PRICING OF FIELD SERVICES

INPUT

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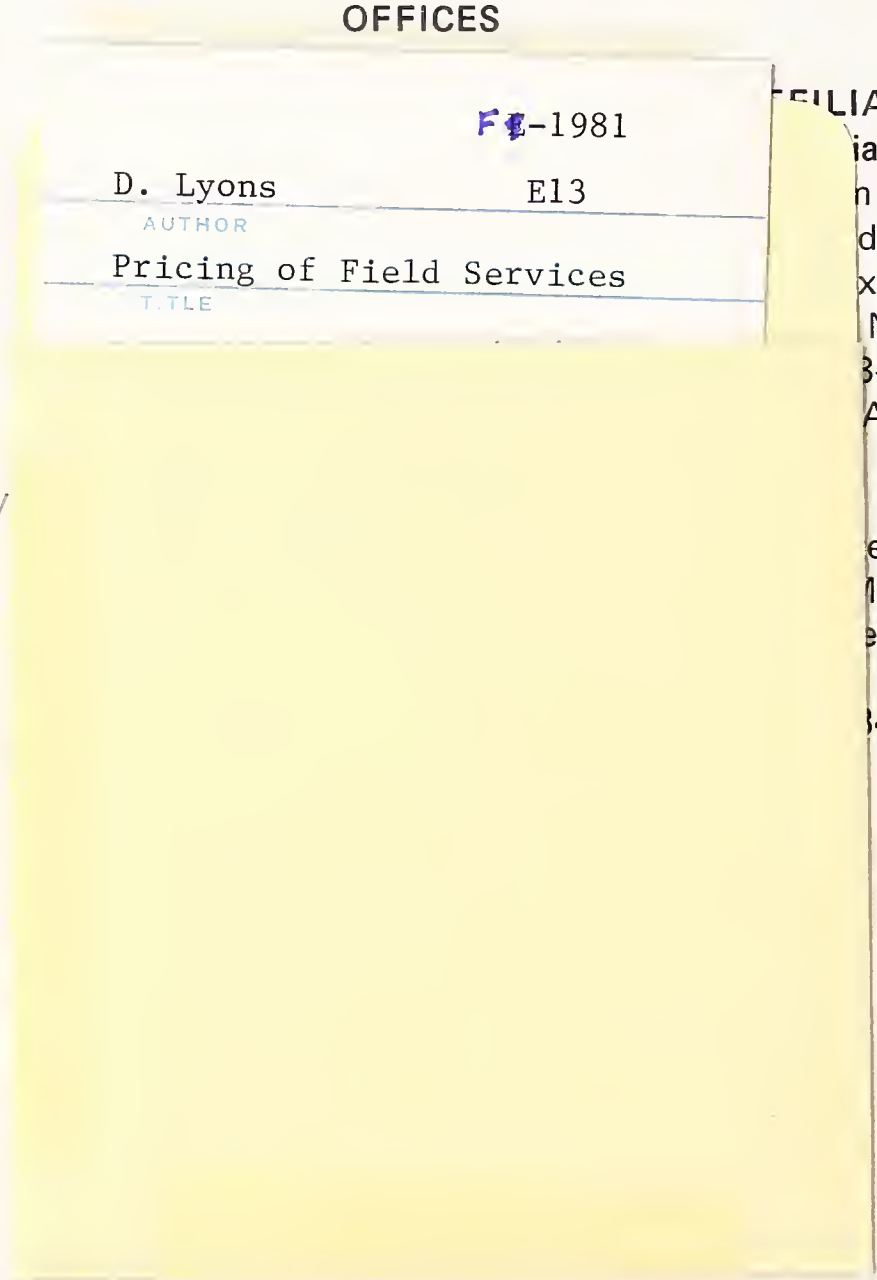

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INPUT Planning Services for Management

PRICING OF FIELD SERVICES

DECEMBER 1981

PRICING OF FIELD SERVICES

CONTENTS

EXHIBITS

1 INTRODUCTION

I INTRODUCTION

A. PURPOSE AND SCOPE

- This report is produced as part of the 1981 European Field Service Programme and provides an analysis of:

  - European field service cost and revenue trends.

  - The pricing process (approach, pricing components of standard services, and special services).

  - The roles of the various levels of management in authorising changes to existing service prices and setting new ones.

  - The effect of competition on the overall price levels of services provided.

  - Users' sensitivity towards current price/performance values, and their expectations for the future.

  - European service prices for selected equipment categories.

