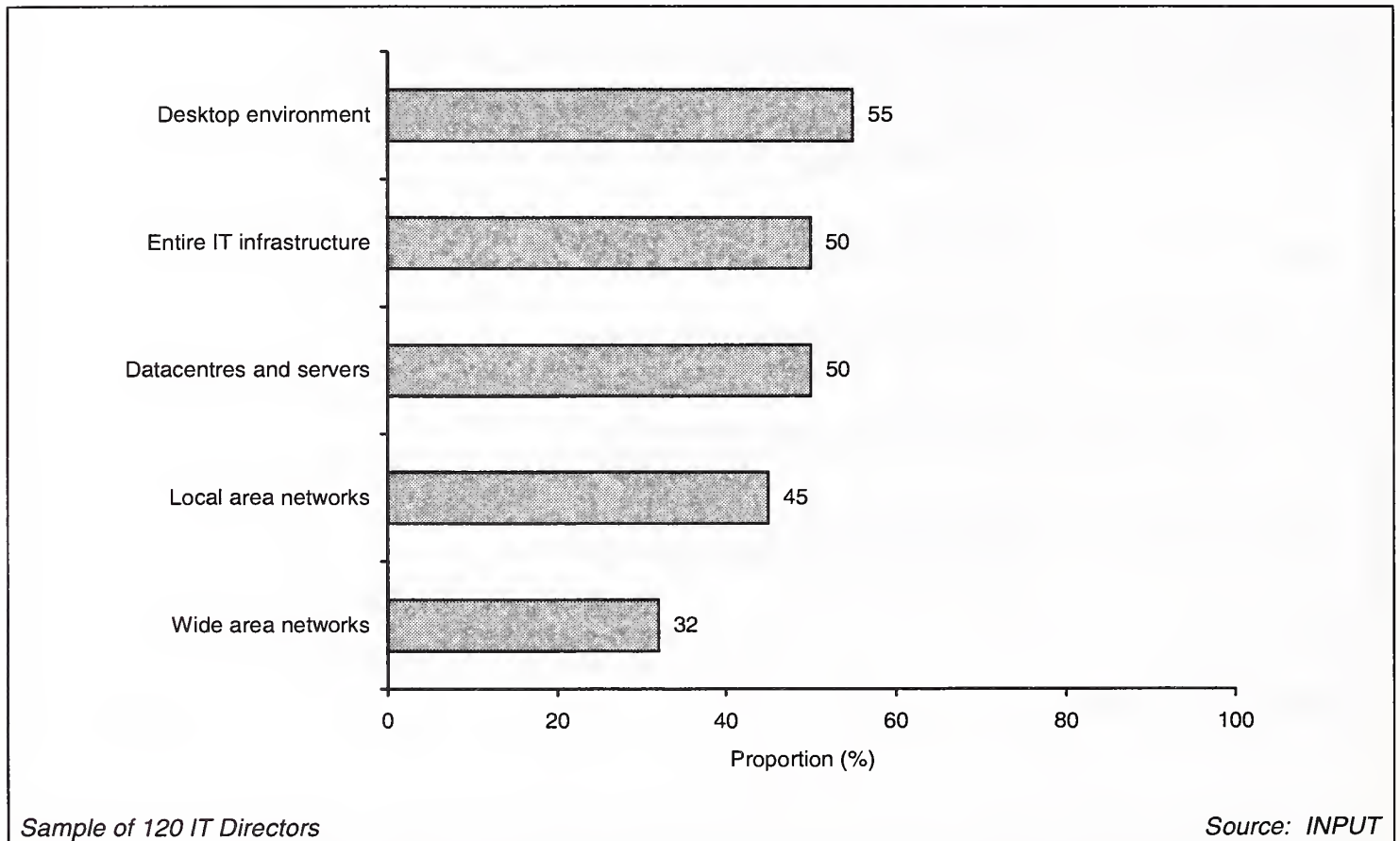
Interestingly, Exhibit IV-6 shows that several forms of remote service management are considered to be important external service offerings. These include not only remote network monitoring, but also remote software distribution and remote operational support.



Exhibit IV-7 shows how IT directors perceive these remote service management facilities in terms of their potential application to existing IT environments.

Exhibit IV-7

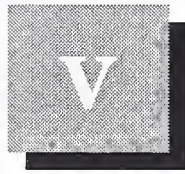
### Perceived Application Of Remote Service Management



While the greatest number of respondents perceive remote service management to be most appropriate to the desktop environment, almost as many IT directors consider such services to be applicable to the entire IT infrastructure.

Though IT directors' opinions are evenly split in terms of how applicable remote service management is to their IT environments, the fact is that similar surveys as recently as two years ago showed much lower levels of enthusiasm for these services. INPUT believes that there is now a strong movement in favour of the use of remote service management, and that this is a trend which could open up the systems management market generally in the very near future (see Chapter V for more detail).





# Managing The Enterprise: A Key Vendor Challenge

## A

---

### Vendor Challenge Is Enterprise-Wide

The rise of distributed computing has changed the focus of IT from the “glass house” to the network. Greater reliance on the network for practically all business operations has transferred the term “mission critical” from applications to systems and to the entire computing enterprise itself.

Due to growing numbers of network users and increasing complexity of networks and systems, the traditional systems and network management approach has been redefined by some vendors to reflect the need to extend systems and network management to the enterprise.

Success in client/server management is dependent on the vendors’ ability to address the following key issues:

- Match its service portfolio to the client requirement
- Automate service delivery to drive down support costs and ensure price-competitiveness
- Demonstrate improved end user productivity
- Match the client organisation’s required geographic coverage.

Enterprise-wide management of a distributed environment is inherently more complex than datacentre systems management. In addition to high availability, tuning and configuration, security, backup and recovery, the distributed environment demands efficient operation of network hardware

and software, cables, modems, routers, bridges and gateways, 24 hours a day, 365 days a year.

Due to the diversity of systems and protocols, effective systems management is increasingly complex. Also, with the increase in portable/mobile computing, with users accessing the corporate network from home and from remote sites, the parameters of enterprise management are being redefined. Solving network problems will undoubtedly become more complex, forcing companies to take a closer look at software distribution and distributed configuration management.

The need for *integrated* systems management across the enterprise is increasingly an imperative.

## B

---

### **Integrated Systems Management: A Key Battleground**

The umbrella term systems management is commonly taken to include the following functions: network management, performance management, security management, data management and software management.

Several companies have been developing integrated systems management products via acquisition over the last two to three years, including OpenVison and Platinum Technology Inc. However, these events have largely been overshadowed by major acquisitions by Computer Associates and IBM in 1995/96.

Exhibit V-1 summarises the major competitive activities that have taken place in the systems management market in the last year.

