

DECEMBER 1987

---

# CUSTOMER SERVICE PRICING



Published by  
INPUT  
1280 Villa Street  
Mountain View, CA 94041-1194  
U.S.A.

**Customer Service Program (FCSP)**

***Customer Service Pricing***

Copyright ©1987 by INPUT. All rights reserved.  
Printed in the United States of America.  
No part of this publication may be reproduced or  
distributed in any form or by any means, or stored  
in a data base or retrieval system, without the prior  
written permission of the publisher.



## Abstract

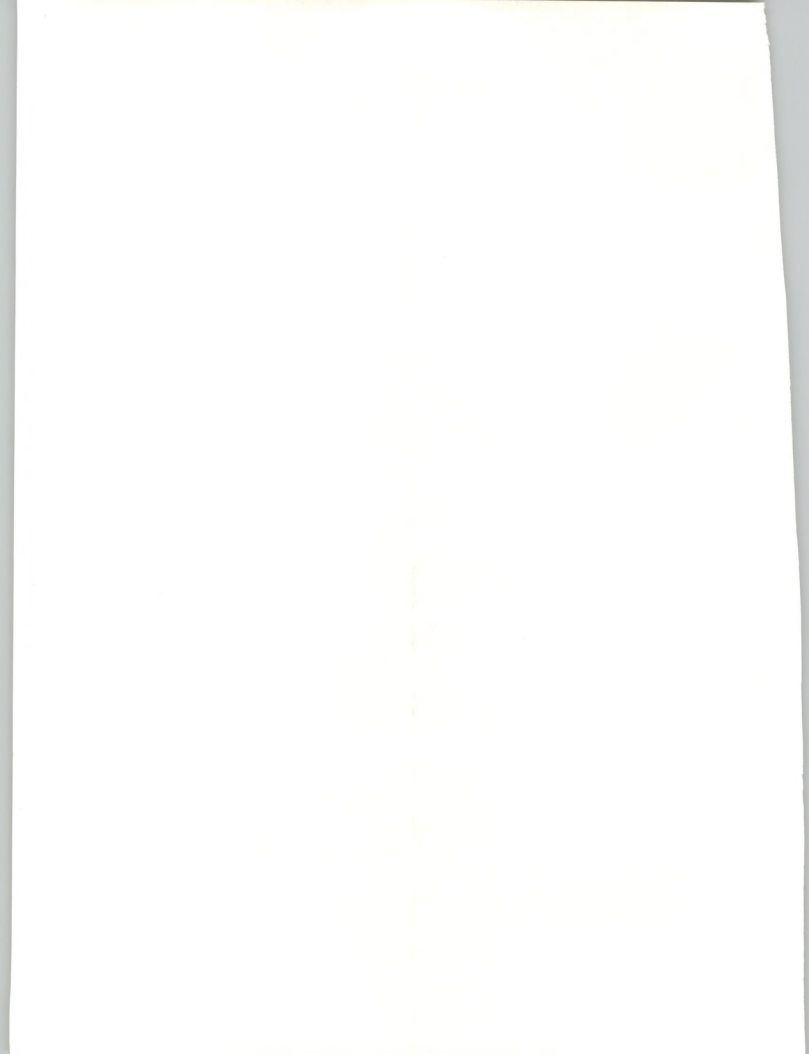
The following report, Customer Service Pricing, is the last of a series of topic reports for clients of INPUT's 1987 Customer Service Program. This report analyzes trends in service pricing and how those trends have affected service profitability as well as customer satisfaction, both with the product and the service provided itself. The report begins by analyzing historical service pricing trends on key large and small systems products and how those trends have affected current pricing levels. In addition, the report examines how service pricing affects the total cost of ownership.

During this discussion, key industry developments in the customer service industry are addressed. Most significant of these developments was the introduction of IBM's Corporate Service Amendment and the similar programs offered by third-party competitors. The report discusses the impact these offerings will have on service revenue and customer satisfaction.

Next, the report looks at customer service pricing through the eyes of the user, including a timely examination of user attitudes toward service discounting and self-maintenance. This analysis is particularly important in light of recent service discount programs such as IBM's Corporate Service Amendment.

The report concludes with a discussion of pricing methodologies, resulting with the development of a new pricing model that reflects the growing importance and profitability of such non-traditional service revenue sources as software support, professional services, and educational services.

The report contains 48 pages, with 24 exhibits.



# Table of Contents

<b>I</b>	Introduction	1
	A. Methodology	1
<hr/>		
<b>II</b>	Executive Overview	3
	A. Service Pricing Trends, 1987	3
	B. Service Price Trends, 1987-1992	4
	C. Current Industry Averages for Service Pricing	5
	D. Impact of CSA-Like Agreements	7
	E. Evolution of the Service Pricing Model	9
<hr/>		
<b>III</b>	Vendor Pricing Analysis	11
	A. Historical Pricing Trends	11
	B. Current Vendor Service Pricing	14
	C. Effect of Service Pricing on Cost of Ownership	18
	D. Impact of CSA on Vendor Service Pricing	21
<hr/>		
<b>IV</b>	Users as a Force in Service Pricing	27
	A. User Attitudes Toward Extended Coverages	27
	B. User Attitudes Toward Increased Self-Maintenance	30
	C. User Experience with Longer Billing Cycles	32
<hr/>		
<b>V</b>	Evolution of the Service Pricing Model	37
	A. Transition from Cost-Center to Profit-Center	37
	B. Traditional Pricing Strategies	37
	C. Creation of a New Pricing Model	39
	D. Recommendations and Conclusions	40





## Table of Contents (Continued)

<b>A</b>	Appendix: Definitions	43
----------	-----------------------	----



## Exhibits

### II

-1	Service Pricing Trends — 1987	4
-2	Service Price Trends — 1987-1992	6
-3	Industry Service Price Averages	7
-4	Impact of CSA-Like Agreements	8
-5	Evolution of Service Price Model	10

---

### III

-1	Large System Pricing Trends 1982-1987	12
-2	Small System Pricing Trends 1982-1987	13
-3	Service Pricing on Selected Large Systems	15
-4	Service Pricing on Selected High-End Small Systems	16
-5	Service Pricing on Selected Low-End Small Systems	17
-6	Service Pricing on Selected Workstations	18
-7	Effect of Service Price on Large System Cost of Ownership	19
-8	Large System Five-Year Cost of Ownership	20
-9	Comparison of IBM 3090 vs. DEC VAX 8978	22
-10	Effect of Service Price on Small System Cost of Ownership	23
-11	Small System Five-Year Cost of Ownership	24
-12	CSA Competitive Analysis	26

---

### IV

-1	Large System User Experience with Extended Coverages	28
-2	Small System User Experience with Extended Coverages	29
-3	User Willingness to Increase Participation in Maintenance	31
-4	Large System User Attitudes About Discounts for Self-Maintenance	33
-5	Small System User Attitudes About Discounts for Self-Maintenance	34



## Exhibits (Continued)

-6	Large System User Experience with Extended Billing Cycles	35
-7	Small System User Experience with Extended Billing Cycles	36





I

## Introduction

---







## Introduction

This report, Customer Service Pricing, is produced by INPUT as part of the 1987 Customer Service Program for the United States. The report is the last of three special topic studies (the others being Automated Service Delivery and TPM Competitive Environment).

The purpose of this study is not to provide a simple accounting of maintenance and support pricing, since service pricing is rarely static. Instead, the goal of this report is to show how a number of outside forces bring about changes in how service pricing is set by examining historical pricing trends of leading manufacturers and their third-party maintenance counterparts.

In addition, the report will analyze current factors in service pricing, including lengthened warranties, volume service price discounts, increased user-involvement discounts, and will discuss the impact that these factors will have on service delivery and revenue growth in the future.

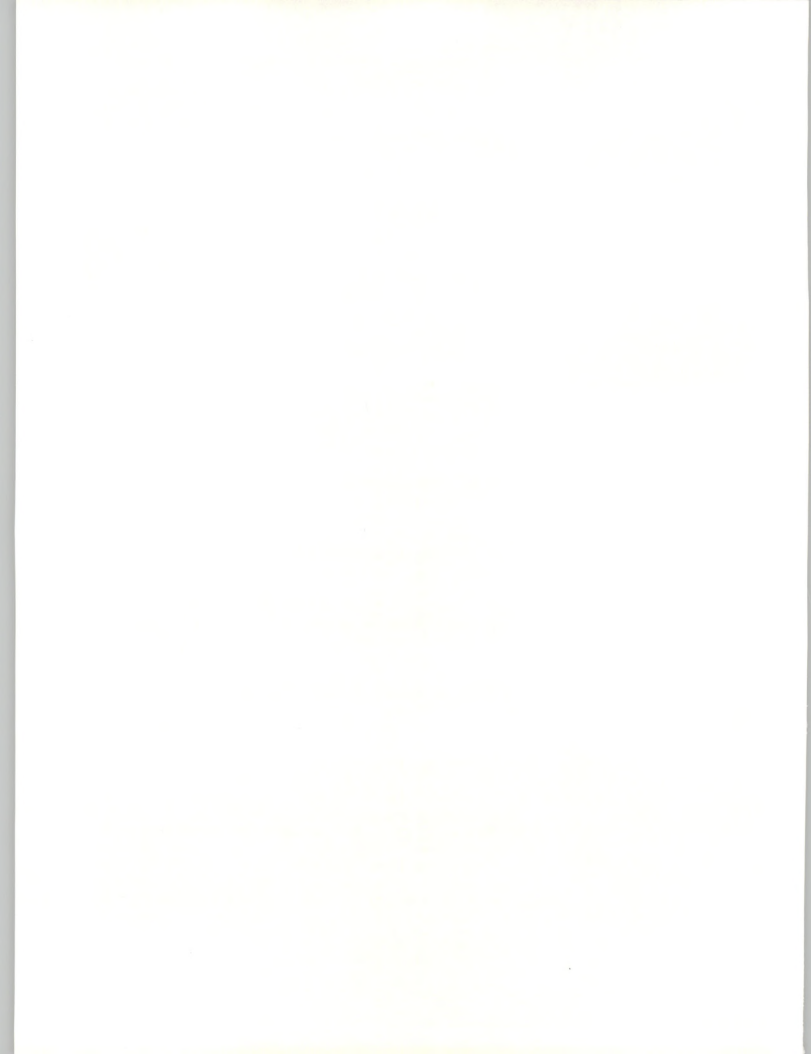
This will lead to the establishment of a new service pricing model, one that reflects the declining contribution of hardware maintenance and shows the increased importance of software support and professional services, particularly those that support the integration and performance of the information systems at user sites.

---

### A

#### Methodology

Much of this report is based upon secondary research of publicly available current service pricing from leading service organizations (both manufacturer-based and third-party). In addition, historical pricing used in analyzing pricing trends was usually derived from INPUT's library of information on leading customer service organizations. Whenever possible, pricing was confirmed by primary research, either by telephone interviews with the service vendor or by consulting the most up-to-date consultants' manuals made available to INPUT.



This study was supplemented, where appropriate, by user data from INPUT's 1987 User Service Requirements reports covering the large systems (mainframe), small systems (minicomputer), software, and third-party service markets.





## Executive Overview

The following chapter contains summary information from the study *Customer Service Pricing*, in a format that provides the key research findings and observations in a quick and orderly format. Each finding is presented in an exhibit with accompanying text.

The customer services organizations are faced with increasing pressure from users to lower service prices at levels commensurate with improvements in product reliability. At the same time, the service organizations are expected to continue to provide constant revenue and profit contribution. As a result, service pricing levels have to be constantly monitored to assure that they remain competitive while at the same time continue to provide acceptable margins.

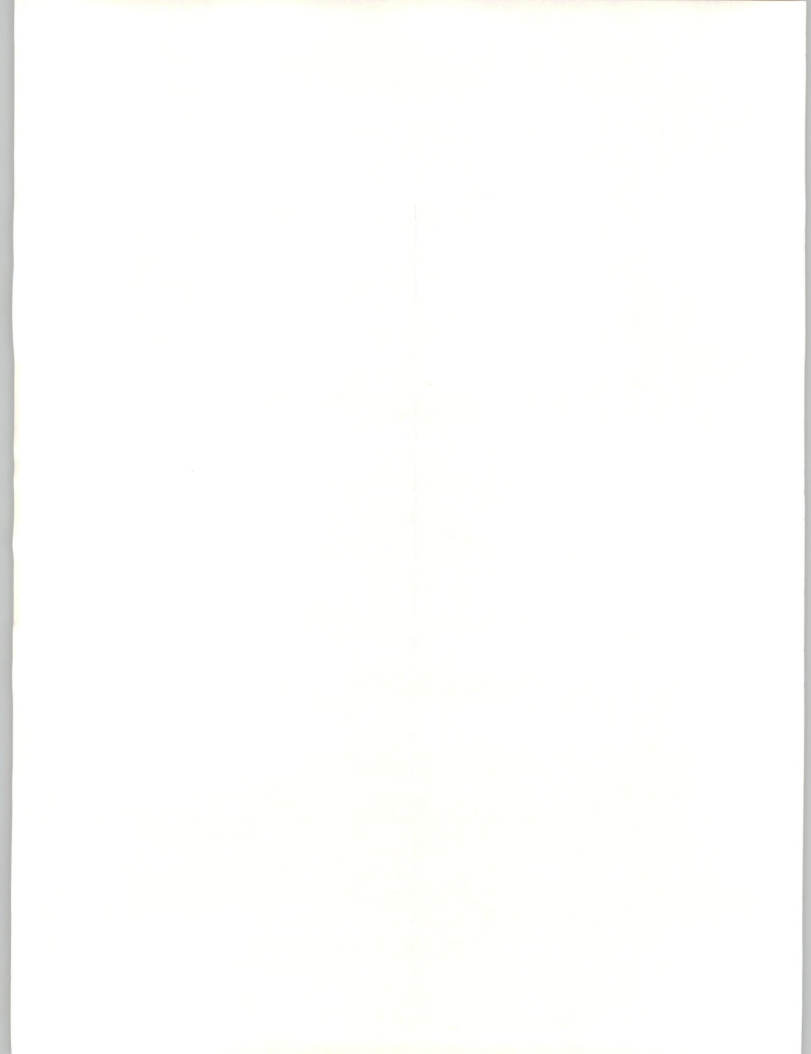
---

### A

#### Service Pricing Trends, 1987

Driven by both internal and external pressures, customer service organizations continue to reduce hardware maintenance pricing. Improved hardware reliability, increased competition from both manufacturers and third-party maintenance organizations (TPMs), and increased pressure from users have all contributed to cause service vendors to lower prices. As a result, manufacturer service organizations, and a few progressive TPMs, are now looking at traditional hardware activities as "loss-leaders," instead relying on parts sales, software support, and professional services as their profit generators.

Another important pricing factor has been the introduction of dramatic service price discounts by IBM, and the expected competitive reaction by TPMs and other manufacturers. IBM announced first the Corporate Service Amendment (CSA) and then the companion Mid-Range Systems Amendment, which provided discounts that ranged between 17-45% for multi-year contracts in which certified users agreed to set up their own "help desks," among other requirements. Control Data Corporation, TRW, Sorbus, and Intelogic Trace soon countered with similar programs, although most recognized that simply matching IBM would not be



enough, and as a result lessened or deleted requirements placed upon their users.

IBM was also aggressive in their pricing of low-end products, particularly in their newly announced PS/2 family of microcomputers. The PS/2 Model 80, at the upper end of this product line, can be upgraded to compete with workstations from such vendors as Sun Micro and Apollo, yet carries a much lower service price. On-site pricing on the other members of IBM's PS/2 are significantly lower than other manufacturers' products.