  - The effect and influence of the U.S. market place.

- The purpose of the analysis is to provide data for clients' consideration and to suggest recommendations that maximise the opportunities available.

B. METHODOLOGY

- The data for this report was extracted from:

  - Seventeen interviews with equipment vendors in the U.K., France, West Germany, Sweden, and Switzerland.

    . The vendor questionnaire that was used can be found in Appendix B.

  - One hundred twenty-five interviews with end users of the equipment categories covered by the report (mainframes, minicomputers, peripherals, and terminals).

  - Reviews of published contracts/pricing data from vendors where available.

- Other information was extracted from relevant INPUT studies, as shown in Appendix C.

C. REPORT ORGANISATION

- The report is structured to allow easy reference to the contents by organising the data into chapters that are either topic-related (e.g., "User Attitudes Toward Service Prices") or function related (e.g., "Executive Summary" for management overview, "Pricing Special Services" for Field Service Marketing).

- Chapter III, "Pricing," analyses the approach adopted by vendors in arriving at a price for services, as opposed to actual price values practised for each category of equipment (Chapter VI).

- The proliferation of special services justifies a separate chapter (IV) and covers all nonstandard assistance.

- The pricing data provided in this report is subject to variation due to exchange rate fluctations, ongoing pricing modifications by vendors, and data provided (and received) in good faith but which may contain errors.

- Chapter VII on the U.S. marketplace has been included to enable European clients to appreciate the market forces at work on the other side of the Atlantic. Data is drawn from field service contracts in the U.S.A.

- Clients' comments are welcome, and corrections, suggestions on content, and overall evaluation of the usefulness of the report will be gratefully received.

II EXECUTIVE SUMMARY

II EXECUTIVE SUMMARY

A. INTRODUCTION

- Pricing field services in the 1980s is proving to be more difficult than in the past. Costs are more volatile and service strategies are having to be adjusted to remote maintenance, user assisted maintenance, a less experienced and less professional user base, and lower equipment prices. Equipment users, also experiencing the need to keep costs down, are asking for more service on the one hand and lower service costs on the other.

- There is increased pressure on service management to keep prices at competitive levels and still contribute to corporate profits.

- Pricing processes invariably begin with a derivation of costs from projected equipment performance and reliability factors, however the most frequently mentioned last step is "Adjust to Competition."

- Many companies begin the service pricing process by determining their competitor's price and trying to "fit" their strategy and costs to it.

- The use of pricing models is highly refined in large companies but very much in its infancy in most others; those having modelling capabilities begin the pricing process with a model, but carefully analyse competition and their own existing structure.

B. HISTORICAL

- Traditionally the cost of maintenance has been related directly to the selling/purchase price of the equipment.

  - While this was convenient in the early days, the concept has permeated the industry and the user now applies this as a measure rather than a value judgement.

  - That is, while the actual dollars paid for service are the most important, it is also important that the amount should not be an excessive percentage of the product's purchase price.

- With the dramatic fall in the price of equipment, the increases in labour costs, and the greater diversity of equipment, the industry has created difficulties for itself: the maintenance service revenue can only be maintained by increasing service costs as a percent of purchase price.

- Fortunately for the majority of vendors, less than 10% of the users truly feel they have the alternative of doing maintenance themselves or using a third party.

  - Established vendors have a strong established customer base that ensures a guaranteed minimum revenue for the field service divisions.

  - New companies, struggling to establish a strong base, a good reputation, and a rapidly expanding workforce, feel more vulnerable and exposed to the question of pricing.

- Little effort is made in selling service compared to the effort made in ensuring that the price is within the percentage norm of the industry.

- A real fear exists in many field service managers of being accused of losing sales due to higher maintenance costs compared to the competition.

  - Many FS managers seem to accept this without demanding details and verification. This only encourages marketing to use field service cost as an excuse for a lost sale.

  - Service cost per technician is expected to rise an average of 16% by 1983. Exhibit II-1 shows the profit, revenue, and expense projections of selected countries in Western Europe.

  - Almost every company surveyed expects the share of field service revenues from maintenance contracts to increase dramatically. The average revenue share today is 55% - increasing to 75% by 1985. The largest decrease is in maintenance of leased equipment from 43% to 20%. Exhibit II-2 shows the expected changes in the sources of service revenue from 1981 to 1985.

  - Since standard maintenance contract pricing influences total field service revenues to such a large extent, and is also keenly watched by users and competitors alike, it has become a key issue in field service planning.