Exhibit V-1

**Competitive Activities In Systems Management Sector, 1995/6**

<b>Company</b>	<b>Systems Management Tool/Software</b>	<b>Comments</b>
<b>Computer Associates</b>  (Legent)	Unicenter: Unix-based systems management suite. Runs on 29 platforms  HP & Sun integrating own products with Unicenter  XPE: client/server -based open systems management framework	Product shipped since 1993. Successful, ease of use, extensive coverage. Technology "lock-in" a potential downside  Legent purchased by Computer Associates in 1995 for \$1.78bn
<b>IBM</b>  (Tivoli Systems Inc.)	IBM's own framework - Karat - failed in 1992/3. TME10 is the product name for bundling of IBM SystemView with TME  TME10 GEM (Global Enterprise Manager). Object-oriented open systems management framework.  Buy-in from Relational Database vendors: Sybase, Informix & Oracle	IBM acquired Tivoli Systems In February 1996 for \$743m  Claims to be first product to break down barriers between mainframe & distributed systems, enabling management of entire network computing environment . More flexible product than Unicenter. Ties together systems management applications from Tivoli & third parties
<b>Digital</b>	Polycenter systems management	Passed over to CA in return for a deal to market Unicenter worldwide
<b>Data General</b>	TME shipped with Data General's own DG/UX operating system	DG is also marketing Tivoli's systems management product range
<b>Hewlett-Packard</b>	Tornado: Tivoli-style framework, not expected until 1997	

Source: INPUT

Successful players are increasingly those with the capability of providing a comprehensive, enterprise solution. This should ideally encompass PC's, workstations, mainframes, UNIX and NT servers, LANs and internetworking devices (hubs, routers, switches). Organisations are moving towards an enterprise, rather than a fragmented, view of systems management.

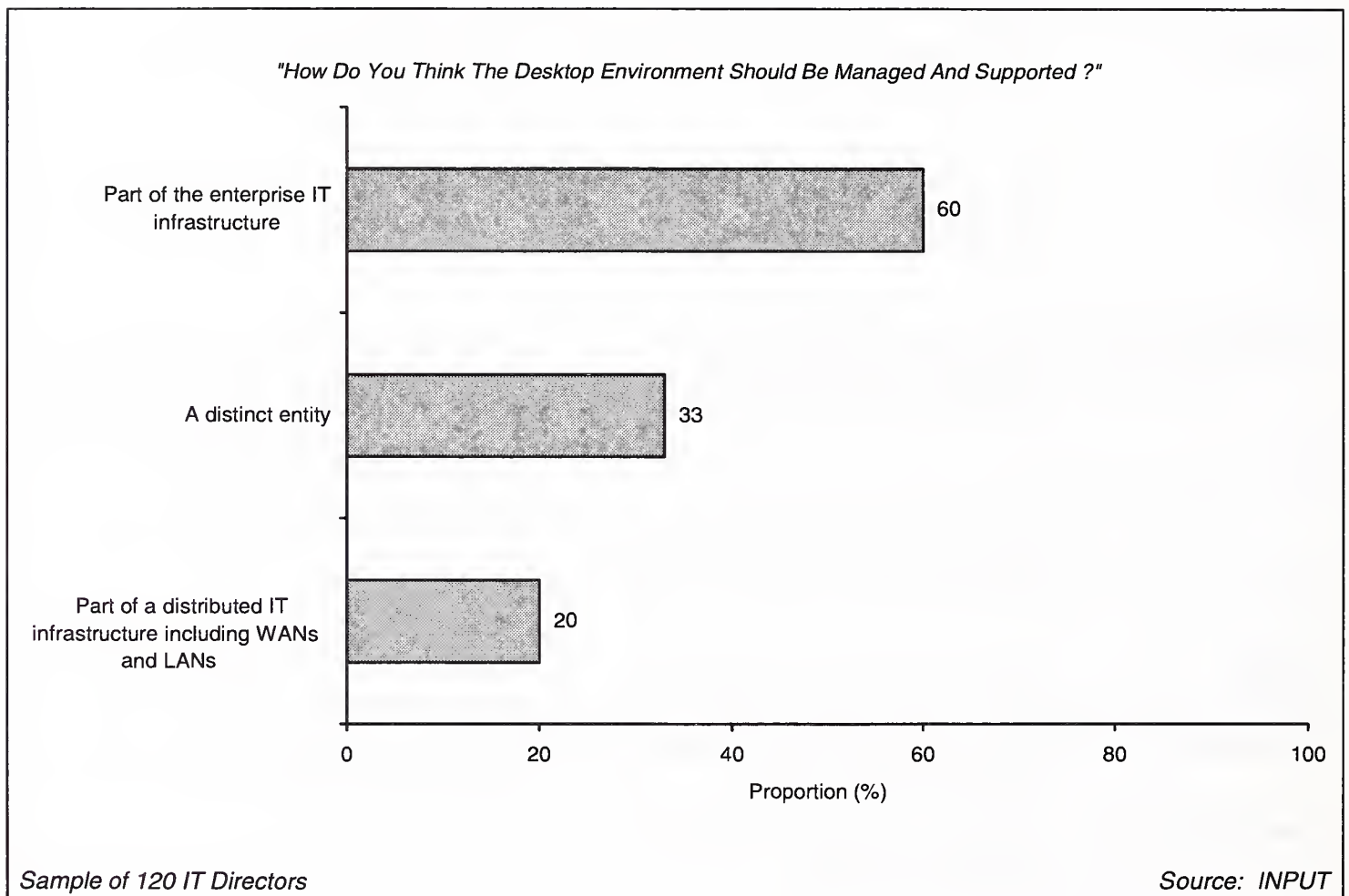
The lack of adequate functionality of systems management software has been an inhibitor to enterprise-wide solutions. Despite a plethora of

systems management tools on the market, the lack of capability to integrate with other tools has been the biggest roadblock to provision of truly enterprise-wide management.

It is broadly held by IT directors that the desktop environment, in particular, should be managed and supported as part of the enterprise IT infrastructure and not as a distinct entity. See Exhibit V-2.

Exhibit V-2

### IT Directors Take Holistic View Of IT Infrastructure



Despite the historic lack of integration among many systems management tools, breakthroughs are now occurring. In October 1996, Tivoli announced its TME 10 Global Enterprise Manager, a framework intended to integrate systems management across the enterprise. This product resulted from the bundling of IBM's own SystemView product with Tivoli's TME, following acquisition of Tivoli Systems Inc. by IBM.



**C****Network Monitoring - The Key To Systems Management Success?**

The fact that breakthrough products such as TME10 are only just beginning to make integrated systems management a possibility suggests that there is still a long way to go before seamless enterprise systems management becomes commonplace.

However, research suggests that, more than ever, organisations acknowledge the need to manage their IT infrastructures as a single integrated entity rather than as a series of distinct technical components.