Exhibit II-1 summarizes these issues, and suggests that what is emerging from the downward spiral of hardware maintenance pricing is a change in the model used for establishing pricing levels, one that looks away from hardware maintenance activities. This new model will be discussed further later in this section.

EXHIBIT II-1

#### SERVICE PRICING TRENDS - 1987

- Declining Hardware Maintenance Pricing
- Industry Reacts to CSA Discounting
- IBM Aggressive in Low-End Pricing
- Development of New Pricing Model

#### B

#### Service Price Trends, 1987-1992

In INPUT's last study on customer service pricing (November 1986), declining service prices were predicted and attributed to three factors: increased competition, improved reliability and serviceability, and improved service vendor performance. The report concluded that service prices would continue to decline, spurred by user pressure. The report also concluded that service organizations would respond by "unbundling" many service activities that used to be provided as part of the standard contract agreement.





In 1987, prices continued to decline as a result of continued competition between manufacturer-based service organizations and third-party maintenance organizations (TPMs). Manufacturers have been particularly aggressive in lowering hardware service pricing, as shown by industry-leader IBM's Corporate Service Amendment (CSA) and Mid-Range System Amendment. Third-party organizations had to follow suit, cutting deeply into their profit margins in order to keep pace.

Exhibit II-2 plots IBM service pricing in relation to industry averages, showing IBM's competitiveness in the large systems market. IBM has also been aggressive in its pricing of microcomputer service, particularly regarding their newest line on personal computers, the PS/2 family. IBM now offers on-site support for PS/2s for less than 10%, which is much lower than the industry average for similar products. IBM service pricing reductions are also bringing down the small systems average.

Small systems pricing should continue to drop during the forecast period as more vendors incorporate remote support technology as well as redundant system design into their systems (factors that dropped large system service pricing significantly between 1982 and 1985).

## C

### Current Industry Averages For Service Pricing

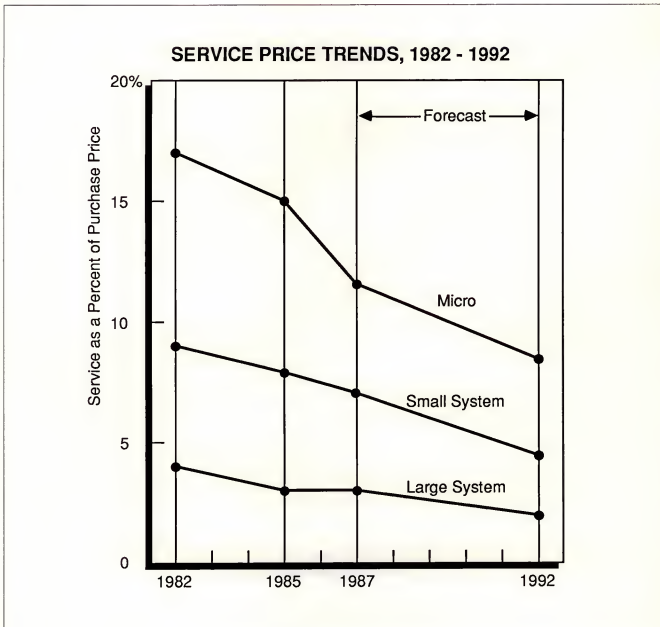
In 1987, large system pricing continues to be focused around IBM service pricing, particularly for those vendors, NAS and Amdahl, whose products compete most directly with "Big Blue." While most other product areas continued to show significant price reductions, large system pricing has stabilized in the 2-6% (of purchase price) range. To continue to lower large system service pricing, service vendors must reduce the level of service that they provide to end-users by requiring that end-users assume increased responsibility for diagnostic and rudimentary repair work (as required by IBM's Corporate Service Amendment). Service pricing at the higher end of the large systems range will drop as older products that do not make full use of remote support technology are phased out of the market.

The range of small systems pricing is broad due to the wide range of products that fall in this category. Older traditional minicomputers (such as the HP 3000 Model 27) and some of the newer superminicomputers (from Concurrent and Gould) range in service price (as a percentage of purchase price) between 7-15% per year, while newer products from IBM (9370), DEC (8XXX) and Data General (MV/20,000) range between 3-5%. Increased competition, as well as increased use of remote support technology, should continue to drive down small systems service pricing.

In the smaller systems (work stations and microcomputers), IBM's introduction of their PS/2 family has drastically reduced the service price-to-purchase price ratio. In the workstation arena, IBM's recently an-



EXHIBIT II-2

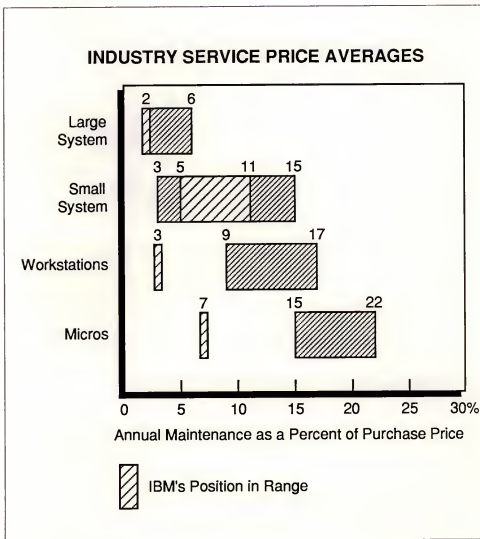


nounced PS/2 Model 80's service price is only 3% of purchase price, compared to the 9-17% for other vendors' products. Other members of IBM's PS/2 product line are similarly priced (for service) far below competitive products.

Exhibit II-3 illustrates service price ranges by product type, with IBM's relative price position in each range.

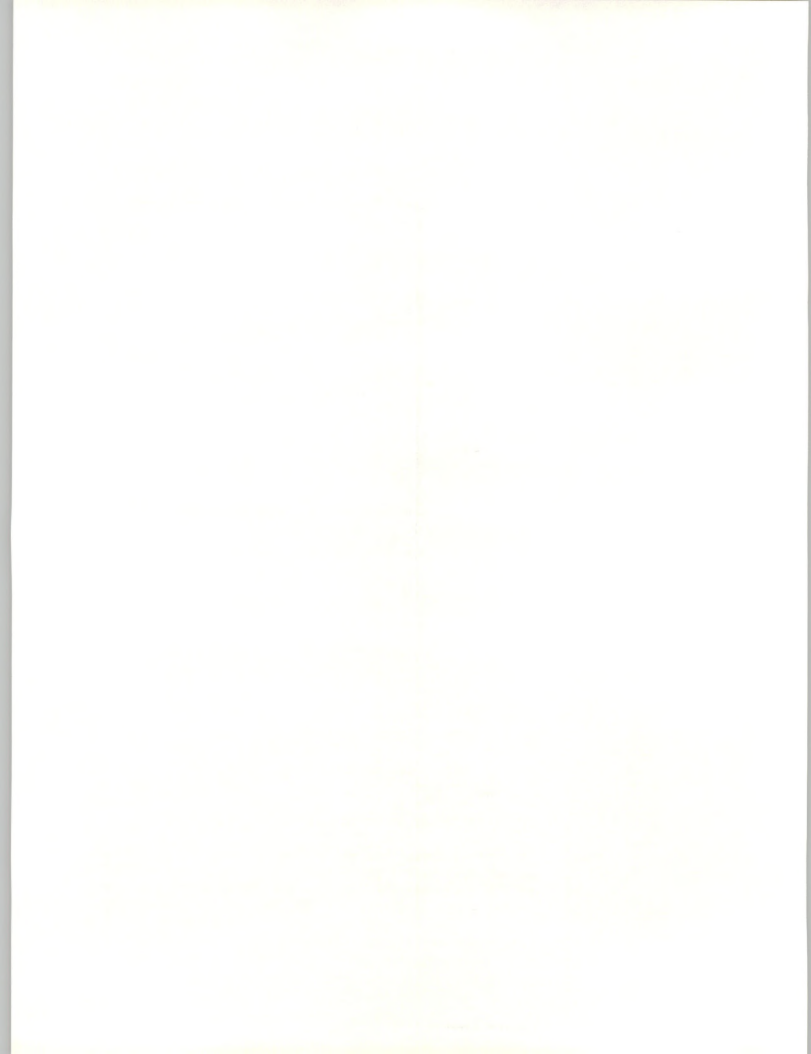


EXHIBIT II-3

**D****Impact Of CSA-Like Agreements**

In 1987, IBM announced two companion service policies that reflected the growing recognition of hardware maintenance price sensitivity felt by computer users. The first, the Corporate Service Amendment, offered large system users discounts of up to 45% (depending on contract length) for taking a written "certification" test and setting up "help desk," among other requirements. More recently, IBM announced a similar plan, the Mid-Range System Amendment, for small systems users.

These two policies sparked similar (if not more attractive in terms of discounts and requirements) offerings from TPM competitors like CDC and TRW, to name a few. Since it was necessary to give greater incentive to choose their policy over IBM's, TPMs offered greater discounts, shorter certification exams, fewer penalties for canceling the policy, and more assurances against price increases. In other words, the TPMs tried



to "one-up" IBM's policy. Exhibit II-4 summarizes the impact of CSA-like agreements.

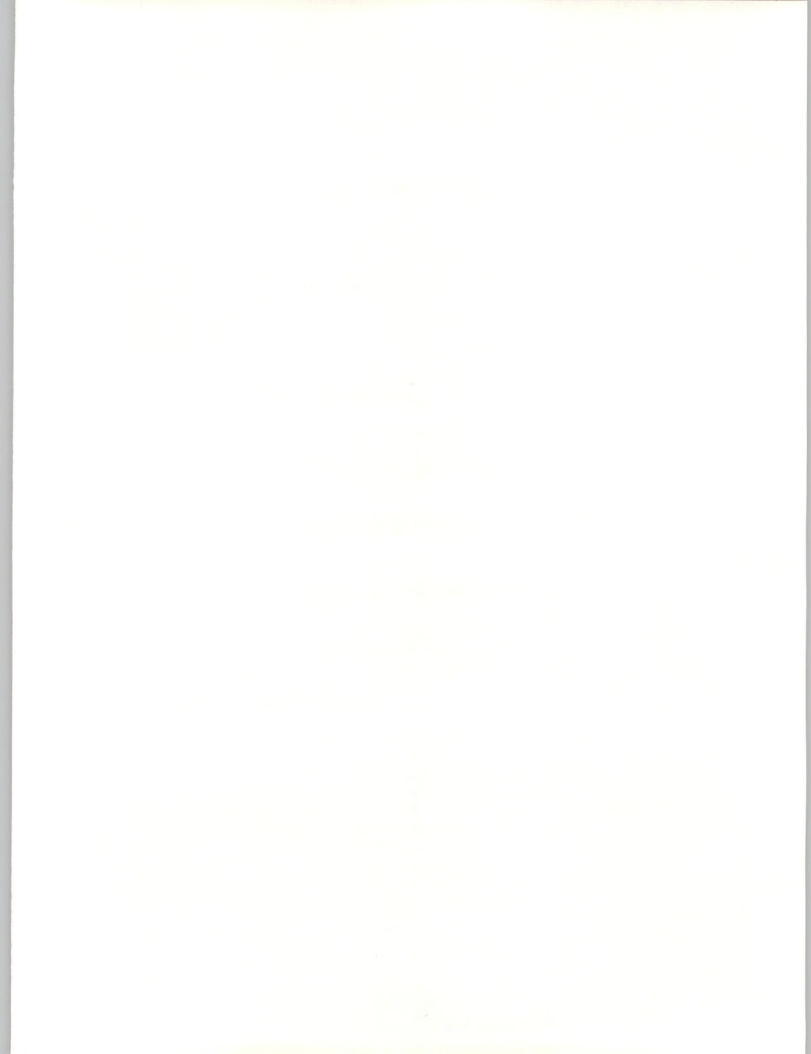
Opponents to these types of programs argued that while users may benefit from lower service prices, these CSA-like service contracts can be detrimental to users because they "lock" users into long-term contracts with penalties for early withdrawal. Critics of these CSA-like agreements also point out that these contracts reduce the level of service provided to users by increasing the amount of user involvement in the support process (eg., setting up help desks).

EXHIBIT II-4

#### IMPACT OF CSA-TYPE AGREEMENTS

- Lock Users into Service Contracts
- Increase User Involvement in Support
- Increase User "Price Sensitivity"
- Decrease Vendor Control Over Service Quality

Two key results of the growth of CSA-like agreements are the facts that user price sensitivity is increased, leading to increased pressure from users to lower service prices, and there is decreased vendor control over service quality, since users will assume increased responsibility for support activities.





**E****Evolution Of The  
Service Pricing  
Model**

The evolution of service pricing strategies is closely connected to the development of the service organization from its start as a cost center to its transition into a profit center. In the 1970s, most service organizations were operated as cost centers, and, accordingly, service pricing strategy was cost-based. The predominant service performed was hardware maintenance, and when non-hardware maintenance was performed, it usually was performed for free.

By the early 1980s, most service organizations had evolved into profit centers. To support this, most service organizations had adopted more elaborate pricing schemes that not only attempted to cover costs but also provided an increasing profit margin target. Service became a product that could be packaged or marketed and sold on its own.

During this time, service organizations began to "unbundle" and charge for many services that were previously provided for free. User requirements for these services (software support, training, and consulting services) increased, and at the same time a number of pressures forced service organizations to lower hardware maintenance prices.

To remain successful, service organizations must again evolve their service pricing model in order to de-emphasize hardware maintenance activities (which will act as a "price-leader") and emphasize the areas of software support, professional services, and parts sales. By doing so, service itself will evolve from "reactive" remedial maintenance service to "proactive" performance support.

Exhibit II-5 summarizes the evolution of the service price model, projecting how hardware maintenance activities will be derived by software support, professional services, and spare parts sales.