C. COST TRENDS IN SERVICE

- Service organisations are experiencing an increasing proportion of cost for labour and travel. Recent surveys put the average labour cost at 50% in a range of 30-75%. Exhibit II-3 shows the distribution of per-call costs for service organisations in Europe. Labour costs are very hard to control due to the shortage of skilled engineers in the industry but some headway has been achieved in controlling travel costs through the use of dispatch databases, remote diagnostics and depot maintenance.

EXHIBIT II-1

SERVICE PROFIT, REVENUE,
AND EXPENSE PROJECTIONS,
1981-1983

COUNTRY	VENDOR	SERVICE PROFIT (percent)		SERVICE REVENUE PER ENGINEER ($ thousands)		SERVICE EXPENSE PER ENGINEER ($ thousands)	
		1981	1983	1981	1983	1981	1983
United Kingdom	1	N/D	12%	$56	$94	$72	$83
	2	12%	14	98	111	65	78
	3	14	N/D	67	85	N/D	N/D
	4	18	25	72	93	61	69
West Germany	5	4	8	62	74	59	68
	6	8	10	77	90	63	72
	7	31	35	85	93	57	60
France	8	12	15	70	80	62	68
	9	32	29	99	118	55	66
Belgium	10	17	25	56	80	50	60
Scandinavia	11	10	10	51	69	45	52
Netherlands	12	27	31	89	98	61	N/D
	13	33	30	109	112	57	64

N/D = NO DATA
EXCHANGE RATES OCTOBER 1, 1981

EXHIBIT II-2

SOURCES OF SERVICE REVENUE, 1981-1985 IN WESTERN EUROPE

REVENUE SOURCE	1981	1985
Maintenance Agreement		
Low	14%	70%
High	80	80
Average	55	75
Maintenance of Leased Equipment		
Low	20	20
High	65	20
Average	43	20
Time and Materials Service		
Low	3	2
High	50	25
Average	20	13
Other		
Low	2	2
High	18	8
Average	10	5

NOTE: SHOWN AS PERCENT OF TOTAL SERVICE REVENUE

EXHIBIT II-3

DISTRIBUTION OF PER-CALL SERVICE COSTS

COMPONENT OF SERVICE COSTS	RANGE (percent)	AVERAGE (percent)
Labour	30-75%	50%
Travel	5-35%	18%
Parts and Material	8-45%	22%
Other	0-34%	10%
Total Cost per Call, (dollars)	$75-$500	$230

D. PRICING TRENDS

- Several manufacturers have recognised that there is a more diverse group of equipment users today than even three to four years ago. These manufacturers have begun the trend that is sure to dominate service pricing in this decade.

  - As the variety of equipment uses and applications increase, the users' needs for service change; one or two standard service programmes are no longer adequate to cover the needs and expectations of the user base.

  - Users with noncritical, low-volume operations may want less costly service programs providing longer response and repair time. Other users with highly integrated computer operations demand even faster response than 'Standard', or even four- or two-hour contracts.

  - Indeed, users with critical applications have said they would pay 20% more for service to get response and repair times closer to their 'Ideal.'

E. RECOMMENDATIONS

- INPUT recommends that service organisations in the information processing industry should change their approach to service pricing.

  - First, to provide users with a meaningful selection of services to match their individual needs. It is probable these services will range from non-labour materials contracts at one extreme to dedicated support with rapid response and on-site availability of major assemblies at the other.

- Second, the service industry has done little to present its services to the user in terms of value. As these new services are marketed each must carry a value message. Users frequently state that they feel most service support plans are formulated for the convenience of the service organisation and not the customer. Value pricing will:

  . Broaden and extend the range of price alternatives, moving away from the limiting 'Cost Plus Profit' thinking normally applied.

  . Allow field service to become a marketing commodity with service tailored to the users' needs, expectations and individual sensitivities.

  . Retard and deflect the potential erosion of service revenues as equipment becomes more reliable and less expensive.

- Most users state a willingness to become more intimately involved in the service of their equipment, to have a relationship with the hardware organisation much like they have with software organisations. Service programmes and pricing should capitalize on this desire by expressly defining a larger role in hardware service for the user. Programmes of this sort may well help offset the technical personnel shortages already impacting service organisations worldwide. However, care not to erode revenue potential and control must be exercised.

- Field service organizations should implement programs to improve their image with clients and prospects.

- As equipment becomes standardised, with little advantage from vendor to vendor, the buying decision is based on perceived quality and a positive image rather than on actual quality.