In this respect, network monitoring may be one of the keys to future success, since:

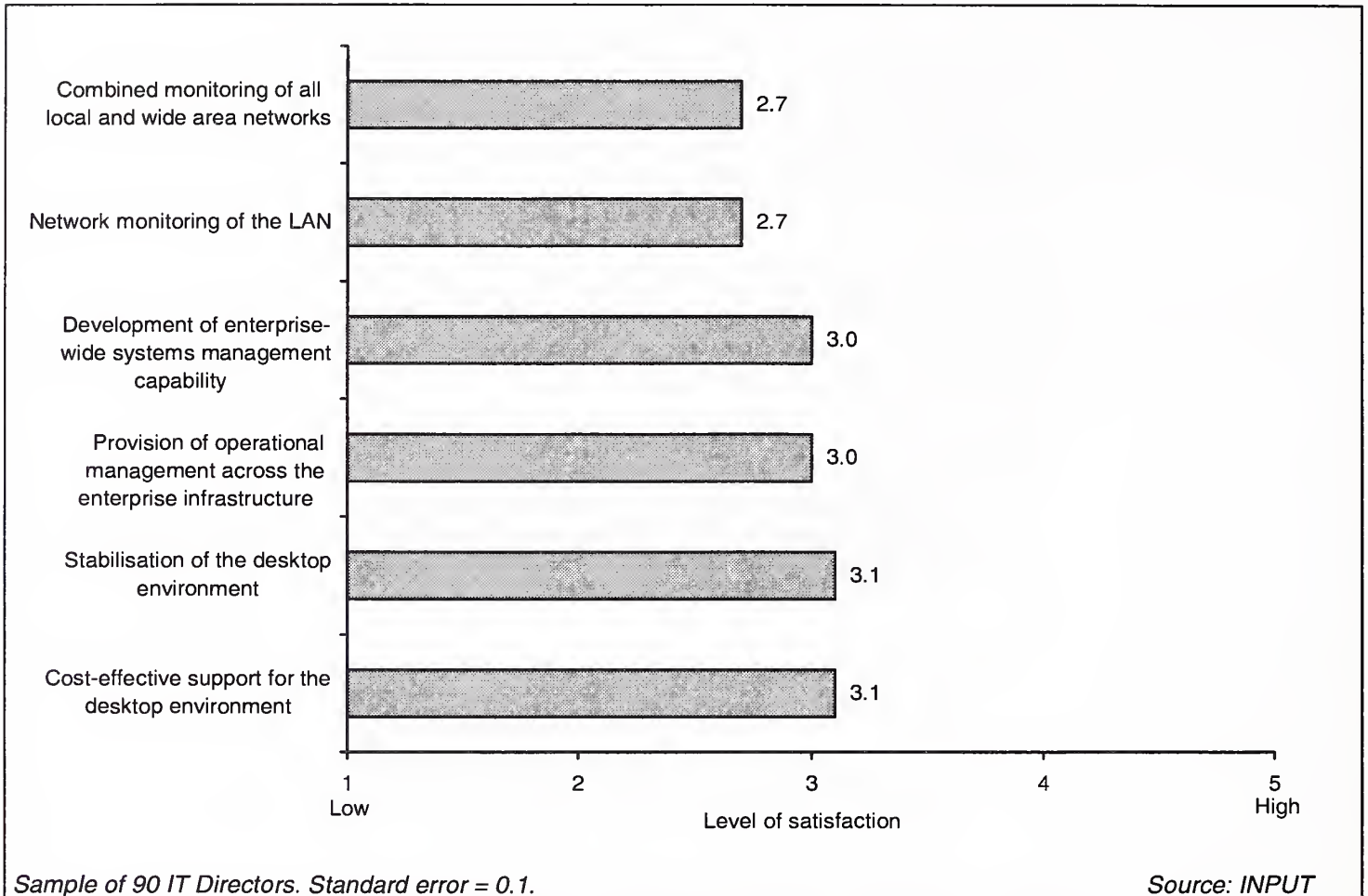
- Organisations are very dissatisfied with their current network monitoring capability
- IT directors perceive a relatively high need for external assistance in network monitoring
- Network monitoring is critical to the successful implementation of enterprise-wide service management.

**1. Current Network Monitoring is Inadequate**

Exhibit V-3 lists a number of areas where IT directors currently express relative dissatisfaction with their IT systems management capability.

Exhibit V-3

### Areas Of Low Satisfaction With Systems Management, Europe 1996



IT directors remain seriously concerned about their ability to support the desktop environment. However IT directors exhibit even lower levels of satisfaction with their organisations' ability to monitor networks.

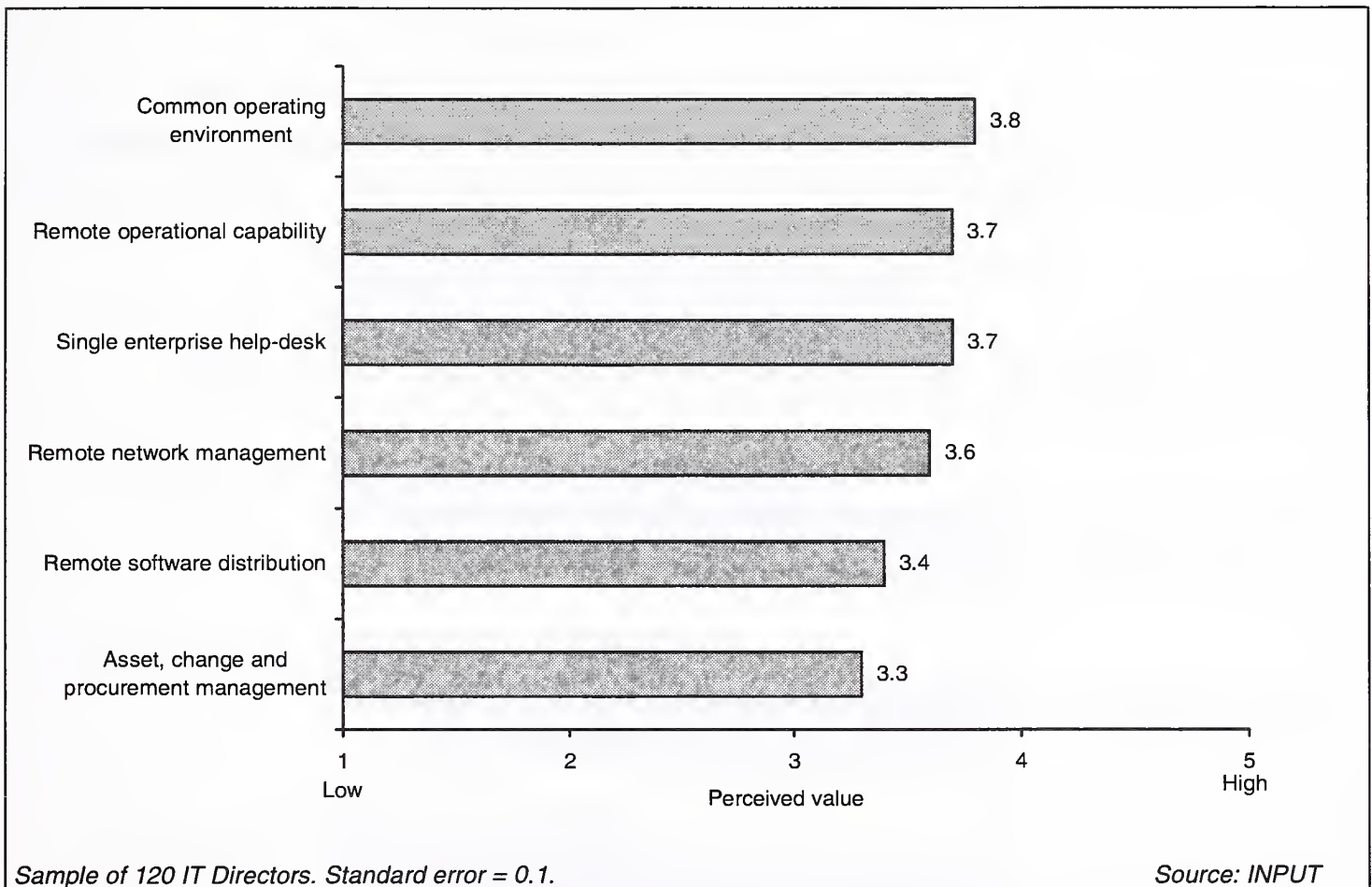
IT directors now increasingly recognise the importance of managing the IT infrastructure on an end to end basis. This need is being driven by intensification of the pressures for electronic communication, both within the organisation and with suppliers and customers. Accordingly, integrated network monitoring, covering both LANs and WANs, is required across the entire IT infrastructure.