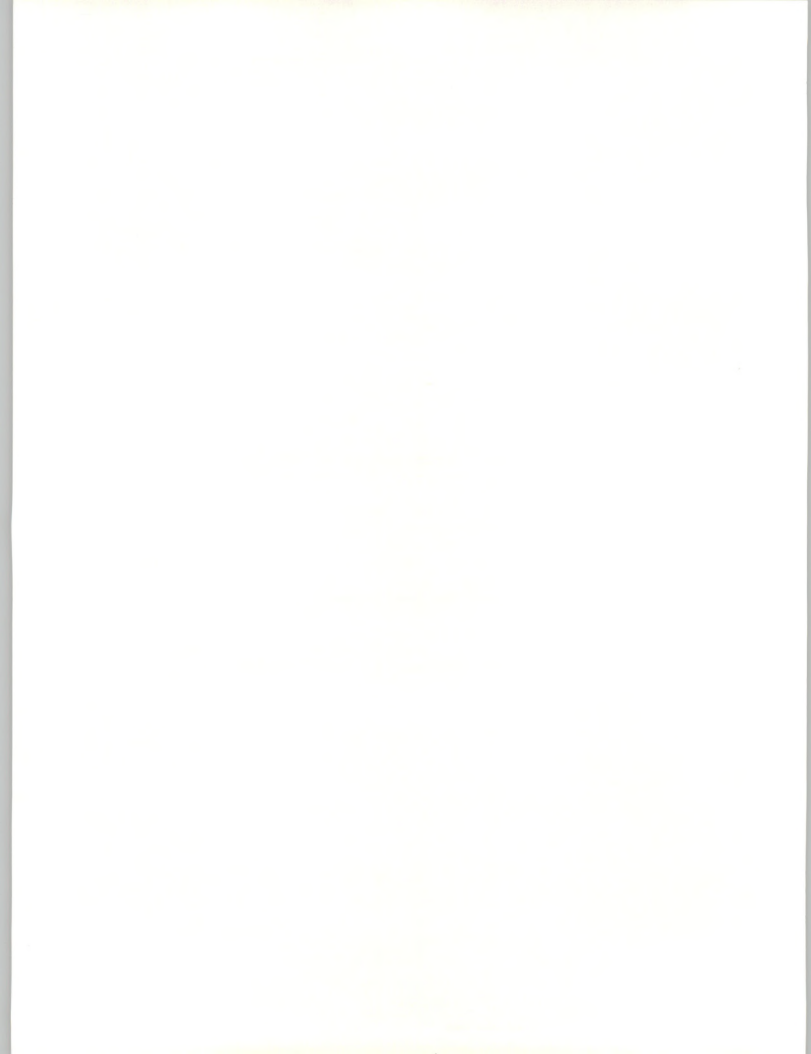


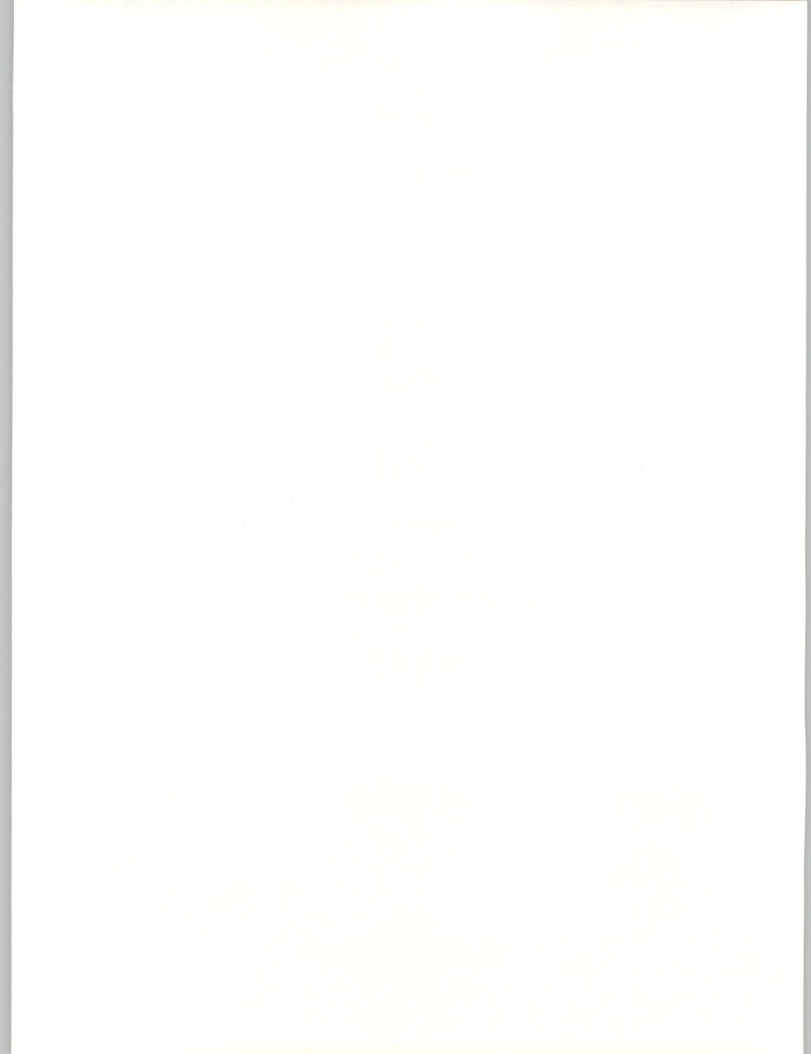


EXHIBIT II-5

## EVOLUTION OF SERVICE PRICE MODEL

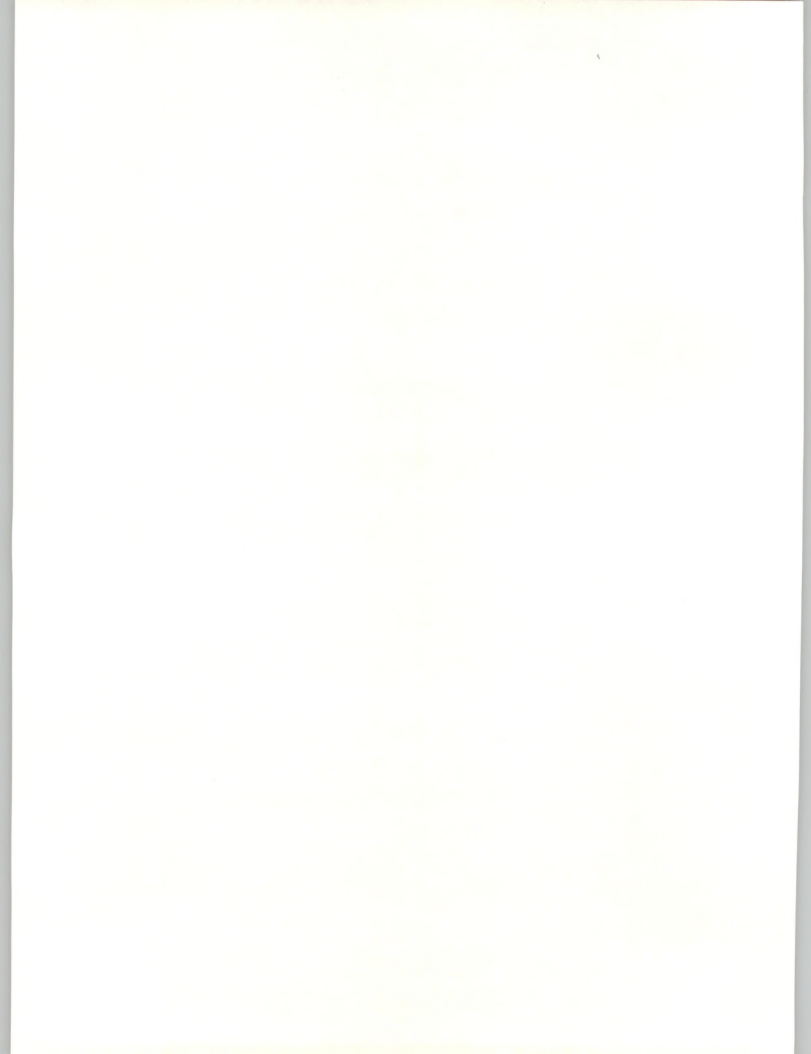
SERVICE PRICE ATTRIBUTES	TIME FRAME
Cost-Based Hardware Emphasis Non-Hardware Activities "Thrown-in" 	1970s
Profit-Based "Unbundled" Services 	1980s
Hardware Maintenance as a "Loss-Leader" Profit from Software Support, Professional Services, Parts Sales	1990s





## Vendor Pricing Analysis







## Vendor Pricing Analysis

### A

#### Historical Pricing Trends

In the last report that INPUT prepared on service pricing, INPUT discussed how user and vendor pressures had caused a significant decline in service pricing. Users recognized increased hardware reliability, and, as a result, pressured vendors to stabilize, if not lower hardware maintenance pricing. Service vendors were also faced with internal pressure to remain price-competitive. At the same time, service vendors were also expected to continue to contribute margin growth. These pressures combined to lower service prices while at the same time encouraging the development and use of increased service automation activities to lower service costs.

These pressures continue to dog service organizations, as demonstrated by continued declines in hardware maintenance pricing. Exhibits III-1 and III-2 show large and small system pricing trends from 1981 to 1987.

Large system service pricing continued to decline as a percentage of purchase price between 1985 and 1987, spurred by IBM's Corporate Service Amendment (CSA) which offered significant discounts to users who assumed responsibility for certain aspects of diagnosis and support. Price drops in this period rivaled those between 1983 and 1985, when increased product competition combined with early use of remote diagnostics to lower mainframe service pricing.

The decline in small systems service pricing was much more recent (1985-1987), as wide range use of remote support technology did not occur until this period of time. Furthermore, advances in product sophistication, particularly in the high-end (superminicomputer) product areas, acted to reduce the ratio of service price-to-purchase price.

INPUT expects that large systems service pricing will continue to decline into the 1990s as continued product competition between market leaders

the 1990s, the number of people with a mental health problem has increased in the UK (Mental Health Act 1983, 1990).

There is a growing awareness of the need to improve the lives of people with mental health problems. The UK Government has set out a strategy for mental health care in the 1990s (Department of Health 1990). This strategy is based on the following principles: (1) the need to improve the lives of people with mental health problems; (2) the need to provide a range of services to meet the needs of people with mental health problems; (3) the need to ensure that services are accessible to all people with mental health problems; (4) the need to ensure that services are of high quality; (5) the need to ensure that services are cost-effective.

The UK Government has also set out a strategy for mental health care in the 2000s (Department of Health 2000). This strategy is based on the following principles:

(1) the need to improve the lives of people with mental health problems; (2) the need to provide a range of services to meet the needs of people with mental health problems; (3) the need to ensure that services are accessible to all people with mental health problems; (4) the need to ensure that services are of high quality; (5) the need to ensure that services are cost-effective. The UK Government has also set out a strategy for mental health care in the 2010s (Department of Health 2010). This strategy is based on the following principles:

(1) the need to improve the lives of people with mental health problems; (2) the need to provide a range of services to meet the needs of people with mental health problems; (3) the need to ensure that services are accessible to all people with mental health problems; (4) the need to ensure that services are of high quality; (5) the need to ensure that services are cost-effective. The UK Government has also set out a strategy for mental health care in the 2020s (Department of Health 2020). This strategy is based on the following principles:

(1) the need to improve the lives of people with mental health problems; (2) the need to provide a range of services to meet the needs of people with mental health problems; (3) the need to ensure that services are accessible to all people with mental health problems; (4) the need to ensure that services are of high quality; (5) the need to ensure that services are cost-effective. The UK Government has also set out a strategy for mental health care in the 2030s (Department of Health 2030). This strategy is based on the following principles:

(1) the need to improve the lives of people with mental health problems; (2) the need to provide a range of services to meet the needs of people with mental health problems; (3) the need to ensure that services are accessible to all people with mental health problems; (4) the need to ensure that services are of high quality; (5) the need to ensure that services are cost-effective. The UK Government has also set out a strategy for mental health care in the 2040s (Department of Health 2040). This strategy is based on the following principles:

(1) the need to improve the lives of people with mental health problems; (2) the need to provide a range of services to meet the needs of people with mental health problems; (3) the need to ensure that services are accessible to all people with mental health problems; (4) the need to ensure that services are of high quality; (5) the need to ensure that services are cost-effective. The UK Government has also set out a strategy for mental health care in the 2050s (Department of Health 2050). This strategy is based on the following principles:



EXHIBIT III-1

## LARGE SYSTEM PRICING TRENDS, 1982-1987

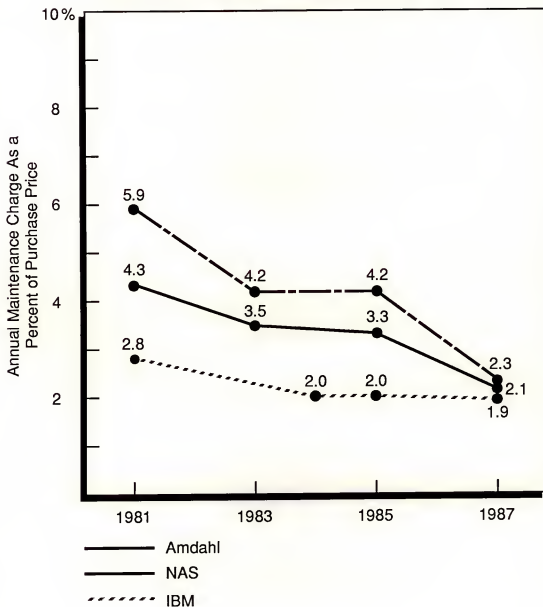
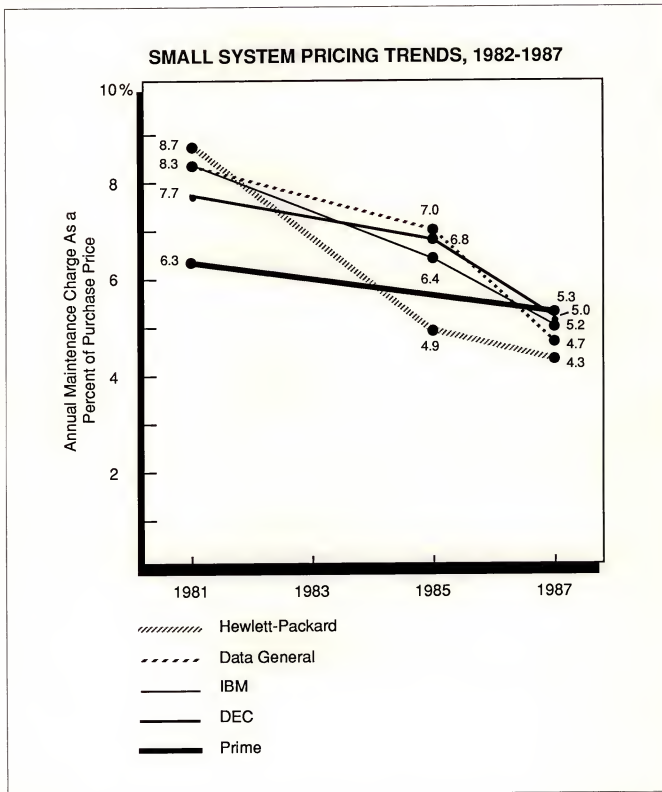




EXHIBIT III-2



the 1990s, the number of people aged 65 and over in the United States is projected to increase from 20 million to 35 million.

As the number of people aged 65 and over increases, the number of people aged 75 and over is also projected to increase. In 1990, there were 10 million people aged 75 and over in the United States. By 2010, the number of people aged 75 and over is projected to increase to 15 million. This increase in the number of people aged 75 and over is expected to be driven by the increase in the number of people aged 65 and over, as well as the increase in life expectancy.

The increase in the number of people aged 75 and over is expected to have a significant impact on the economy. For example, the number of people aged 75 and over is expected to increase from 10 million in 1990 to 15 million in 2010. This increase in the number of people aged 75 and over is expected to lead to an increase in the number of people aged 75 and over who are employed. This increase in the number of people aged 75 and over who are employed is expected to lead to an increase in the number of people aged 75 and over who are contributing to the economy.

The increase in the number of people aged 75 and over is also expected to have a significant impact on the labor market. For example, the number of people aged 75 and over is expected to increase from 10 million in 1990 to 15 million in 2010. This increase in the number of people aged 75 and over is expected to lead to an increase in the number of people aged 75 and over who are employed. This increase in the number of people aged 75 and over who are employed is expected to lead to an increase in the number of people aged 75 and over who are contributing to the economy.

The increase in the number of people aged 75 and over is also expected to have a significant impact on the labor market. For example, the number of people aged 75 and over is expected to increase from 10 million in 1990 to 15 million in 2010. This increase in the number of people aged 75 and over is expected to lead to an increase in the number of people aged 75 and over who are employed. This increase in the number of people aged 75 and over who are employed is expected to lead to an increase in the number of people aged 75 and over who are contributing to the economy.