  - Little attention is paid to image building within field service with the notable exception of IBM.

- INPUT survey results consistently show IBM's actual user satisfaction levels and overall performance only slightly above the competition but, due to years of positive image building, IBM is perceived to be far superior.

- Image is a very marketable asset and has the added advantage of self-generation (once established), thus, potentially improving performance within the organisation.

  - Image building is not easy and requires a positive mental attitude from top field service management down, but the rewards are potentially far greater and often less expensive than new maintenance techniques, additional engineers, and inventory.

  - Image building starts from within by establishing field service as a sales and marketing partner. The second class citizen image must finally be rejected.

III PRICING

III PRICING

A. INTRODUCTION

- This section analyses the field service pricing process used by European vendors, including the strategies and methods employed. Pricing authority relationships are explored at management levels within organisations. Service pricing for specific services and equipment is reported as is the strategy of implementing price changes.

B. PRICING PROCESS

1. STRATEGY

- Strategies for service pricing vary widely, from pricing service below cost to enhance and stimulate sales, to achieving a specific return on investment and profit objectives.

- The pricing process, whatever the objective, invariably starts with projections of service cost derived from calculations of mean time between failure (MTBF), mean time to repair (MTTR), expected labour requirements, travel, and material costs. With the application of overhead and profit factors, a theoretical service cost is calculated. Exhibit III-1 graphs the factors