Currently, approximately half of IT directors are dissatisfied with their network monitoring capability.

Exhibit V-4 lists the perceived value to IT directors of each of a number of systems management features.

Exhibit V-4

## Perceived Value Of Management Practices, Europe 1996



While the concept of the common operating environment is favoured, IT directors are more sceptical of the value of implementing asset, change management and remote software distribution.

The implementation of a single enterprise help-desk backed up by remote network monitoring and remote operations capability is regarded as more important.

The implementation of standards may be seen as a long-term task, since it may be both difficult and expensive to achieve a standardised environment in the short-term. Although vendors have developed offerings to spread the cost of standardisation exercises, IT directors in Europe are typically not in favour of this approach.

At present, the majority of IT directors strongly favour internal funding of capital costs. Only 10% of IT directors strongly favour adopting a totally funded service price with the vendor funding capital investment.



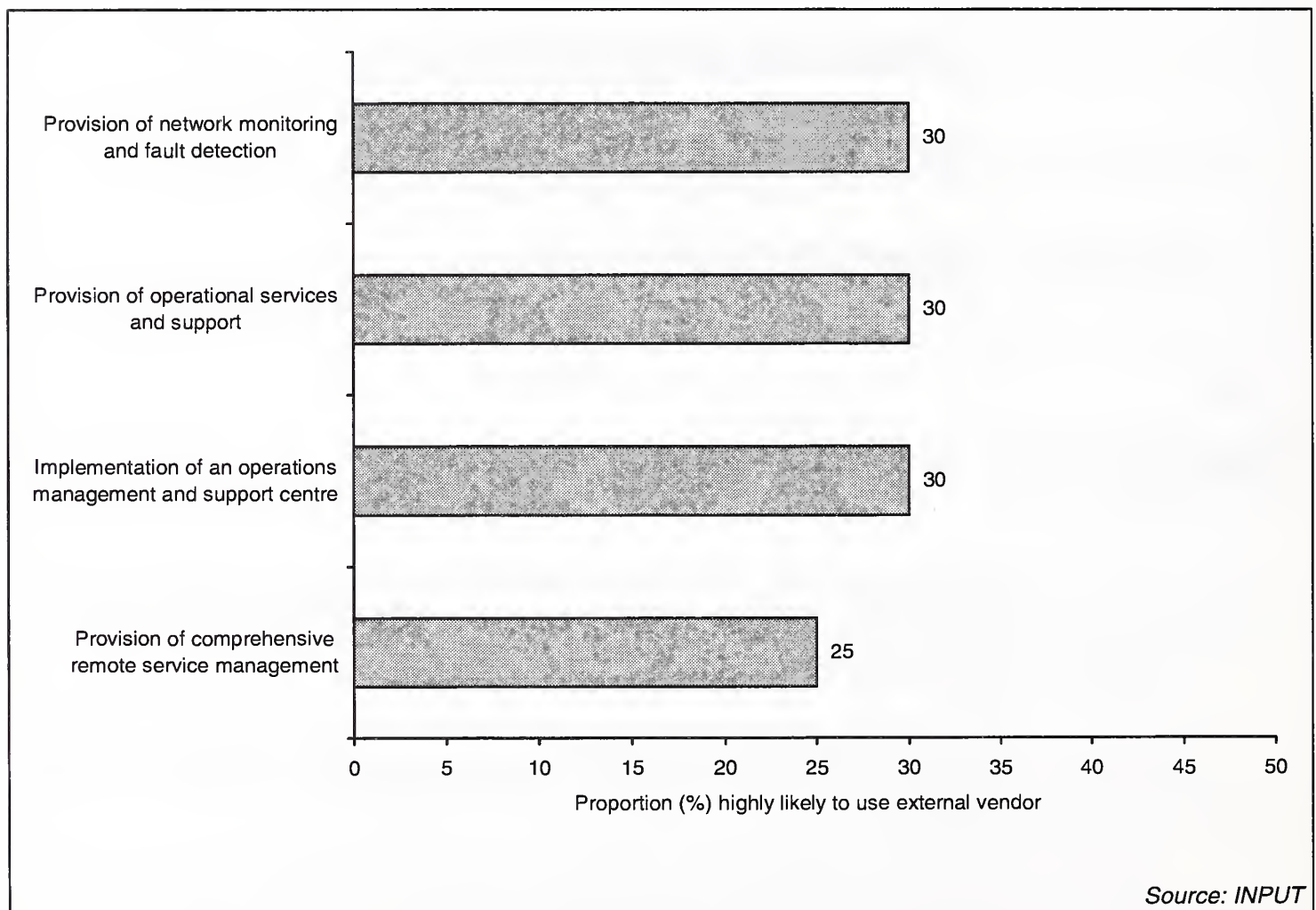
Accordingly the implementation of enterprise help-desk and network management capability may be viewed as more achievable.

## 2. Organisations Need Help in Network Monitoring

In the survey of European IT directors, almost a quarter of respondents perceived a strong need for a remote network service. Exhibit V-5 lists the proportions of organisations highly likely to use an external vendor for a number of key remote service management activities.