The increase in the number of people aged 75 and over is also expected to have a significant impact on the labor market. For example, the number of people aged 75 and over is expected to increase from 10 million in 1990 to 15 million in 2010. This increase in the number of people aged 75 and over is expected to lead to an increase in the number of people aged 75 and over who are employed. This increase in the number of people aged 75 and over who are employed is expected to lead to an increase in the number of people aged 75 and over who are contributing to the economy.

The increase in the number of people aged 75 and over is also expected to have a significant impact on the labor market. For example, the number of people aged 75 and over is expected to increase from 10 million in 1990 to 15 million in 2010. This increase in the number of people aged 75 and over is expected to lead to an increase in the number of people aged 75 and over who are employed. This increase in the number of people aged 75 and over who are employed is expected to lead to an increase in the number of people aged 75 and over who are contributing to the economy.

IBM, NAS, and Amdahl further improves product reliability and serviceability. While CSA appears to have captured a lot of attention in the large systems market in 1987, it is difficult to project its effect on future large system service pricing, since large systems users are not overly attracted to "self-maintenance."

Small system pricing should decline at a much greater rate, spurred by increased competition between market leaders IBM and DEC, increased usage of remote support technology, and further growth of the high-end (superminicomputer) market. Furthermore, IBM's Mid-Range System Amendment (the CSA-equivalent for small systems) will have a much greater impact on service pricing in the small systems market since small systems users are typically more price-sensitive and would be more willing to increase their involvement in self-maintenance if they were to receive a discount.

---

## B

### Current Vendor Service Pricing

Exhibit III-3 presents 1987 service pricing on selected large system products. Note that large system service pricing is very competitive, as reflected by the similarity in the service price to purchase price ratios. This competitiveness is especially true at the high end, where IBM, Amdahl, and NAS compete.

IBM's Corporate Service Amendment (CSA) provides a significant cost saving to users. Depending on contract length, users who sign up for the CSA can receive discounts of up to 45% per year. Thus, a 3090 user can expect annual discounts as high as \$64,000. As a result, a 3090 can carry an annual service charge of less than 1% of purchase price per year! Of course, that user is locked into a five-year contract, with increased self-maintenance responsibilities in return for these cost savings.

Small system service pricing is much more disparate, even when products are further classified into subcategories of high- and low-end minicomputers. Exhibit III-4 presents a list of high-end superminicomputers whose service price ranges from 2.6% of purchase price (for Data General's MV/20,000) to 8.3% (for Gould's Concept 32/97).

Highlighting IBM and DEC offerings in the highly competitive networked superminicomputer market (the 9370 and VAX 8XXX product lines respectively), IBM's aggressive price competitiveness is apparent. Since the IBM prices listed do not reflect discounts available under the Mid-Range System Amendment (also with discounts that range from 12-30% per year), it is possible that the gap between IBM and DEC pricing will be even greater for users who take over some of their support responsibility and opt for the Amendment.



EXHIBIT III-3

### SERVICE PRICING ON SELECTED LARGE SYSTEMS

MANUFACTURER	MODEL	PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	AMC/PP (Percent)
Amdahl	5890-600E	\$8,500,000	\$196,200	2.3
CDC	Cyber 990E	2,350,000	108,000	5.5
DEC	VAX 8978	5,240,000	273,372	5.2
Honeywell	DPS 90/91	3,550,000	67,500	1.9
IBM	3090	7,944,000	142,920	1.8
NAS	AS/XL-100	12,690,000	265,680	2.1

At the lower end of the small systems market, there is an even greater dissimilarity in service pricing formulas, as shown in Exhibit III-5. While most vendors charged between 5-8% for annual maintenance, Hewlett-Packard charges 14.7% of purchase price for on-site support of their 3000 Series 37. This is surprising, since HP service pricing on the Series 70 (at 4.3% of purchase price) is at the lower range of small system service pricing.

Exhibit III-6 shows that the workstation product market, exemplified by products by Apollo, DEC, and Sun Microsystems, typically prices service between 12-18% of purchase price. IBM's announcement that they intend to enter that market with their top-of-the-line PS/2 Model 80 dramatically changes workstation service pricing, since IBM charges only 2.8% for on-site service of the Model 80. The Model 80 is priced much more aggressively than even IBM's earlier workstation effort, the PC/RT (6151-020), which carried a purchase price of \$14,945 and an on-site service charge of \$750 per year (5% of purchase price).

the 1990s, the number of people in the UK who are aged 65 and over has increased from 10.5 million to 13.5 million (15.5% of the population).

There is a growing awareness of the need to address the needs of older people, and the Government has set out a strategy for doing so in the White Paper on *Ageing Better: Our Future Together* (Department of Health 2002). This paper sets out the authors' views on the implications of the White Paper for the development of a new generation of research on ageing.

## Background

The White Paper on *Ageing Better: Our Future Together* (Department of Health 2002) sets out a strategy for addressing the needs of older people. It is based on the principle that older people should be able to live well, and that the Government should do all it can to help them do so.

The White Paper sets out a number of key objectives for the Government, including: to improve the health and well-being of older people; to help older people to live independently; to help older people to participate in society; and to help older people to live in their own homes. The White Paper also sets out a number of key actions that the Government will take to achieve these objectives.

The White Paper is a landmark document in the history of ageing policy in the UK. It sets out a clear vision for the future of ageing, and provides a framework for the development of a new generation of research on ageing. The White Paper is a key document for anyone who is interested in the needs of older people, and for anyone who is involved in the development of ageing policy.

## Objectives

The White Paper sets out a number of key objectives for the Government, including: to improve the health and well-being of older people; to help older people to live independently; to help older people to participate in society; and to help older people to live in their own homes. The White Paper also sets out a number of key actions that the Government will take to achieve these objectives.

The White Paper is a landmark document in the history of ageing policy in the UK. It sets out a clear vision for the future of ageing, and provides a framework for the development of a new generation of research on ageing. The White Paper is a key document for anyone who is interested in the needs of older people, and for anyone who is involved in the development of ageing policy.

## Conclusion

The White Paper on *Ageing Better: Our Future Together* (Department of Health 2002) sets out a strategy for addressing the needs of older people. It is based on the principle that older people should be able to live well, and that the Government should do all it can to help them do so. The White Paper sets out a number of key objectives for the Government, including: to improve the health and well-being of older people; to help older people to live independently; to help older people to participate in society; and to help older people to live in their own homes.

The White Paper is a landmark document in the history of ageing policy in the UK. It sets out a clear vision for the future of ageing, and provides a framework for the development of a new generation of research on ageing. The White Paper is a key document for anyone who is interested in the needs of older people, and for anyone who is involved in the development of ageing policy.



## EXHIBIT III-4

**SERVICE PRICING ON SELECTED  
HIGH-END SMALL SYSTEMS**

MANUFACTURER	MODEL	PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	AMC/PP (Percent)
Concurrent	3260 MPS (M37-326)	200,000	14,880	7.4
Data General	MV/20,000	321,000	8,208	2.6
DEC	VAX 8550	466,000	24,132	5.2
Gould	Concept 32/97	244,000	20,340	8.3
HP	3000 Series 70	150,000	6,444	4.3
IBM	9377-090	190,000	6,600	3.5
Prime	9955-II (9555 M2 ESC)	379,900	20,473	5.3
Wang	VS 300	280,000	15,072	5.4



EXHIBIT III-5

**SERVICE PRICING ON SELECTED  
LOW-END SMALL SYSTEMS**

MANUFACTURER	MODEL	PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	AMC/PP (Percent)
Concurrent	3203 (M33-840)	27,500	2,424	8.8
Data General	Eclipse MV/15,000	62,500	2,940	4.7
Gould	Concept 32/27 Model 3428	40,500	3,000	7.4
HP	3000 Series 27	27,950	4,116	14.7
Honeywell	DPS 6/95	80,000	6,200	7.8
Tandem	CLX 620	85,000	4,992	5.9

the 1990s, the number of people in the world who are under 15 years of age is expected to increase from 1.1 billion to 1.5 billion.

As a result of the demographic changes, the number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

The number of children in the world who are under 15 years of age is expected to increase from 1.1 billion in 1990 to 1.5 billion in 2000.

## EXHIBIT III-6

## SERVICE PRICING ON SELECTED WORKSTATIONS

MANUFACTURER	MODEL	PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	AMC/PP (Percent)
Apollo	Domain DN 300	14,900	2,508	16.8
Apollo	Domain DN 560	38,500	3,924	10.0
DEC	MICROVAX II (630QY-A2)	14,800	1,836	12.4
IBM	PS/2 Model 80 (8580-11)	10,985	305	2.8
Sun Microsystems	3/260C	49,900	7,140	14.0

## C

## Effect Of Service Pricing On Cost Of Ownership

While service quality has always been an extremely important factor in the computer purchase decision, users had in the past downplayed the importance of service price in that decision making process. User price sensitivity, particularly with regards to hardware maintenance pricing, has increased significantly as users realize the increased reliability of their systems and recognize the increased number of service alternatives available. Service vendors have contributed to this increased sensitivity with recent discounting efforts.

As a result, users are paying more attention to the effects of service pricing on the total cost of ownership. This increased awareness may revive vendor (and user) interest in long term (longer than one-year) service contracts typified by CSA-like maintenance agreements. In any event, the following exhibits will illustrate the effect of service on the five-year cost of ownership (of course, this analysis does not take into account the effects of taxes, inflation, or residual value measurements).



Exhibit III-7 lists three popular large systems, with their current purchase price, as well as their associated annual maintenance charges. In this highly competitive market, these three competitors (IBM, Amdahl, and NAS) are tightly packed around the 2% per year maintenance charge (all three also offer a one-year warranty). Therefore, it is not surprising that all three cost of ownership slopes (shown graphically in Exhibit III-8) are very similar.

EXHIBIT III-7

### EFFECT OF SERVICE PRICE ON LARGE SYSTEM COST OF OWNERSHIP

MANUFACTURER/ MODEL	PURCHASE PRICE (\$)	ANNUAL MAINTENANCE CHARGE AS A PERCENT OF PURCHASE	MAINTENANCE COST OVER 5-YEAR LIFE* OF MACHINE	TOTAL COST** (\$)
IBM 3090 Model 400	7,944,000	1.9	571,680	8,515,680
Amdahl 5890-600E	8,500,000	2.3	782,000	9,282,000
NAS AS/XL-90	9,916,410	2.0	781,728	10,698,138

\*One-year warranty.

\*\*Purchase price plus four years of annual maintenance charge.

the 1990s, the number of people with a mental health problem has increased in the UK, and the number of people with a mental health problem who are in contact with mental health services has also increased (Mental Health Act 1983, 1990, 1994).

There is a growing awareness of the need to improve the lives of people with a mental health problem, and to reduce the stigma and discrimination that they experience. This has led to a number of initiatives, including the development of mental health services that are more user-centred and that are more integrated with other services (Mental Health Act 1983, 1990, 1994).

One of the key initiatives in this area is the development of self-help materials for people with a mental health problem. These materials are designed to help people to understand their condition, to manage their symptoms, and to seek help when they need it. They are also designed to help people to reduce the stigma and discrimination that they experience.

There are a number of reasons why self-help materials are important for people with a mental health problem. First, they can help people to understand their condition and to manage their symptoms. Second, they can help people to seek help when they need it. Third, they can help people to reduce the stigma and discrimination that they experience.

There are a number of different types of self-help materials, including books, leaflets, and audio and video materials. Each type of material has its own strengths and weaknesses, and it is important to choose the type of material that is most appropriate for the individual user.

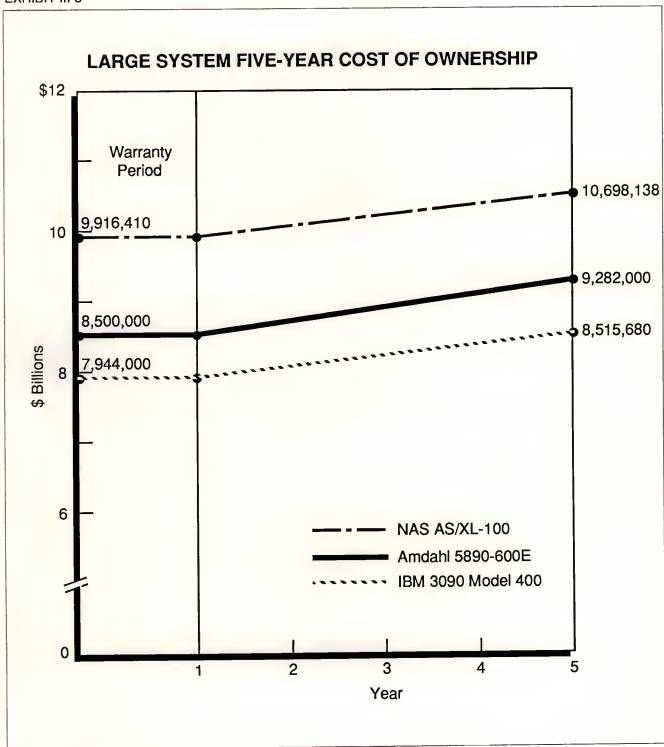
Books are a good choice for people who are able to read and who are interested in learning more about their condition. Leaflets are a good choice for people who are unable to read or who are unable to read well. Audio and video materials are a good choice for people who are unable to read or who are unable to read well.

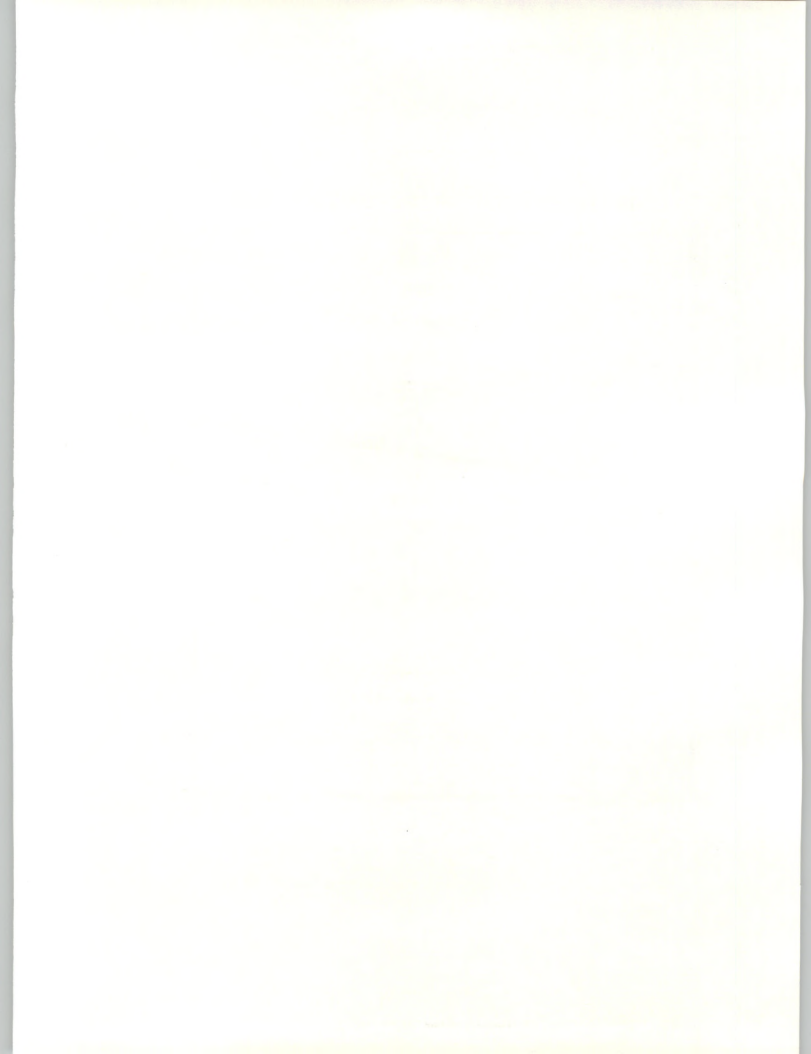
There are a number of factors that should be considered when choosing self-help materials. These factors include the user's literacy skills, the user's learning style, and the user's needs. It is important to choose materials that are appropriate for the individual user.