EXHIBIT III-1

FACTORS INFLUENCING SERVICE PRICING, FREQUENCY OF MENTION

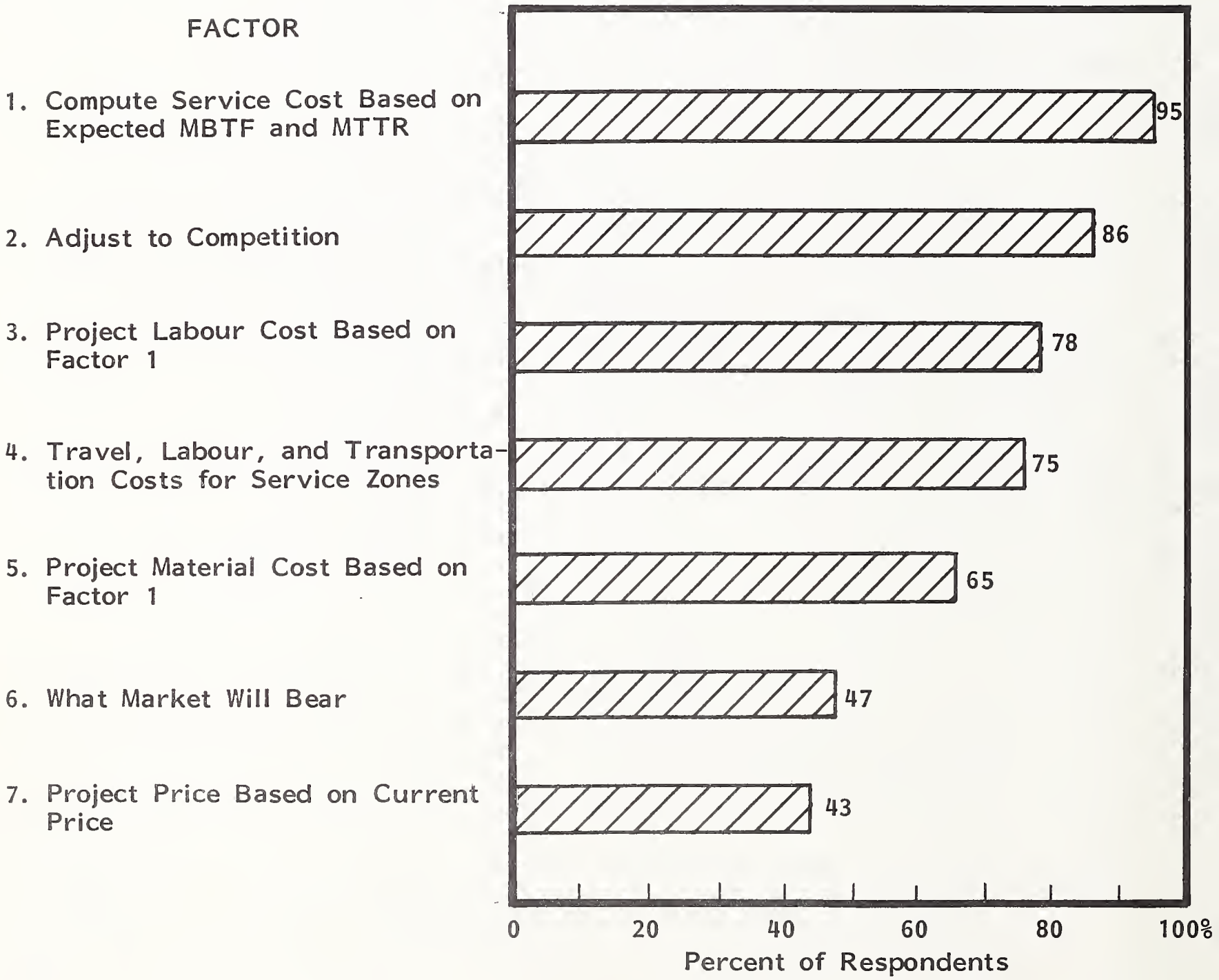

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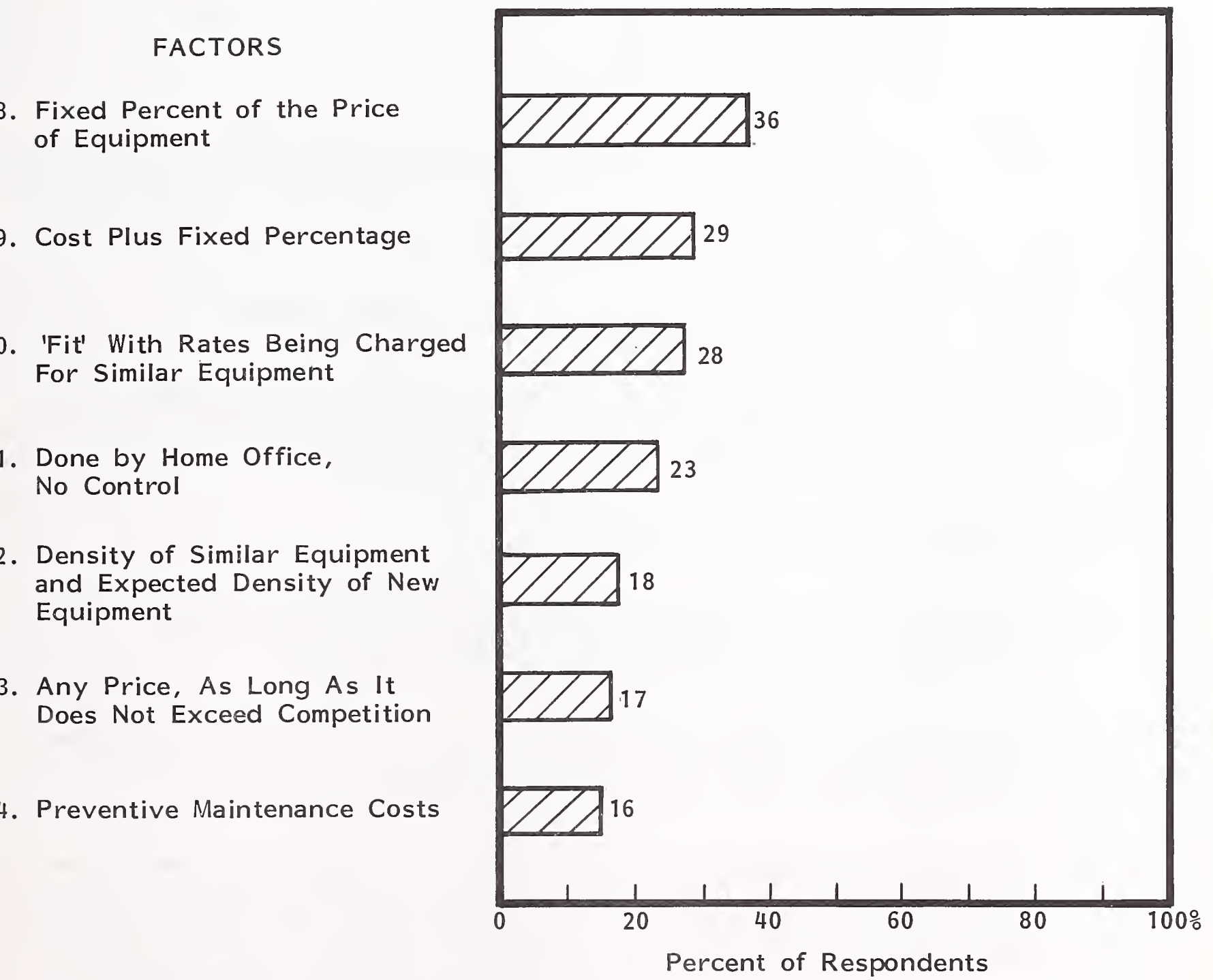
EXHIBIT III-1 (Cont.)