Exhibit V-5

### Role Of Vendor In Remote Service Management, Europe 1996



Overall approximately 45% of IT directors would be highly likely to use an external vendor for either:

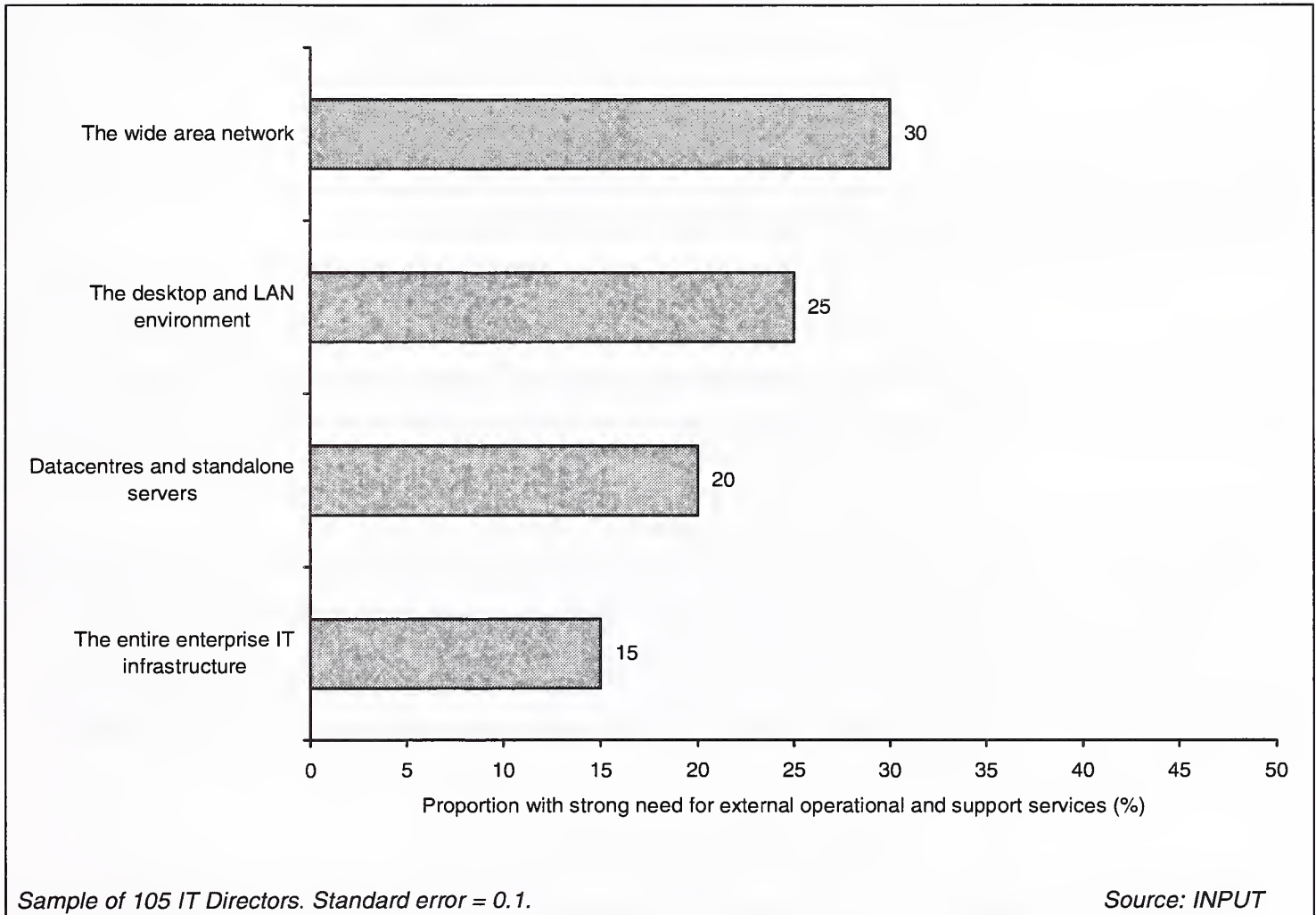
- Provision of network monitoring and fault detection, or
- Implementation of an operations management and support centre.



Exhibit V-6 lists the extent to which IT directors perceive a need for external operations and support services across the various components of their IT infrastructures.

Exhibit V-6

### Perceived Need For External Operations And Support Services, Europe 1996



Support for wide area networks remains a major concern of IT directors. Approximately a third of IT directors are dissatisfied with their current ability to support WANs. This situation is exacerbated by the increasing pressure being put on WANs. Many organisations expect their usage of WANs to increase dramatically over the next few years.

Simultaneously, many organisations perceive a need to upgrade or redesign their existing LANs.

The net result is a considerable demand for network-centric external operations and support services.

In summary, network monitoring is one of the key elements within the framework of enterprise systems management, facilitating performance management and problem solving across the backbone of the IT infrastructure.

Without this key element, it is difficult to monitor or guarantee the performance of applications such as messaging, workflow, or data interchange - all of which are of increasing importance to today's corporations.

## D

---

### Vendor Systems Management Service Offerings

The market for integrated systems management tools is now polarising around IBM's Tivoli and CA's Unicenter. There has been a marked consolidation in this market, some of which is reflected in Exhibit V-1. However, there has been considerable activity elsewhere in 1995/6, with companies such as McAfee, Peregrine Systems, Platinum Technology Inc. and Seagate Software all actively acquiring tools companies.

The major systems vendors have begun to line up behind the leading tools providers in putting together their own systems management service offerings. Some of these offerings are described below. (Note that the inclusion of these particular vendors does not imply market leadership; they have been chosen as a representative sample from a wider vendor population).

#### 1. **Siemens Nixdorf**

This service, (part of SNI's overall Managed Systems Service), aims to ensure that system performance is maximised and that data is exchanged freely and securely between all authorised systems and users. This service covers network servers and network systems, (plus desktop systems). Services include:

- **Fault Management.** Fault identification is initiated by the customer or via remote monitoring systems. An appropriate rectification process is then initiated. The process may include "Remote Fault Resolution" services or support delivered by the system manufacturer, third party support agent or telecommunications agent. Services are available for both hardware and systems software

- **Inventory Management.** Provides an audit of all networking components and records hardware configurations and software revisions. Full system configuration profiles are compiled for each specified network component (down to individual port parameters)
- **Distribution Management.** Network revision and other systems software upgrades are performed using remote software distribution.
- **System Administration.** Network addressing, communications port parameters and access privileges are established for new users and modified as necessary following relocation, etc. All administration activity is performed as and when required (customer initiated)
- **User Configuration Administration.** Adding new users, configuring connections to both remote and local user systems and peripherals.

In addition, SNI offers the following services: licence metering; version management; virus protection; disaster recovery; continuous monitoring and collection of statistics allowing configuration changes to be made where necessary; performance management, whereby problems are diagnosed and remedied using remote management tools; finally, security management provides access privilege administration and unauthorised access detection.