There are a number of different types of self-help materials, including books, leaflets, and audio and video materials. Each type of material has its own strengths and weaknesses, and it is important to choose the type of material that is most appropriate for the individual user.



EXHIBIT III-8





IBM's cost of ownership will be significantly lower for those users who sign up for Corporate Service Amendment, since the CSA offers discounts ranging from 4-45% depending on the number of years contracted for.

An interesting development in the large system marketplace has been the re-entrance of DEC in the high-end market with their "clustered" VAX 8978 system. Exhibit III-9 compares the five-year cost of ownership of IBM's mid-size 3090 mainframe, the Model 200 to DEC's clustered system. The DEC system initially carries a higher purchase price (\$5.2 million versus \$4.1 million for the Model 200), and the difference in annual maintenance charges rapidly expands the disparity in the five-year cost of ownership between the two systems.

Exhibit III-10 lists three popular small system products from IBM, DEC, and HP, along with their purchase prices and annual maintenance charges. When plotted in Exhibit III-11, the effects of both higher annual maintenance charges, as well as shorter warranty length, become clear, particularly when comparing HP and DEC.

The DEC VAX 8350/2 carries a lower purchase price (\$145 thousand versus \$150 thousand for the HP 3000 Series 70), and, with its one-year warranty, costs less in the short term. By year three, the higher annual maintenance charge pushes the cost of ownership above that of the HP system. By the fifth year, the DEC system costs (in terms of purchase price and subsequent maintenance charges) almost \$15 thousand more than the HP system.

The change in warranty lengths also benefits end users, typically saving users three-fourths of one-year's maintenance costs. This change significantly impacts service vendor revenues, since vendor costs from supporting products between day 91 through the end of the first year were minimal.

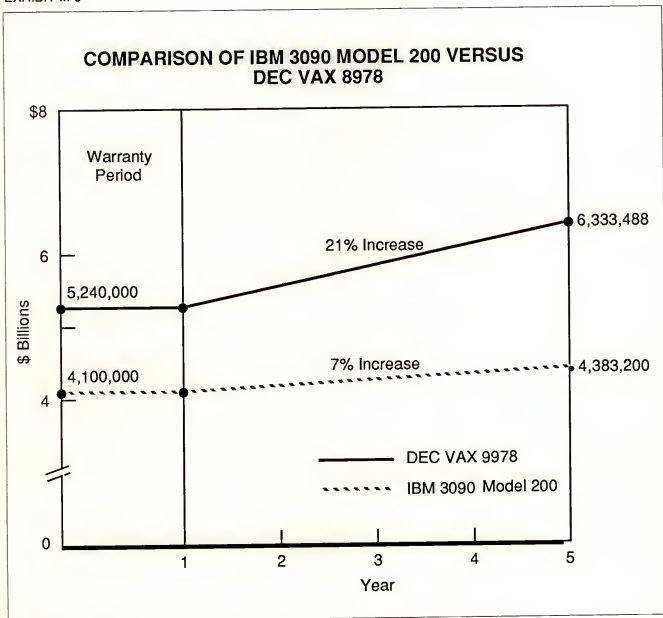
## D

### Impact Of CSA On Vendor Service Pricing

On October 7, 1987, IBM announced a new service policy to take effect on January 1, 1987, that would demonstrate how truly competitive hardware maintenance pricing had become. Offering discounts that ranged from 4-45%, (depending on the machine type and the years contracted for), this new support policy, called the Corporate Service Amendment (CSA) was announced as a reward for users who could "... demonstrate effective systems management procedures as defined by IBM..." While this was true, it also demonstrated an aggressive new pricing strategy that would provide price-sensitive customers a significant discount that exceeded many third-party alternatives.



EXHIBIT III-9



Faint, illegible text, possibly bleed-through from the reverse side of the page.

## EXHIBIT III-10

**EFFECT OF SERVICE PRICE ON  
SMALL SYSTEM COST OF OWNERSHIP**

MANUFACTURER/ MODEL	PURCHASE PRICE (\$)	ANNUAL MAINTENANCE CHARGE AS A PERCENT OF PURCHASE	MAINTENANCE COST OVER 5-YEAR LIFE OF MACHINE	TOTAL COST (\$)
IBM 9377-090	190,000	3.5	26,400**	216,400
DEC VAX 8350/2	145,000	8.5	49,584**	194,584
HP 3000/Series 70	150,000	4.3	30,094*	180,094

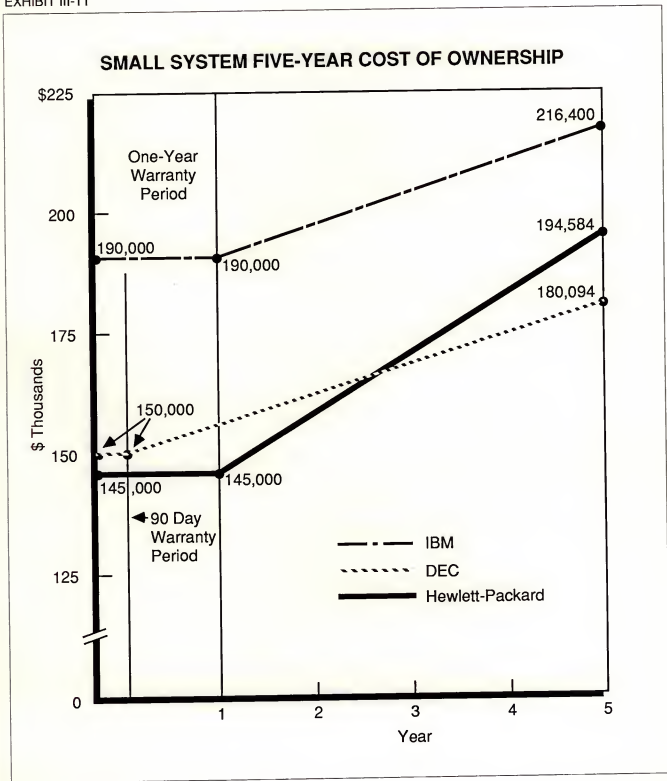
\*Warranty length = 90days.

\*\*Warranty length = one year.





EXHIBIT III-11





The CSA policy actually replaced an earlier "test program" of IBM's called the Enterprise Maintenance Agreement (EMA) that allowed some large corporate users significant discounts for bringing a specified percent of their entire data processing installation under a single contract. The CSA provides a more detailed list of discounts to large system users who qualify and agree to certain requirements.

To qualify, users must take a 377-question certification review, and pay certification fees of \$3500 for the systems option and \$8600 for the network option. In addition, the user must agree to set up a "help desk" staffed by someone who is specially trained by IBM to perform routine diagnostics and maintenance activities. The customer receives 24-hour by seven-day coverage (now standard for all contract customers), but agrees to pay an early termination fee of one month's service charge unless the user gives sufficient notice (one month notice for a one-year contract, three months for a three-year contract, and six months for a five-year contract). Furthermore, IBM reserved the right to raise CSA covered service prices by 3.5% per year without penalty to IBM.

IBM's CSA spawned a slew of competitive programs from third-party maintenance organizations that compete directly with IBM for IBM large and small systems service (covered under the later Mid-Range Systems Amendment, which offered similar benefits with similar requirements). Exhibit III-12 summarizes the differences (and similarities) between IBM's offerings and those of TRW, CDC, Intelogic Trace, and Sorbus. In short, TPMs had to react with equal, if not greater discounts, and, at the same time, improved conditions and safeguards.

Opponents of CSA-like agreements argue that users stand to lose, since these agreements call for long-term contracts that "lock" users in for up to five years without complete protection from price increases (in the case of CSA). In addition, these opponents would prefer to provide "full service" levels that do not require customer involvement.

On the other hand, users do stand to save a lot of money (up to 45% for a five-year contract) for agreeing to increase their involvement in the service process. It is important to note that the TPM companies removed this requirement from their offerings (with the exception of CDC).

The CSA-like agreements offer benefits to service vendors. Foremost, these long-term contracts provide a certain degree of account control, particularly in those contracts that are three and five years in length. While users are provided some level of escape, these contracts do provide service vendors a certain degree of security with their user base. Some have suggested that IBM's primary reason for introducing CSA was to win back and protect its user base from TPM encroachment.

the 1990s, the number of people who have been employed in the public sector has increased in all countries. The increase has been particularly large in the United States, where the public sector has grown from 15.5% of the total workforce in 1970 to 22.5% in 1995 (see Figure 1).

There are a number of reasons for the increase in public sector employment. One reason is that the public sector has become a more attractive place to work. This is due to a number of factors, including the fact that public sector jobs are often more secure than private sector jobs, and that public sector workers often receive better benefits than private sector workers. Another reason for the increase in public sector employment is that the public sector has become a more important part of the economy. This is due to the fact that the public sector has become a major provider of social services, such as education, health care, and social security.

The increase in public sector employment has had a number of effects on the economy. One effect is that it has helped to reduce unemployment. This is because public sector jobs are often more secure than private sector jobs, and therefore people are more likely to accept public sector jobs when they are available. Another effect is that it has helped to increase government revenue. This is because public sector workers pay taxes, and the government can use this revenue to fund other public services.

There are a number of challenges facing the public sector in the future. One challenge is that the public sector is often criticized for being inefficient and wasteful. This is due to the fact that public sector workers often receive higher wages than private sector workers, and that public sector jobs are often more secure than private sector jobs. Another challenge is that the public sector is often faced with increasing demand for services. This is due to the fact that the population is aging, and therefore there is a need for more social services, such as health care and social security.

There are a number of ways in which the public sector can be made more efficient and effective. One way is to reduce the number of public sector workers. This can be done by eliminating unnecessary jobs, and by hiring fewer people in the future. Another way is to improve the quality of public sector services. This can be done by investing in training and development, and by improving the way in which public services are delivered.

The public sector is an important part of the economy, and it is important to ensure that it is efficient and effective. There are a number of challenges facing the public sector in the future, but there are also a number of ways in which it can be improved. By addressing these challenges, the public sector can continue to provide the services that are needed by the population.

The public sector is also an important part of the social contract. The social contract is the agreement between citizens and the government that the government will provide certain services in exchange for taxes. The public sector is the part of the government that provides these services, and therefore it is important to ensure that it is efficient and effective. This is because if the public sector is not efficient and effective, then the social contract is broken, and citizens will no longer be willing to pay taxes.

The public sector is also an important part of the economy. The public sector provides a number of services that are essential for the economy, such as education, health care, and social security. Without these services, the economy would not be able to function properly. Therefore, it is important to ensure that the public sector is efficient and effective, so that it can continue to provide these services to the population.

EXHIBIT III-12

## CSA COMPETITIVE ANALYSIS

	IBM	TRW	SORBUS	CDC	IT
Product Coverage	Full	Full	Full*	80%	Limited
Initialization	3,500	No	No	No	No
24 Hr./7 Day	No Cost	Charge	Charge	Charge	Charge
Termination Penalty	Yes	No	No	Yes	Yes
Discount Percent Off IBM List	4-45	Up to 45	Unclear	10	20-50

\*Some restrictions.

On the other hand, CSA-like agreements may hurt service vendors in the long run. First, service vendors stand to lose significant service revenues if a large number of users opt for such contracts. This will particularly hurt TPMs who do not have other service areas from which to recover lost revenue. In matching (and exceeding) IBM's discount policy, TPMs may be pricing themselves in a corner.

Secondly, and perhaps more significantly, service vendors are in danger of losing control over the quality of service provided by these programs, particularly those that require increased user involvement in support activities. While users are increasingly concerned with service costs, system availability and quality of service are still their highest priorities.





## Users as a Force in Service Pricing



*[The page contains extremely faint, illegible text, likely bleed-through from the reverse side of the document. The text is too light to transcribe accurately.]*



## IV

## Users as a Force in Service Pricing

## A

### User Attitudes Toward Extended Coverages

Given the recent announcement by IBM that effectively expands all service contract coverage from five-day/ eleven-hour (prime shift) to seven-day, 24-hour coverage on all large and small systems, it will become increasingly important to measure user attitudes toward these expanded service coverages, as well as "reduced" levels (if users will negotiate for single shift coverage for a discount).

Large system users have greater experience with round-the-clock coverage, since Amdahl only offers seven-by-twenty-four coverage on their systems, and NAS offers seven-by-twenty four coverage as standard, but offers five-by-eleven for a 28% discount. Exhibit IV-1 shows that 55% of all large system users surveyed earlier this year contract for five-day coverage. With IBM's recent announcement, that percentage should grow to at least 70%, given IBM's, NAS's, and Amdahl's share of the large system market. So far, no other manufacturer has announced plans to follow IBM's lead and also extend their service coverage, yet it is reasonable to expect that other large system manufacturers will follow suit.

Likewise, it is expected that the percentage of users who receive multi-shift coverage will also increase accordingly.

Exhibit IV-2 demonstrates that a far greater percentage of small system users receive five-day coverage, yet IBM's announced policy extending all systems users to seven-by-twenty four coverage will boost the percentage of users who receive around-the-clock coverage (however, not to the extent as in the large system market, where IBM has a much larger share of the market). As of yet, no other small system vendor has indicated that they will follow suit, and it is less likely that many small system vendors will follow than in the large systems market.



EXHIBIT IV-1

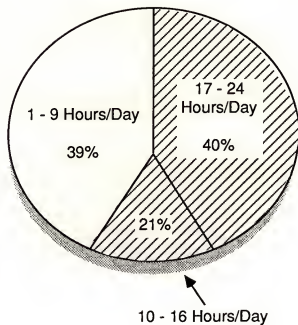
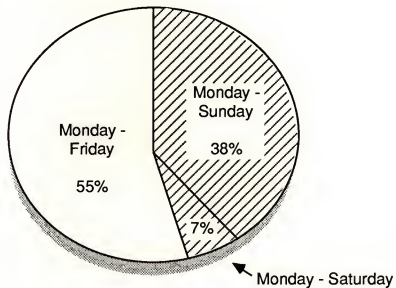
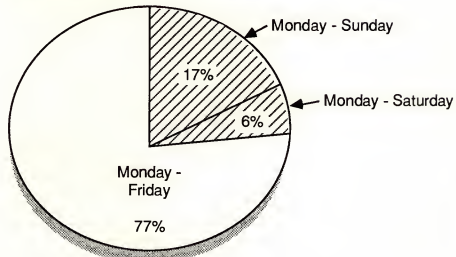
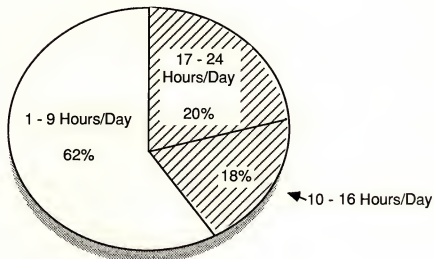
**LARGE SYSTEM USER EXPERIENCE  
WITH EXTENDED COVERAGES**



EXHIBIT IV-2

**SMALL SYSTEM USER EXPERIENCE  
WITH EXTENDED COVERAGES**

Days Covered



Hours Covered



**B****User Attitudes  
Toward Increased  
Self-Maintenance**

In 1987, IBM announced a new service option for users of large systems that offered significant discounts for users who qualified by passing a lengthy certification examination, set up a user "help desk" that would take over preliminary diagnosis procedures prior to calling IBM, and agreed to long-term contracts ranging in length from one to five years. This new option, called the Corporate Service Amendment, replaced a "test program" called the Enterprise Maintenance Agreement (EMA) that IBM offered to select user locations in 1986.