FACTORS INFLUENCING SERVICE PRICING,
FREQUENCY OF MENTION



mentioned as part of the service pricing process. As will be seen, the sequence in which these factors are considered is even more important.

2. COMPONENTS OF SERVICE PRICING

- Exhibit III-2 shows the sequence in which these pricing factors are considered in the pricing process. The most frequent starting point is the calculation of service costs based on MTBF and MTTR, though factor 2 (Adjust to Competition) is frequently the final factor in the process.

  - The typical pricing process follows these steps:

    . Calculation of labour and other costs based on MTBF and MTTR.

    . Derivation of service price from cost, plus overhead and profit.

    . Adjustment of price based on competitive analysis.

- Labour costs and travel time and expenses are an increasing component of service costs; materials and incidental costs are decreasing.

3. PRICING MODELS/PROFIT OBJECTIVES

- The use of pricing models is generally limited to the larger companies, and in most cases is used as a starting point in the pricing process.

- Profit objectives range from breaking even (i.e., recovering costs) to a before tax profit margin of 5% to 20% of revenues, as shown in Exhibit III-3.

- Calculated and desired prices always adjust to "fit" with competition - 86% of the companies indicated they adjust service prices to their competition, over 50% indicated it is the final step in the pricing process. About 35% of the companies begin the pricing process by establishing their competitor's price and trying to "fit" their costs to that price.

EXHIBIT III-2

FACTORS INFLUENCING SERVICE PRICING
POSITION IN PRICING PROCESS

FACTOR	POSITION IN PRICING PROCESS PERCENT OF TOTAL				
	FIRST	SECOND	THIRD	FOURTH	FIFTH
Compute Service Cost Based on Expected MTBF and MTTR	73%	24%	5%	2%	0
Adjust to Competition	3	15	18	25	27%
Project Labour Cost Based on Factor 1	0	14	10	4	0
Travel, Labour, and Transportation Cost for Service Zones	0	6	8	7	7
Project Material Cost Based on Factor 1	0	14	10	4	0
What Market Will Bear	1	3	8	2	5
Project Price Based on Current Price	2	5	9	13	16
Fixed Percent of Sales Price of Equipment	7	8	13	16	19
Cost Plus Fixed Percent	3	2	7	20	22
'Fit' With Rates Being Charged for Similar Equipment	3	5	6	5	3
Done by Home Office, No Control	4	0	0	0	0
Density of Similar Equipment and Expected Density of New Equipment	0	3	2	0	2
Any Price as Long as it Does not Exceed Competition	2	0	0	0	0
Preventive Maintenance Costs	0	0	2	0	0

NOTE: ALL RESPONDENTS LISTED THREE, FOUR, OR FIVE FACTORS

EXHIBIT III-3

PROJECTED SERVICE REVENUE AND PROFIT GROWTH,
1980-1985 IN
WESTERN EUROPE

(percent)

YEARS	PROJECTED SERVICE REVENUE GROWTH	PROJECTED PRETAX SERVICE PROFIT MARGIN
1980-1981		
Low	20%	5%
High	100	20
Average	61	12
1981-1982		
Low	12	10
High	100	20
Average	46	14
1982-1985		
Low	20	5
High	100	12
Average	50	12

4. VALUE DETERMINATION

- Much to the consternation of the user, little effort has been made by the service industry to review service prices in terms of value to the user. Almost all statements of value about service concentrate on convincing the user of the merits of having a maintenance contract rather than being in the less desirable position of a time and materials customer.

- Users are often led to believe that contract customers receive preferential treatment (i.e., quicker response, better access to field inventories, stronger commitment to escalation of problems to higher level technical specialists, and the like). In fact, most vendors admit the time and materials customers receive the same level of service as the contract customers.

C. PRICING AUTHORITY

1. WHO HAS IT?

- The final authority for field service pricing is dependent on two major factors: the reporting relationship of field service in the corporate or country organisation structure and the seriousness with which a profit from service is pursued. Exhibit III-4 depicts this relationship.

- Whoever has final price setting authority tends to follow the same steps whether the European operation is organised along functional lines or by country. Country organisations tend to be microcosms of corporate structures.