## 2. Hewlett-Packard

HP introduced a Systems Management Service in 1996 specifically for open, client/server environments. This service aims to build on HP's experience in the provision of network solutions. The selective-outsourcing option of this service, allows a company to cost effectively off-load some network and systems management support tasks to focus IT resources on more business critical issues. Systems management tools and technologies include HP's own OpenView and standards-based tools from leading third party vendors.

Hewlett-Packard's Systems Management Service includes:

- **Configuration Management.** Adding/deleting users; scheduling, implementing and testing OS updates and patches; installing and configuring equipment; reporting

- **Performance Management.** Monitoring server performance; logging pertinent performance data; conducting performance reviews; reporting
- **Security Management.** Maintaining passwords; tracking security violations; updating server passwords; conducting security audits
- **Applications Management.** Providing technical application support; reporting bugs to software developer; working with the application vendors on behalf of the customer
- **Business Management.** Account charge-back reporting
- **Print Management**
- **Fault Management.** Server monitoring; fault isolation, resolution, escalation and reporting
- **Operations Management**
- **Storage Management.** Full and partial backups; data recovery (restores); server data recovery (reloads); data archiving and reporting
- **LAN Management.** Identifying all LAN segments and devices on the network.

HP's Systems Management delivery model can essentially be divided into three elements:

- **Event management.** Covers both reactive and proactive functions (e.g. intelligent agents may be used to initiate a disk clean up utility)
- **Optimisation management.** HP logs all events for client reporting purposes
- **Operations management.** The operator is automatically provided with process guidelines for assistance.



### 3. Digital

In April 1996, Digital's own Polycenter systems management business was sold to CA in exchange for a deal to market Unicenter worldwide.

Digital's current service offering, System Management Support, covers any technical aspect of system management including complex configuration management, disk optimisation and performance tuning.

This service is provided in one of the following ways:

- **Ad-hoc.** On a pay-as you-go basis, a specialist can be provided for any number of days
- **Contract.** Service is provided throughout the year
- **Fixed price.** Quotation can be provided to deliver specific results such as:
  - Operations review
  - Performance analysis
  - Performance tuning
  - Security assessment.

Day-to-day system management tasks can be carried out remotely from DEC's Customer Support Centres:

Digital claims to be among the world's largest OEMs of LAN Manager which is included in the company's PATHWORKS networking products.

DEC has a growing customer base for remote services. DEC stresses the multivendor nature of their offer, and emphasises a proactive approach. DEC is also trying to win more remote diagnostics business from its base of mid-range servers including traditional VMS and now NT.

### 4. Olivetti

Olivetti's Network Services supports integration and management of networks and network components. SUPPORTnet is the service offering from Olivetti that specifically addresses management of the network, either as an outsourced option or via in-house facilities.

This service is marketed as proactive and “vital” in that it is serving the growing need to manage mission-critical applications on multivendor LANs and WANs. Network Support groups are called in once a fault has occurred, as a reactive response.

With OliService SUPPORTnet, users can outsource some or all of the network monitoring and management functions. Olivetti claims that since it provides this service to many customers, it is able to amortise the high investments that would otherwise have to be made by the customer in skilled staff, systems and round-the-clock monitoring.

SUPPORTnet is organised through Olivetti’s Control Centres, which OliService claims operate on a world-wide basis 365 days/year, 24 hours/day. A centre is connected to the customer via a dedicated line or switched telephone line. A NetSite device attached to the network collects the information which the Network Manager (based in the control centre) needs to monitor network conditions, analyse alerts, perform administration tasks and solve the more critical problems. Customers receive regular status reports detailing information such as resource usage.

In addition to checking operations, security and performance status, SUPPORTnet also provides:

- Fault Management
- Asset Tracking
- Configuration Management
- Performance Management
- Accounting Management
- Software Distribution.

Other services that are available as part of the SUPPORTnet package are: help desks (for network administrators), on-site system support, troubleshooting and tuning.

Olivetti is establishing a strong European network management infrastructure. The company’s philosophy has been to rapidly establish network management centres to cover each of the various language groups in Europe.

## 5. Bull Information Systems

Bull's NETmanage service is one part of the company's Network Services portfolio which also consists of: NETplan; NETstart and NETcare.

The NETmanage service monitors both data and voice networks on a managed service basis and is delivered from Bull's Network Management centre in Hemel Hempstead in the UK.

The NETmanage service includes:

- LAN/WAN management to customers' agreed parameters
- Provision of linkage to customers' Help Desk
- Provision of remote LAN monitoring and supervision
- Provision of network added value services
- Provision of bandwidth on existing leased lines
- Design of integrated voice and data networks.

In terms of system administration, NETmanage is able via modem to add new users, change passwords or maintain disk allocations; this is supplemented by scheduled visits to assess specific customer needs.

A number of options are available to administer the network on the customer's behalf, ranging from back-up support to full administration of the network by use of network monitoring tools.

## 6. Sun Microsystems

The SunNet Manager environment consists of three key components: user tools, management services and Application Programming Interfaces (API)'s.

SunNet Manager is a UNIX system software product for heterogeneous network management, based on a protocol-independent distributed management architecture. It offers a graphical topology display, and a site licence for the Simple Network Management Protocol (SNMP) agent.

Cooperative Consoles is a SunNet Manager platform extension that provides an enterprise-wide shared network repository.

SunNet Manager supports a variety of industry standards for the management of diverse computing environments. For example, SNMP is bundled with the product, so SunNet Manager can manage TCP/IP networks.

In 1989, Sun took the decision to move to a networked client/server environment. The company realised that it needed to adapt its traditional systems management approach to manage its growing distributed environment, with the objective of achieving “Enterprise Management”.

Sun has now identified nine key areas that define what they mean by enterprise systems and network management services:

- Help desk management
- Fault & performance management
- Installation & configuration management
- Software management
- Data & storage management
- Security management
- Production management
- Contingency management
- Asset & accounting management.

Sun is focusing on providing more value added services at the higher level of banded support services, (SunSpectrum: Platinum/Gold/Silver/Bronze). However, it believes that it is unlikely that customers will upgrade to a higher level of support purely for remote support provision.

In Sun’s view, remote support has the advantages that it is economical and allows predictive monitoring, irrespective of whether support is at the higher service level or not.

Sun’s provision of remote services at the higher banded levels (Platinum and Gold) offers support that is proactive i.e. responding to mission-critical problems, increasing up-time etc. Remote services at lower service levels are essentially reactive (i.e. break/fix).



Sun believes it is necessary to include remote support at both ends of the support spectrum. Sun's new product range of Ultra Enterprise servers includes built-in diagnostics for proactive support.

(Blank)



# The Customer Services Market Defined

## A

---

### INPUT's View of The Customer Services Market

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

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

- Equipment maintenance
- Environmental services
- Systems software support
- Education and training
- Professional services
- Business continuity services.