Soon, third-party maintenance (TPM) organizations that compete directly with IBM began offering similar and more attractive versions of the CSA. Market leaders TRW, Sorbus, Intelogic Trace, and Control Data Corporation offered equivalent or greater discounts, usually with reduced qualification requirements.

Later in the year, IBM offered a companion discount option, the Mid-Range System Amendment for users of small systems, offering a similar range of discounts and qualification requirements. Most TPMs had already included such small systems in their discount plans, but the new policy still improved IBM's price competitiveness against other manufacturers in the small system market.

IBM's Corporate Service Amendment (CSA), Mid-Range System Amendment and the competitive TPM offerings all reintroduced the concept of longer-than-one-year service contracts, with discounts ranging from 4-45% for users who agree to assume increased responsibility for diagnosis and support and sign up for contracts of one, three, or five years in length. These long-term contracts appear, at face value, to be a good deal for both users and vendors: users receive significant discounts while vendors gain account control and reduce sales renewal costs. In addition, the vendors benefit from lower support costs as the users assume a certain degree of responsibility for diagnosis and support.

Opponents of CSA-like agreements (a number of which were competitors who at least initially refused to offer similar programs) criticized these agreements, pointing out that users are "locked" into long-term agreements without reasonable "escape" clauses or provisions that adequately protect the user against future price increases (the IBM programs charge penalties for early termination and allow IBM a 3.5% annual increase; most of the other policies do not have termination penalties and some allow similar price increases).

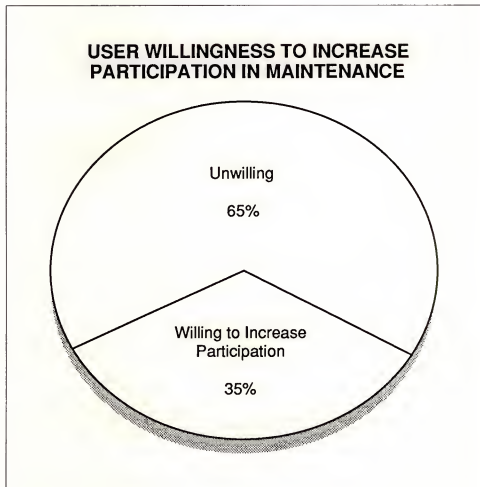
While it is still early to accurately gauge user reaction to contract length aspects of these new service policies, early responses indicate that users are attracted to discounts for service as long as service quality and system availability are not impacted. Both large and small system users as a





group seemed to show some interest in increased involvement in self-maintenance in return for reasonable service price discounts (as shown in Exhibit IV-3), usually for discounts ranging from 20-25%.

EXHIBIT IV-3



Ironically, IBM large system users actually showed less willingness to increase their involvement in self-maintenance, as only 28% of the 309X and 16% of the 308X users surveyed earlier this year (detailed in INPUT's Analysis of Large System Service) indicated any willingness to increase their participation in the service process.

IBM small system users showed even less willingness to increase their participation, as indicated in INPUT's Analysis of Small System Service. Only 12% of the sample of IBM System/38 users surveyed expressed a willingness, even with appropriate discounts involved. IBM users historically have been attracted to IBM because of the completeness of IBM's support, and it is apparent that most IBM large and small system users would prefer to continue to receive full support levels from IBM.



Still, the discount levels offered by these CSA-like arrangements, ranging from 4-45% in most cases, were set high enough to overcome user resistance to the "self-maintenance" aspects of these contracts. In research performed just prior to the announcement of these options, large and small system users projected discount levels much lower than those actually offered. Exhibit IV-4 indicates that large system users expect discounts in excess of 25% of their basic monthly maintenance charge, with little variance for type or degree of involvement (participation in diagnosis versus actual involvement in component and board exchanges).

In the small systems market, users indicated slightly less price sensitivity towards this involvement. Exhibit IV-5 shows that small system users are much more willing to participate in diagnostics at lower discount levels (20-25%) than their large systems counterparts.

---

## C

### User Experience With Longer Billing Cycles

Long-term contracts (contracts longer than one year), such as those integral to CSA-like agreements, not only increase a service vendor's account control, but also benefit the service vendor by reducing contract renewal effort and costs. Another way service organizations have attempted to reduce service costs relating to contract administration is to increase the billing cycle to lower invoicing costs.

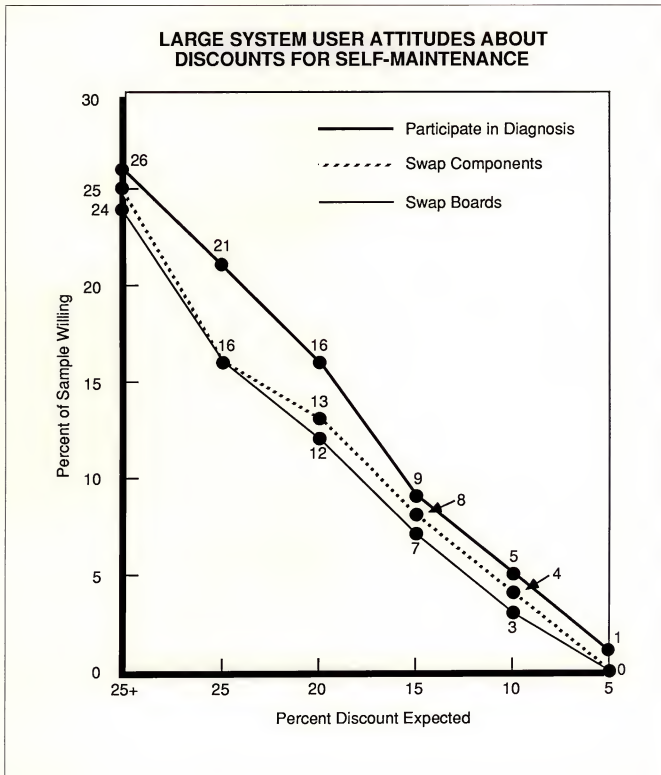
Users are often opposed to annual billing cycles due to the severe cash flow strain that annual billing would cause. Service vendors have attempted to overcome this opposition by offering prepayment discounts to users who sign up for quarterly or annual billing.

Currently, 83% of large system users are billed monthly, as shown in Exhibit IV-6, with only 11% reporting that they were billed on an annual basis and 6% on a quarterly basis. This is not surprising, given the large maintenance costs involved.

Small systems users have had greater experience with quarterly (10% of the sample) and yearly (17%) billing cycles. This greater experience may reflect the smaller maintenance costs involved with small systems, and also the greater price sensitivity of small system users who would be attracted to discounts.



EXHIBIT IV-4



the 1990s, the number of people in the UK who are aged 65 and over has increased from 10.5 million to 13.5 million, and the number of people aged 75 and over has increased from 4.5 million to 6.5 million (Office for National Statistics 2000).

There is a growing awareness of the need to address the needs of older people, and the need to ensure that the health care system is able to meet the needs of older people. The Department of Health (2000) has published a strategy for older people, which sets out the government's commitment to improve the health and well-being of older people, and to ensure that the health care system is able to meet the needs of older people.

The strategy for older people is based on three main principles: (1) to improve the health and well-being of older people; (2) to ensure that the health care system is able to meet the needs of older people; and (3) to ensure that older people are able to live independently and actively in their communities. The strategy sets out a range of measures to be taken to achieve these objectives, including: (1) to improve the health and well-being of older people; (2) to ensure that the health care system is able to meet the needs of older people; and (3) to ensure that older people are able to live independently and actively in their communities.

The strategy for older people is a key document for the health care system, and it sets out the government's commitment to improve the health and well-being of older people, and to ensure that the health care system is able to meet the needs of older people. The strategy sets out a range of measures to be taken to achieve these objectives, including: (1) to improve the health and well-being of older people; (2) to ensure that the health care system is able to meet the needs of older people; and (3) to ensure that older people are able to live independently and actively in their communities.

The strategy for older people is a key document for the health care system, and it sets out the government's commitment to improve the health and well-being of older people, and to ensure that the health care system is able to meet the needs of older people. The strategy sets out a range of measures to be taken to achieve these objectives, including: (1) to improve the health and well-being of older people; (2) to ensure that the health care system is able to meet the needs of older people; and (3) to ensure that older people are able to live independently and actively in their communities.

The strategy for older people is a key document for the health care system, and it sets out the government's commitment to improve the health and well-being of older people, and to ensure that the health care system is able to meet the needs of older people. The strategy sets out a range of measures to be taken to achieve these objectives, including: (1) to improve the health and well-being of older people; (2) to ensure that the health care system is able to meet the needs of older people; and (3) to ensure that older people are able to live independently and actively in their communities.

The strategy for older people is a key document for the health care system, and it sets out the government's commitment to improve the health and well-being of older people, and to ensure that the health care system is able to meet the needs of older people. The strategy sets out a range of measures to be taken to achieve these objectives, including: (1) to improve the health and well-being of older people; (2) to ensure that the health care system is able to meet the needs of older people; and (3) to ensure that older people are able to live independently and actively in their communities.

The strategy for older people is a key document for the health care system, and it sets out the government's commitment to improve the health and well-being of older people, and to ensure that the health care system is able to meet the needs of older people. The strategy sets out a range of measures to be taken to achieve these objectives, including: (1) to improve the health and well-being of older people; (2) to ensure that the health care system is able to meet the needs of older people; and (3) to ensure that older people are able to live independently and actively in their communities.

The strategy for older people is a key document for the health care system, and it sets out the government's commitment to improve the health and well-being of older people, and to ensure that the health care system is able to meet the needs of older people. The strategy sets out a range of measures to be taken to achieve these objectives, including: (1) to improve the health and well-being of older people; (2) to ensure that the health care system is able to meet the needs of older people; and (3) to ensure that older people are able to live independently and actively in their communities.

EXHIBIT IV-5

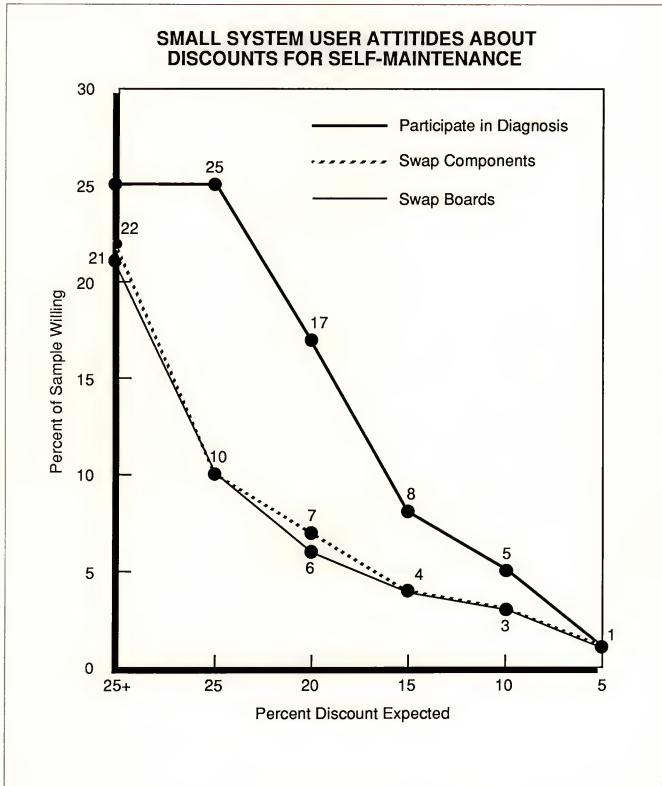
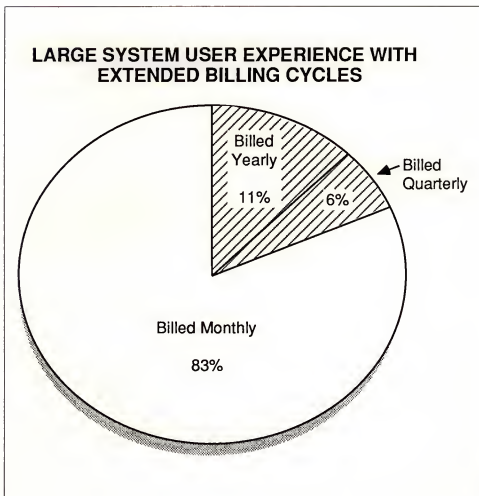






EXHIBIT IV-6



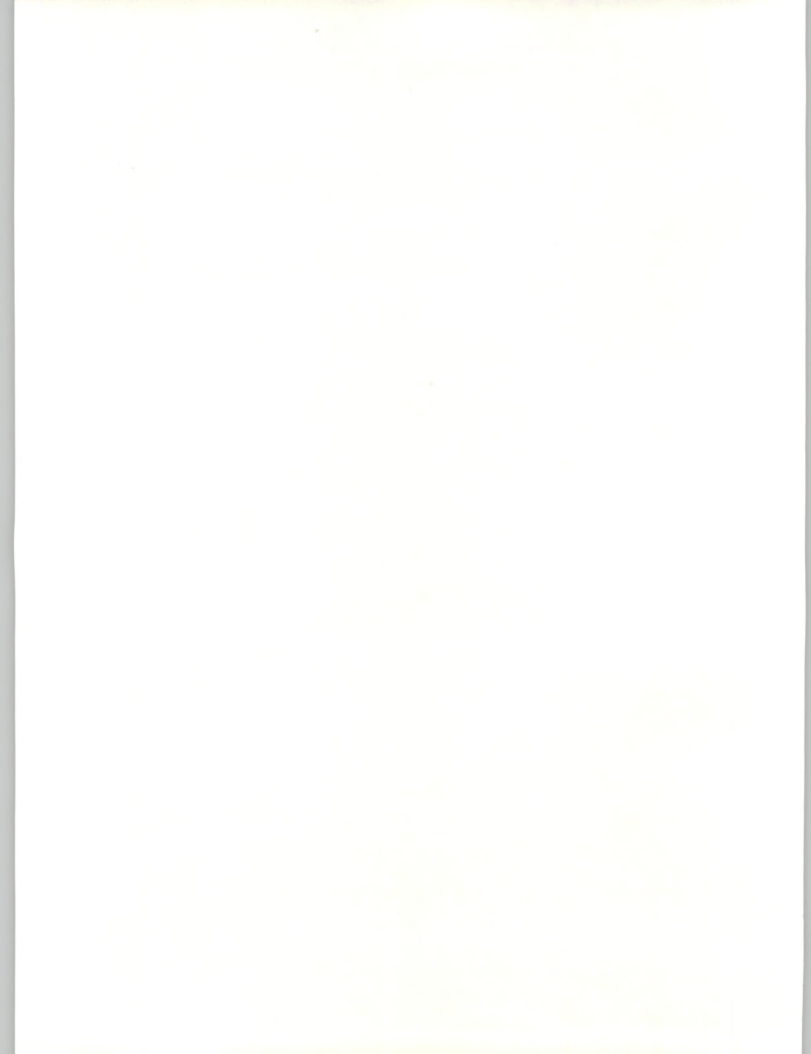
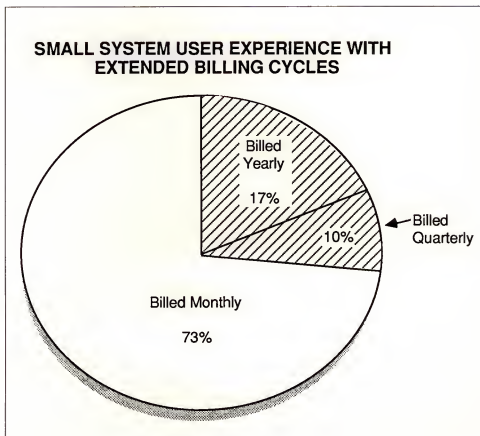


EXHIBIT IV-7







## Evolution of the Service Pricing Model



The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial data. This includes not only sales and purchases but also expenses and income. The document further explains that regular reconciliation of accounts is essential to identify any discrepancies early on and prevent them from escalating into larger issues.