EXHIBIT III-4

THE RELATIONSHIP BETWEEN ORGANISATIONAL
STRUCTURE, BUDGETS, AND SERVICE PRICING AUTHORITY

FIELD SERVICE REPORTS TO:	WHERE SERVICE COSTS ARE CHARGED	PROPOSES SERVICE PRICES	REVIEW SERVICE PRICES	SETS SERVICE PRICES SUBJECT ONLY TO CEO REVIEW
Marketing - Sales	Marketing - Sales Budget	Service Management	Marketing - Sales Management	Top Marketing - Sales Executive Country Manager
Marketing - Sales	Separate Budget Center in Corporate Marketing - Sales Separate Budget at Country Level	Service Management	Corporate Management Top Marketing Sales Executive	Top Marketing - Sales Executive
Operations Management	Separate Budget	Service Management	Operations Management	Top Operations Executive
Country Manager	P&L Status Clouded by Undistributed Expenses for Sales Assistance, Warranty, Unpaid Installation etc.	Service Management	Corporate Management, Country Manager	Country Manager Service Manager
Executive VP Level	Separate Budget, Clearly Defined P&L Objectives, Distribution of Warranty, Sales Expenses, etc.	Service Management	Corporate Management Marketing Sales	Service Manager

- The degree to which field service is relieved of costs for activities such as warranty repairs, installation of engineering change orders (ECO), sales support and other nonrevenue generating activities, and the pursuit of an actual service profit determines the influence of service management on service pricing.

2. PROFIT AND LOSS AUTHORITY/RESPONSIBILITY

- The service manager is most likely to have final authority for service prices where field service is independent of the marketing sales organisation and has specific profit objectives related to actual service revenues.

- At the other end of the scale, least authority occurs where field service operates on a sub-budget of the sales organisation. In this case, service prices are frequently set at or below cost to enhance sales; service operating expenses exceeding revenues are absorbed in the sales budget.

3. MANAGEMENT ROLE

- The country service manager's influence over service prices follows the same pattern: those reporting to a country general manager have significant influence, if not final authority, over service prices. Those reporting to a European functional manager have less influence, as determined by where the top European service manager reports.

- Companies with headquarters in the United States are experiencing increasing pressure and direction for centralised pricing control at the U.S. corporate headquarters. This trend grows as an increasing share of the U.S. companies' total revenue is achieved in Europe. Equally, large multinational clients demand uniform pricing.

- Independent European subsidiaries of U.S. companies (and indeed country subsidiaries of European companies) have done a poor job in the past of providing like services at like prices from one country to the next. Often

there are few reasons for services and prices to vary as widely as they do from country to country, except that different objectives and philosophies of local country managers caused local service management to take different routes, with the objective of maximizing revenues within the competitive context of their particular country markets.

D. COMPETITION AND SERVICE PRICING

1. EFFECT ON PRICING

- Competition is the final authority on service prices. No company will deliberately price service above direct competition without a clear competitive advantage in its product.

- Almost every company begins the service pricing process with a projection of service costs based on expected MTBF, MTTR, labour rates, travel costs, and material costs, but in the final analysis service prices are adjusted to fit properly with competitors' pricing and the market.

- Most companies stated that they will lower service profit objectives rather than maintain service prices at a level above competition which is detrimental to sales. Gross profit margins are sometimes reduced by as much as 30%, if forced by competition.

- Clearly the desire to price field services to allow a reasonable return on investment is secondary to the desire to sell products. Competitive products, competitive pricing, reasonable product reliability, and economies of scale must all be present before service can be expected to contribute the kind of profit (in the 15% to 25% range) for which the industry so anxiously strives.

2. INFLUENCE OF IBM

- The influence of IBM on other vendors' service prices ranges from total domination to none according to respondents. In those markets where the products are "IBM Replacements," service prices are set typically 10% below IBM by the third-party service companies, and no more than equal by add-on manufacturers who have their own service groups.

- Many respondents at the other end of the spectrum, with products that do not compete in IBM markets, are totally unconcerned with IBM service policy and pricing. This is probably to the detriment of these suppliers since it is widely accepted that IBM's service pricing is the result of the best service/cost database in the industry, with pricing models accurately reflecting service costs.

- Even where there is no direct product competitiveness the astute service manager must consider IBM's service price as a valuable data input.

E. PRICE CHANGES

1. BASIC RATES

- Price changes generally affect two elements of service pricing: the basic hourly labour rate from which all other labour rates are derived, and the basic maintenance rate for each equipment model. Equipment maintenance rates are derived from the pricing process discussed earlier.