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

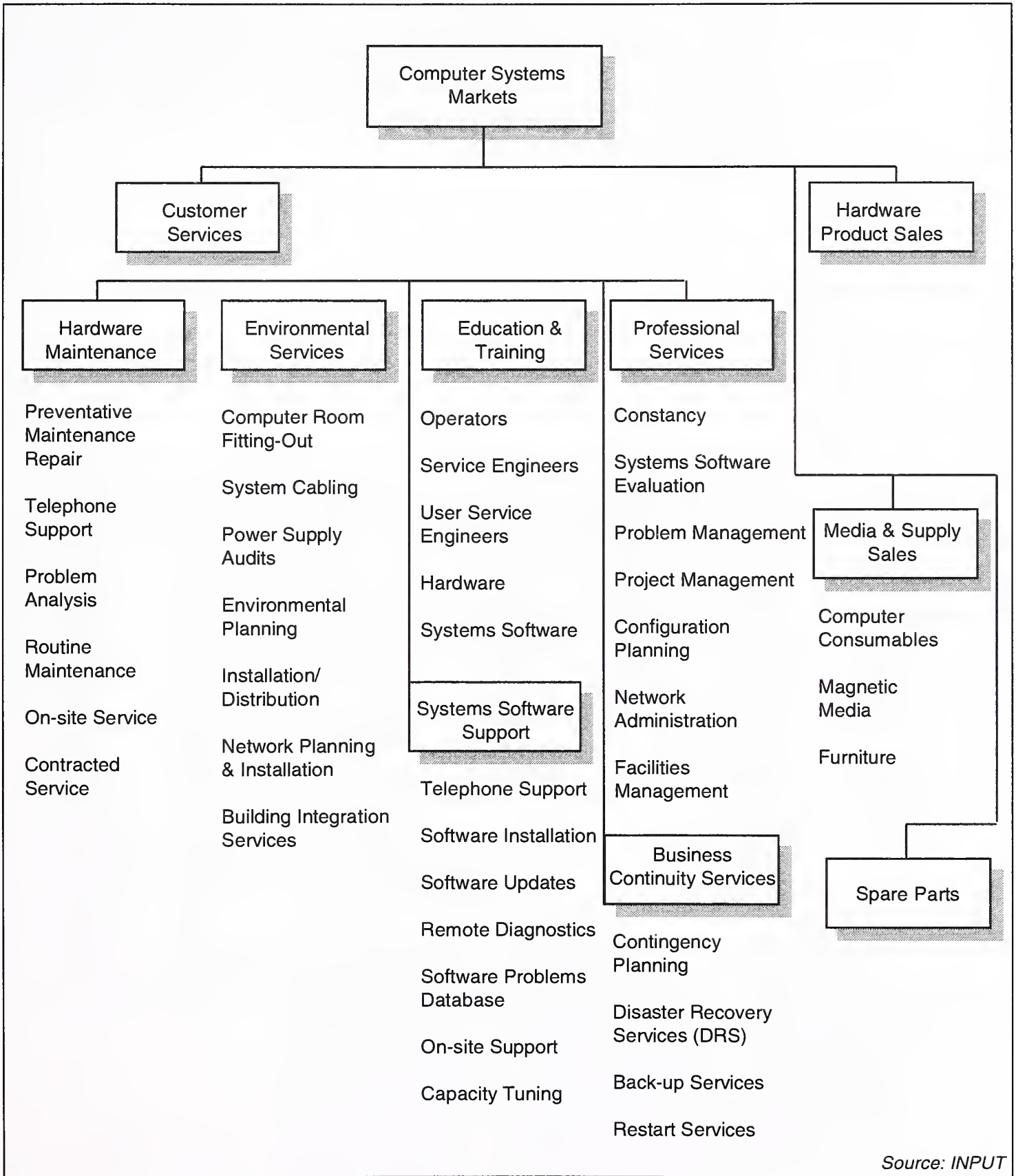
- Sales of spare parts
- Media and supplies sales
- Hardware product sales themselves.