In addition, the document highlights the need for transparency and accountability in financial reporting. It suggests that clear communication and documentation are key to building trust with stakeholders. By providing detailed reports and explanations for any variances, management can demonstrate a commitment to sound financial practices and responsible stewardship of resources.

Finally, the document concludes by reinforcing the message that financial discipline is a cornerstone of long-term success. It encourages the organization to continue to refine its financial processes and adopt best practices to optimize performance and ensure sustainable growth.



## Evolution of the Service Pricing Model

### A

#### Transition From Cost-Center To Profit-Center

In the past, service was most often not charged for separately, but rather “bundled” into the product’s purchase price. Service, or more precisely the need for service, was often downplayed for fear of hurting sales (by implying the fallibility of the product). The fact that products did fail on occasion illuminated the importance of service, and, the ability of the service organization to minimize the impact of product failure soon became a marketable factor. In addition, certain service organizations were not only able to minimize downtime, but were also efficient in their performance as to be profitable.

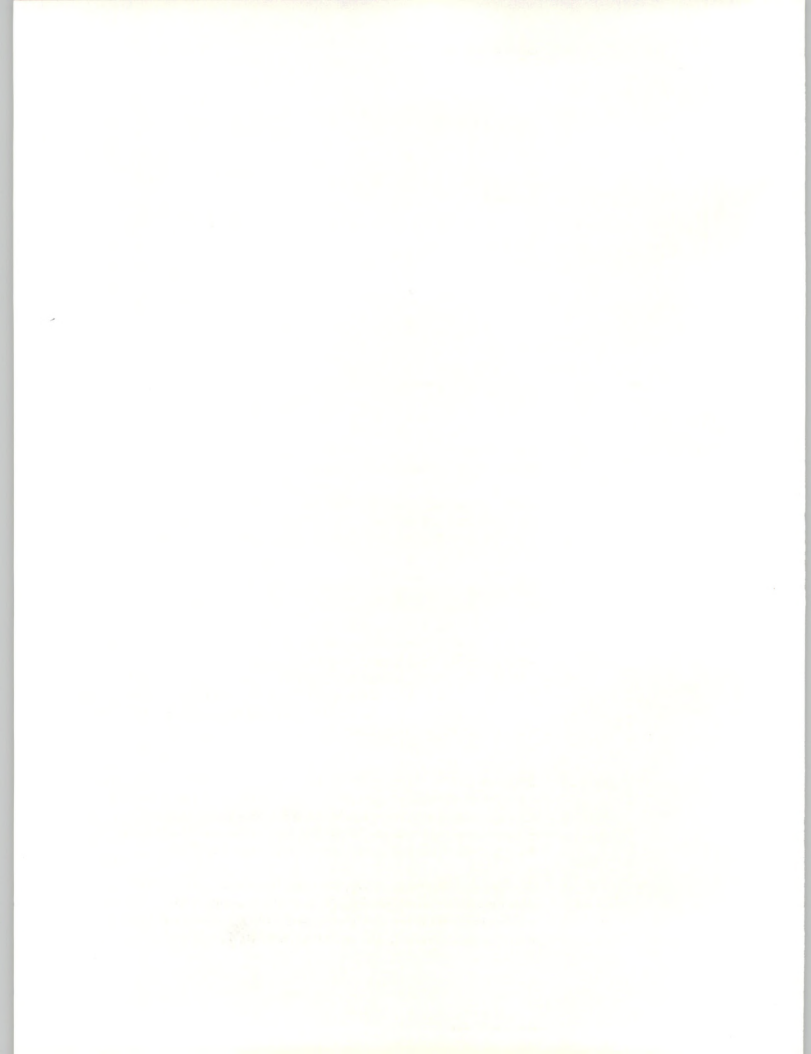
This transformation encouraged the development of the service organization as a separate and independent entity (first as a department under sales/marketing, later as a separate division). While service was a part of sales/marketing, concerns over products, sales often overly-affected service pricing levels (some may argue that this is still true to some extent). Most often, service pricing was set at levels that would, hopefully, cover costs. Still, service efficiency and marketability introduced service profitability, and, as a result, service organizations moved from cost-centers to profit-centers.

### B

#### Traditional Pricing Strategies

With this historical background, service organizations have used various methods of establishing service pricing. While each varies to some degree in actual implementation, most fall into three main categories: those that emphasize costs, those that emphasize competition, and those that combine these and a number of market factors.

Of those that emphasize costs, the most basic strategy used for setting prices is cost recovery pricing. This strategy attempts to make service self-financing by determining expected costs through some level of return-on-investment (ROI) analysis. Most ROI analyses attempt to





measure total investment over the ROI time period by factoring product life-cycles, product (total, component, and part) failure expectations, material costs, and labor costs, with some adjustment for economic factors (eg., inflation, residual values).

As service became more competitive, it became natural for service organizations to allow competitive factors to establish and adjust service pricing. Most often, competitive pricing strategies are reactive and lead to "price wars" that reduce service margins and increase user price sensitivity. As a result, service organizations are often "priced into a corner" without room to maneuver as users expectations become set, which particularly hurts smaller companies who do not have the size or product selection to spread out or recover lost revenue. Most importantly, while price is certainly an important factor in the selection of a service vendor, users place greater importance on service quality factors.

In the earliest days, service prices were often set as a straight percentage of the products purchase price. This method, known as sales-value pricing, aided in the product sales process by simply identifying the price of service as percentage of purchase price ("service is ten percent more") and allowing the salesperson to relate the price of service to the cost of replacing the product. This manner of establishing prices was also useful when entering a new market, since it did not require detailed ROI, competitive, or other market analyses. Of course, sales-value pricing was also a gamble, since the percentage used could be too low to cover service costs or too high to attract customers. In addition, fluctuations in product prices would cause fluctuations in service pricing. Lastly, any discounting in product pricing would impact service revenues.

Of course, service pricing could be established by using a combination of any or all of these methods, and often was. Cost-based pricing could be modified both by competitive factors and by previously established profit objectives (cost-plus pricing). Sales-value pricing could be adjusted later when actual costs or competitive pricing could be determined. Even competition-based pricing can be adjusted after an analysis of costs is made.

The most effective method of establishing service pricing is one that encompasses elements of all of these strategies, plus more innovative techniques that will encourage users to increase their use and need for service. One such strategy is called differential pricing, which attempts to "guide" customers into choosing the most profitable (to the service vendor) service product from a list (or "menu") of possible offerings by careful manipulation of all possible selections. In this fashion, the service vendor sets up a scale of pricing based not on the actual costs of providing each service but on the customer's perceived value of each individual (or combined) service. Highly valued service would then carry premium charges.



A square box with a textured, grey background containing the Roman numeral 'II' in a white, serif font. The box is positioned in the upper left quadrant of the page.

## II

# Executive Overview

---

of the study. The first author (MSM) was the principal investigator and was responsible for the design, data collection, analysis and interpretation of the study. The second author (MAM) was responsible for the design, data collection, analysis and interpretation of the study. The third author (MAM) was responsible for the design, data collection, analysis and interpretation of the study. The fourth author (MAM) was responsible for the design, data collection, analysis and interpretation of the study. The fifth author (MAM) was responsible for the design, data collection, analysis and interpretation of the study. The sixth author (MAM) was responsible for the design, data collection, analysis and interpretation of the study. The seventh author (MAM) was responsible for the design, data collection, analysis and interpretation of the study. The eighth author (MAM) was responsible for the design, data collection, analysis and interpretation of the study. The ninth author (MAM) was responsible for the design, data collection, analysis and interpretation of the study. The tenth author (MAM) was responsible for the design, data collection, analysis and interpretation of the study.

The study was approved by the ethics committee of the University of [Country]. All participants gave their informed consent before participating in the study. The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration]. The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration]. The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration]. The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration].

The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration]. The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration]. The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration]. The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration]. The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration].

The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration]. The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration]. The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration]. The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration]. The study was conducted in a laboratory setting. The participants were recruited from [Location]. The study was conducted over a period of [Duration].

A pricing strategy more commonly associated with retail product pricing is known as "loss-leader" pricing. Vendors attempt to attract customers with a very competitively priced product or service (known as the "price" or "loss" leader) with hopes of immediately or even eventually selling the customer a higher price offering.

## C

### Creation Of A New Pricing Model

In the early stages of service development (1960s-1970s), service organizations were operated as cost-centers and service was priced using cost-based pricing methodology. Most service was performed on-site, with the field engineer performing system level maintenance at the user's site with minimal support. With most emphasis on hardware maintenance activities, service pricing reflected this emphasis. As a result, most non-hardware maintenance service activities (software support, consulting, and training) were usually performed for free, or at least "bundled" into the hardware maintenance to give the appearance of being free.

By the early 1980s, the profit potential of service was recognized and beginning to be exploited. Soon virtually all service organizations were operated as profit centers, as service efficiency was improved by automating certain activities (such as dispatching, parts tracking, remote diagnosis, and some level of software support). Service became not only a product sales feature, but also a standalone product that could be sold and marketed.

Furthermore, service organizations found that they could successfully sell service options (including non-hardware maintenance activities) separately and in packages. As services became separated ("unbundled") and sold as standalone products, users' perception of the value of each individual service activity increased and certain companies (most notably DEC and HP) became successful at selling "menus" of service offerings.

Hardware reliability became greatly improved, as a result of improved design (making products more serviceable) and manufacturing techniques. Furthermore, service costs were reduced by improved service tools, including increased use of remote support technology. Users became aware of this, and began to put increased pressure on service organizations to reduce maintenance costs.

This pressure, when combined by increased competition from third-party maintenance organizations, along with other economic pressures placed on computer companies on the whole, caused service organizations to lower service prices.

At the same time, user demand for increased system availability highlighted the need for increased and improved performance in non-hardware maintenance areas, most notably software support. As users began

*[The page contains extremely faint, illegible text, likely bleed-through from the reverse side of the document. The text is too light to transcribe accurately.]*

to recognize the value of these services, user price-sensitivity lessened for these services. User price-sensitivity for software support appears to be particularly low, as users seem willing to pay more for software support as long as users perceive an improvement in support quality is perceived.

Since price-sensitivity for hardware maintenance was increasing while user demand for other services was also increasing, it became clear to many vendors that non-hardware maintenance service activities were the revenue and profit-growth areas. The result of this recognition is a further evolution of the service pricing model.

In the new pricing model, hardware maintenance will be the "given" that users will come to expect. As such, vendors will price hardware maintenance services low enough to attract users, without as much emphasis on whether those price levels will recover costs, let alone provide margin. Instead, service organizations will rely on other service areas to provide profits. By doing so, service organizations will be moving away from high competition, high material cost, high price-sensitivity service areas and towards service areas with revenue growth potential and, more importantly, margin growth potential.

This is not to imply that service organizations will "abandon" hardware maintenance activities. On the contrary, hardware maintenance will continue to provide the majority of service revenues. However, service organizations will use hardware maintenance as the "price-leader", and use non-hardware maintenance activities such as software support, network planning and implementation services, education and training, and spare parts sales as the "premium" services that will act as the "sales feature." These services will also help transform the emphasis of service from "remedial maintenance" to "performance support."

Third-party maintenance (TPM) organizations will be placed at a severe disadvantage, since few TPMs have developed significant involvement in these areas (although this is quickly changing). TPMs will find it increasingly difficult to compete "price-wise" in hardware maintenance with manufacturers who will be able to recover lost revenue in other, more profitable service areas.

## D

### Recommendations And Conclusions

Customer service pricing continues to drop as a result of a number of factors, including increased product reliability, improved service tools and techniques, increased user pressure, and increased competition, both from other manufacturers and from third-parties. Service organizations, faced with the prospects of declining maintenance revenues, are confronted with the challenge of continuing revenue and profit growth while remaining competitive and responsive to their users at the same time.





To meet this challenge, vendors have turned to large scale discounting programs (such as the Corporate Service Amendment and the competitive reaction) that succeed in reducing service prices and to some degree reduce service costs to the vendor (through the formation of "help desks"), yet carry the side effects of increased price-sensitivity and reduced vendor control over service quality. At best, these "wholesale" discounting schemes will force service vendor to further cut service prices, while reducing the level of "perceived" service that the end-user receives.

Instead, service vendors will need to rethink their preconceived notions of user attitudes towards service by placing the emphasis away from price-sensitive services that are "reactively" remedial in nature and instead further develop their service strategy to encompass and emphasize "proactive" performance support services. By doing so, service vendors will better be able to communicate their value to users, by not only minimizing system downtime but by improving the quality of system performance.

the 1990s, the number of people with a diagnosis of schizophrenia has increased in many countries (1).

There is a growing awareness of the need to improve the quality of life of people with schizophrenia, and to reduce the stigma associated with the illness (2). This has led to a focus on the development of community-based services (3).

One of the key components of community-based services is the provision of supported housing (4). This involves providing people with a safe and secure place to live, and the support and services they need to live independently (5).

There are a number of benefits to supported housing, including: improved quality of life, increased independence, and reduced hospitalization rates (6). However, there are also a number of challenges associated with supported housing, including: high costs, limited availability, and the need for ongoing support and services (7).

In this paper, we will discuss the challenges of supported housing for people with schizophrenia, and explore some of the strategies that can be used to overcome these challenges (8).

One of the main challenges of supported housing is the high cost of providing services (9). This is due to a number of factors, including: the need for ongoing support and services, the need for specialized staff, and the need for specialized facilities (10).

Another challenge is the limited availability of supported housing (11). This is due to a number of factors, including: the high cost of providing services, the need for specialized staff, and the need for specialized facilities (12).

Finally, there is the challenge of providing ongoing support and services (13). This is because people with schizophrenia often have ongoing mental health needs, and may need ongoing support and services to live independently (14).

There are a number of strategies that can be used to overcome these challenges, including: the development of shared housing, the provision of self-help services, and the use of telehealth (15).

Shared housing involves providing people with a safe and secure place to live, and the support and services they need to live independently (16). This can be achieved through a number of strategies, including: the development of shared housing schemes, the provision of self-help services, and the use of telehealth (17).

Self-help services involve providing people with the tools and resources they need to manage their own mental health (18). This can be achieved through a number of strategies, including: the provision of self-help manuals, the use of self-help apps, and the provision of self-help groups (19).

Telehealth involves the use of technology to provide mental health services (20). This can be achieved through a number of strategies, including: the use of videoconferencing, the use of self-help apps, and the use of telehealth services (21).

In conclusion, supported housing is a key component of community-based services for people with schizophrenia. However, there are a number of challenges associated with supported housing, including: high costs, limited availability, and the need for ongoing support and services (22).

There are a number of strategies that can be used to overcome these challenges, including: the development of shared housing, the provision of self-help services, and the use of telehealth (23).

Shared housing involves providing people with a safe and secure place to live, and the support and services they need to live independently (24). This can be achieved through a number of strategies, including: the development of shared housing schemes, the provision of self-help services, and the use of telehealth (25).

Self-help services involve providing people with the tools and resources they need to manage their own mental health (26). This can be achieved through a number of strategies, including: the provision of self-help manuals, the use of self-help apps, and the provision of self-help groups (27).

Telehealth involves the use of technology to provide mental health services (28). This can be achieved through a number of strategies, including: the use of videoconferencing, the use of self-help apps, and the use of telehealth services (29).

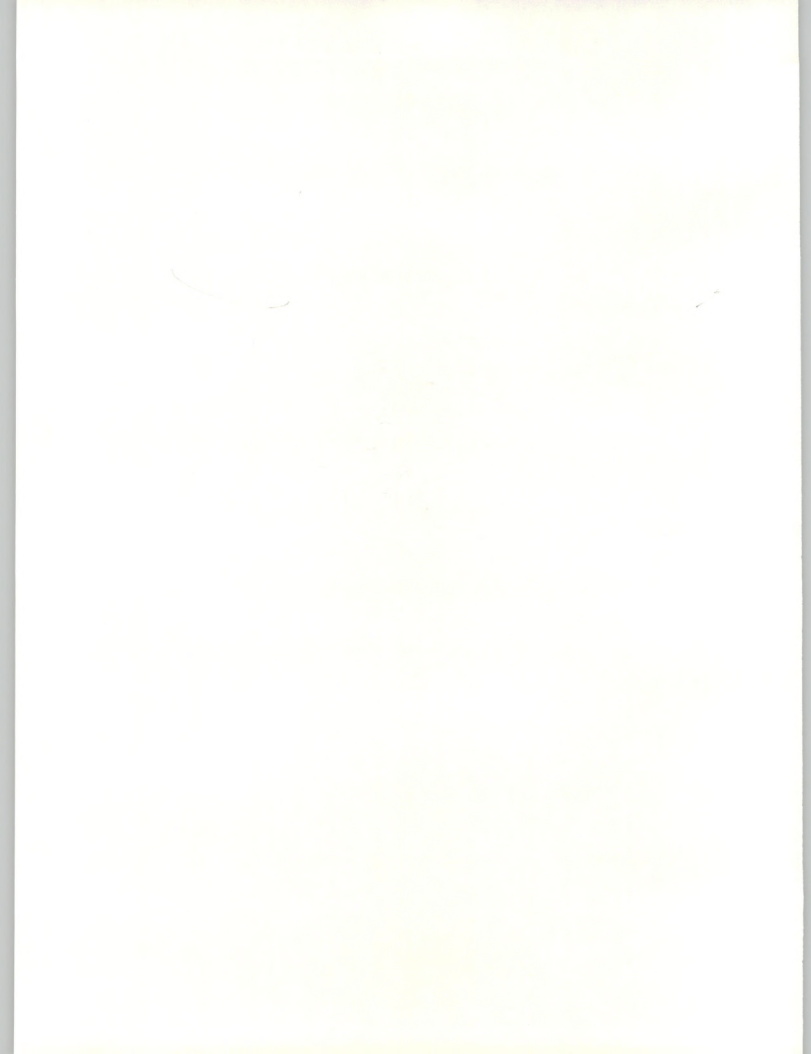






## Appendix: Definitions







## Appendix: Definitions

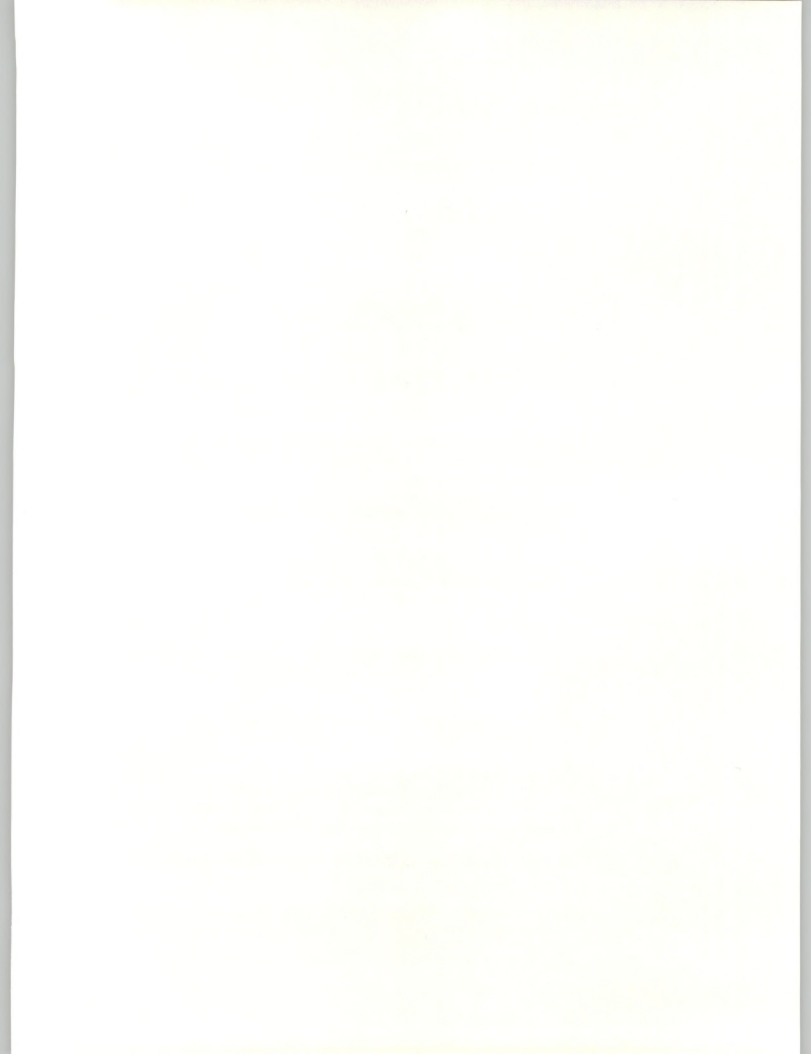
---

- **Applications Software** - Software that performs processing to service user's functions.
- **Artificial Intelligence** - The academic discipline involving the study of the processes by which humans perceive and assimilate data (and use reasoning to process this data) for the purpose of duplicating these processes within computer systems. Also, this term refers to the computer systems that accomplish these duplicated processes.
- **BOC** - Bell Operating Company.
- **Consulting** - Includes analysis of user requirements and the development of a specific action plan to meet user service and support needs.
- **Dispatching** - The process of allocating service resources to solve a support-related problem.
- **Divestiture** - The action, stemming from antitrust lawsuits by the Department of Justice, which led to the breakup of AT&T and its previously owned local operating companies.
- **Documentation** - All manuals, newsletters, and texts designed to serve as reference material for the ongoing operation or repair of hardware or software.
- **End User** - May buy a system from the hardware supplier(s) and do own programming, interfacing, and installation. Alternately, may buy a turnkey system from a systems house or hardware integrator.
- **Expert Systems Applications** - Applications for expert systems: a computer system based on a data base created by human authorities on a particular subject. The computer system supporting this data base contains software that permits inferences based on inquiries against the information contained in the data base. "Expert systems" is often used synonymously with "knowledge-based systems," although this latter term is considered broader and includes expert systems within its scope.





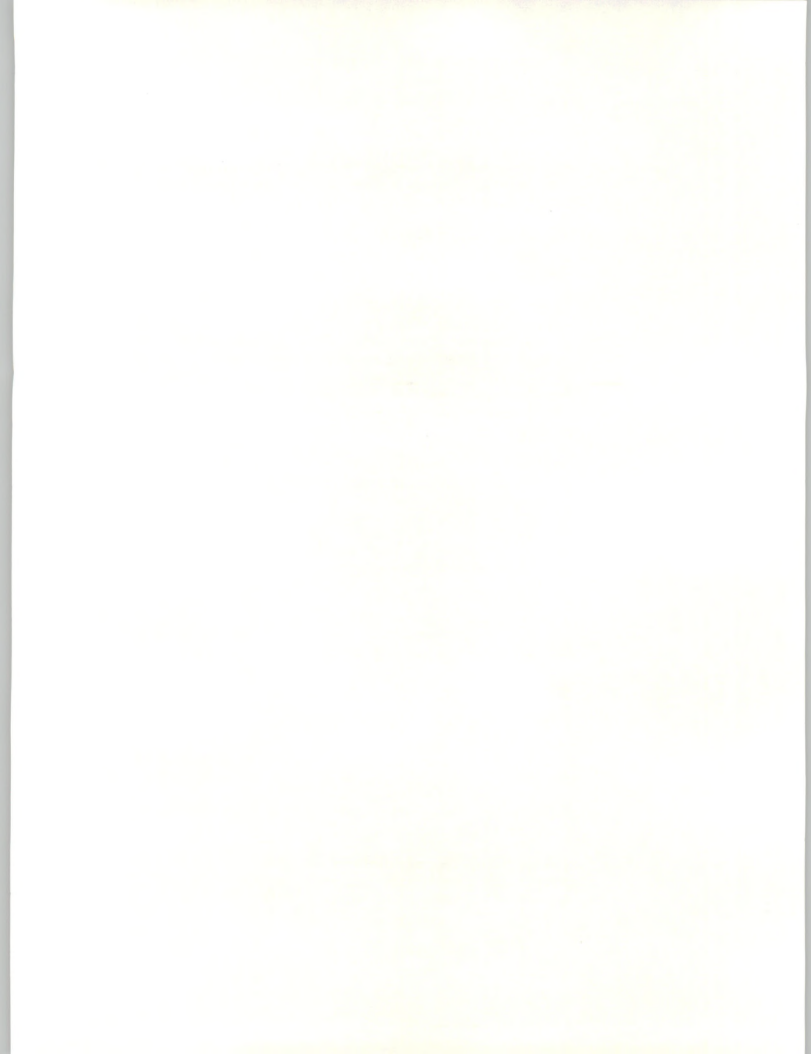
- Engineering Change Notice (ECN) - Product changes to improve the product after it has been released to production.
- Engineering Change Order (ECO) - The followup to ECNs which include parts and a bill of material to effect the change in hardware.
- Escalation - The process of increasing the level of support when and if the field engineer cannot correct a hardware or software problem within a prescribed amount of time, usually two to four hours for hardware.
- Fiber Optics - A transmission medium which uses lightwaves.
- Field Engineer (FE) - For the purpose of this study, field engineer, customer engineer, serviceperson, and maintenance person were used interchangeably and refer to the individual who responds to a user's service call to repair a device or system.
- Field Service Management System (FSMS) - A specialized application program that automates some, if not all, of the following activities of a field service organization: call handling, dispatching, parts inventory and tracking, billing, efficiency reporting, and other functions. Ideally, the system accesses one data base from which each function can use and modify data.
- Hardware Integrator - Develops system interface electronics and controllers for the CPU, sensors, peripherals, and all other ancillary hardware components. May also develop control system software in addition to installing the entire system at the end-user site.
- ISDN - Integrated Services Digital Network. A proposed standard for digital networks providing transport of voice, data, and image using a standard interface and twisted pair wiring.
- LADT - Local Area Data Transport. Data communications provided by the BOCs within local access transport areas (LATA).
- Large System - Refers to traditional mainframes including at the low end IBM 4300-like machines and at the high end IBM 308X-like machines. Large systems have a maximum word length of 32 bits and a standard configuration price of \$350,000 and higher.
- Major Software Problem - Problems ("bugs") that prevent further processing.
- Mean Time Between Failures (MTBF) - The elapsed time between hardware failures on a device or a system.



- Mean Time to Repair - The elapsed time from the arrival of the field engineer on the user's site until the device is repaired and returned to the user for his utilization.
- Mean Time to Respond - The elapsed time between the user placement of a service call and the arrival at the user's location of a field engineer.
- Microcomputer - A microprocessor-based single- or multi-user computer system typically priced less than \$15,000. A typical configuration includes an 8- or 16-bit CPU, monitor, keyboard, two floppy disk drives, and all required cards and cables.
- Minicomputer - See Small System.
- Minor Software Problem: A software problem ("bug") that allows further processing with some level of degradation.
- Operating System Software (System Software) - Software that enables the computer system to perform basic functions. Systems software, for the purposes of this report, does not include utilities or program development tools.
- PBX - Private Branch Exchange. A customer premises telephone switch.
- Peripherals - Includes all input, output, and storage devices, other than main memory, which are locally connected to the main processor and are not generally included in other categories, such as terminals.
- Planning - Includes the development of procedures, distribution, organization, and configuration of support services. For example, capacity planning, "installation" planning.
- Plug-Compatible Mainframe (PCM) - Mainframe computers that are compatible with and can execute programs on an equivalent IBM mainframe. The two major PCM vendors at this time are Amdahl and National Advanced Systems.
- Professional Services - A category of services including system design, custom programming, consulting, education, and facilities management.
- RBOC - Regional Bell Operation Company. One of seven holding companies coordinating the activities of the BOCs.
- Remote Diagnostics - Gaining access to a computer from a point physically distant from the computer in order to perform problem determination activities.



- Remote Support Implementation - An extension of remote diagnostics where some level of support delivery is performed from a point physically distant from the computer. Currently, this capability is more common to software support where problems can be solved or circumvented through downline loading of new code (fixes).
- Reseller - A marketing organization which buys long-distance capacity for others at wholesale rates, selling services at retail but discounted prices and profiting on the difference.
- Small Business Computer - For the purpose of this study, a system which is built around a Central Processing Unit (CPU), has the ability to utilize at least 20M bytes of disk capacity, provides multiple CRT workstations, and offers business-oriented systems software support.
- Small System - Refers to traditional minicomputer and superminicomputer systems ranging from a small multi-user, 16-bit system at the low end to sophisticated 32-bit machine at the high end.
- Software-Defined Network - A private network which uses public network facilities and which is configurable on an as-needed basis by the user (see Virtual Private Network).
- Software Engineer (SE) - The individual who responds (either on-site or via remote support) to a user's service call to repair or patch operating systems and/or applications software.
- Software Products - Systems and applications packages which are sold to computer users by equipment manufacturers, independent vendors, and others. Also included are fees for work performed by the vendor to implement a package at the user's site.
- Superminicomputer - See Small System.
- Systems Integration - The action of a single service vendor's design, development, and implementation of a system or subsystem including integration of hardware, software, and communications facilities for a customer.
- System Interruption - Any system downtime requiring an Initial Program Load (IPL).
- Systems House - Integrates hardware and software into a total turnkey system to satisfy the data processing requirements of the end user. May also develop systems software products for license to end users.



- T-I - Refers to a standard 1.544 megabit per second digital channel used between telephone company central offices and now used for microwave, satellite, fiber optics, or other bypass applications.
- Third-Party Maintenance (TPM) - Any service provider other than the original equipment vendor.
- Training - All audio, visual, and computer-based documentation, materials, and live instruction designed to educate users and support personnel in the ongoing operation or repair of hardware and software.
- Turnkey System - Composed of hardware and software integrated into a total system designed to completely fulfill the processing requirements of a single application.
- VSAT - Very Small Aperture Terminal. A small satellite dish system, usually using Ku-band frequencies.
- Virtual Private Network - A portion of public network dedicated to a single user.