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



Exhibit A-1

### Customer Services Market Structure

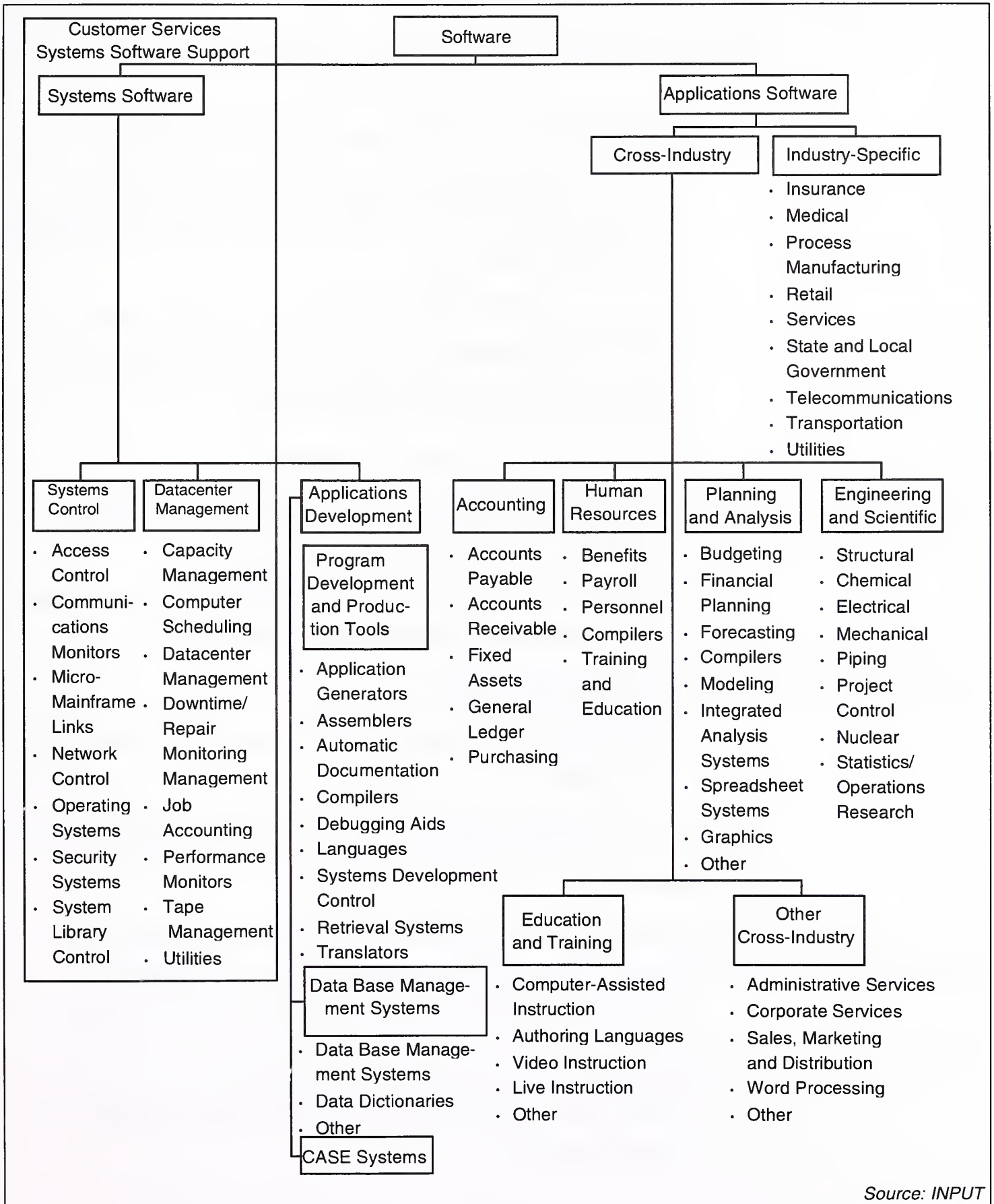


Source: INPUT

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

Exhibit A-2

### Software Products Market Structure



Source: INPUT

**B****Customer Services Sectors**

---

Customer services sectors are defined by INPUT as follows:

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

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

- **Systems software service/support:** software maintenance activities that relate to systems software (not applications software). Included are associated support activities such as telephone support, problem analysis and software diagnostics.
- **Education and training:** all education and training expenditures for IT industry applications are included within the definition of customer services.



- **Professional services:** within the definition of customer services, this sector of the market refers only to those elements of professional services that are concerned with the support of the systems platform or network and its operating environment, including areas such as:
  - Consultancy
  - Network Administration
  - System Software Evaluation
  - Problems Management
  - Project Management
  - Configuration or Capacity Planning.

To distinguish them from environmental services, these professional services are normally restricted to planning, design or management services, without any installation of platform or ancillary equipment. It is important to acknowledge that these services are only part of the more widely defined professional services marketplace.

- **Business continuity services** include a number of service elements related to keeping a business running in the event of a major incident which temporarily puts its IT platform or network completely out of action. They include:
  - Planning for such a contingency
  - Disaster Recovery Services
  - Back-up services for magnetic or optical media
  - Restart services, covering all activities which contribute to reinstating on a permanent basis the platform or network which as suffered the major incident.

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

**C**

---

**Customer Services Vendors**

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

- **Equipment vendors** are defined as companies that manufacture computer hardware/equipment and may service equipment manufactured by themselves or other equipment manufacturers
- **Independent maintenance organisations (IMOs)** are defined as companies that service computer equipment and are independent of the manufacturer or agent who sold the equipment
- **Dealers and distributors** are defined as vendors that service equipment that is sold by them, either as an agent of the equipment manufacturer or as a value-added reseller (VAR).

**D**

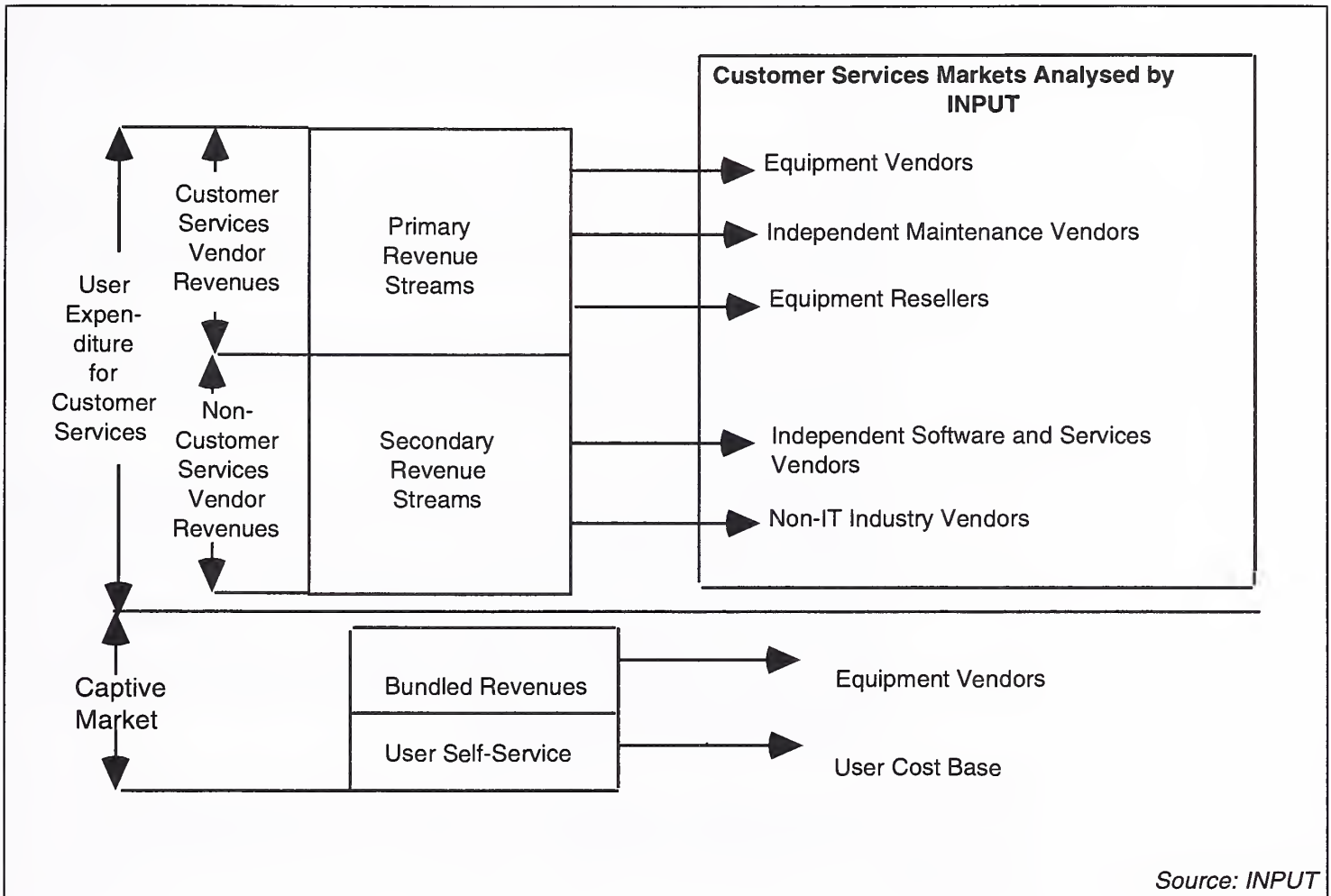
---

**Customer Services Revenue Streams**

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

Exhibit A-3

### Customer Services Revenue Streams



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

- **Customer services vendor revenues.** This portion of the customer services market refers to vendors for whom customer services revenues are considered to be a primary revenue stream:
  - Equipment Vendors
  - Independent Maintenance Companies
  - The Dealer/Distributor portion of the indirect equipment resellers market.

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

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

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



(Blank)