- Service contracts are usually written for a fixed term, most often one year, and are self-renewing unless some action is taken by the vendor or user to cancel an agreement or inhibit renewal. The relationship between the user and vendor is considered to be ongoing and long term.

2. TIME AND FREQUENCY

- Most vendors in Europe issue service contracts at the beginning of the calendar year and pro-rate those initiated between the annual renewal dates. Price increases for equipment service under contract are most often effective at the time of renewal.

3. NOTIFICATION OF USERS

- Notification of the price increase is sent in writing to the user 90 days prior to the renewal date. Lack of action by the user (to inhibit renewal) is considered to be acceptance of the new rates and contract.

- Exhibit III-5 shows the trend of the overall service price increases enacted by vendors in Belgium, West Germany, the Netherlands, Norway, and the U.K.

4. LEVEL OF PRICE INCREASES

- Users have historically accepted price increases at or near the local rate of inflation without question. All vendors in the survey felt "safe" in raising prices at the inflation rate and experienced little or no resistance from the users.

- Increases in service prices above the local inflation rate for the same levels of service are rare. Users expect improved profitability for service organisations to be the result of productivity increases rather than price increases above accepted inflation rates.

- Most companies report that they change their service contract prices no more than once per year for administrative reasons as well as to maintain their customers' confidence and goodwill. Hourly labor rates and transportation charges (such as the car mileage rate charged to the user) are often changed

EXHIBIT III-5

AVERAGE SERVICE PRICE INCREASES, 1980
AND 1981 IN WESTERN EUROPE

COUNTRY	INCREASE 1980	INCREASE 1981
Belgium	7.0%	7.0%
West Germany	5.9	5.1
Netherlands	3.6	2.4
Norway	10.0	12.5
United Kingdom	8.7	9.3

more frequently. Three changes in a single calendar year are not unheard of during periods of high inflation. Two changes in labour rates per year are fairly common.

- Except where specific contracts specify notification, changes in labour rates and mileage rates are put into effect without prior notification to customers.

IV PRICING SPECIAL SERVICES

IV PRICING SPECIAL SERVICES

- For the purpose of this section, "special services" refers to customized service programs, resident personnel, on-call services, remote diagnostics, non-standard response times, special spares arrangements, user-assisted service, etc. 'Non-standard' services refers to services that are not included as part of the vendor's standard maintenance contract (varies from vendor to vendor).

A. PRICING AUTHORITY

- In 80% of the companies surveyed, price determination for special services is the responsibility of the service manager. However, it is not uncommon for nonstandard services to be defined and priced at the field office level.

- Pricing nonstandard services is generally achieved by the adaptation of the relevant component(s) of standard operating procedures to an activity not generally included in the standard service agreement.

- Authority to commit the company in these cases is frequently given to the marketing or product management group responsible for preparing the total proposal. The personnel involved are not normally part of the standard service pricing appraisal process.

- Most companies report projecting lower service profit objectives when pricing special programs. This confirms the view that special services are used to accommodate requirements from determined users, with the objective of obtaining (or retaining) that specific user's business.

B. CUSTOMISED PROGRAMS

- Customised service programs for specific users or groups of users are offered with great reluctance by vendors, except for accepted client groups such as government or military installations.

- However, where third-party maintenance vendors are active (e.g., the U.K.) this special privilege is extended to very large user installations which would otherwise be lost.

- Any such agreement is preceded by a good deal of negotiation, on a case by case basis, with no published prices or procedures followed.

- Nevertheless, a wide variety of services are now available which enter into the broad category of special services; these are examined in Sections IV-C through IV-K.

C. RESIDENT SERVICE PERSONNEL

- Most large mainframe vendors are prepared to offer resident service personnel - at a price. If sold as an integral part of the system proposal (rather than as an afterthought to stave off third-party maintenance offers) the result can be all-round satisfaction. In some cases, if the site is large enough, this is an option that is offered at no extra charge.

- The engineer(s) assigned can participate in the finalisation of the equipment's specification and can select test equipment, spares levels, site environment, and participate in the selection/purchase of air conditioning equipment, false floor supplier and similar actions. After contract signature, he can participate in user education and can actively 'sell' field service to the user (particularly any price alterations that need to be made).

- From the vendor's point of view, good user relations (and high levels of satisfaction) are complemented by regular add-on business and 'inside' information on application expansion and competitive threats. The resident engineer(s) also tends to be satisfied since the work location is stable, he is in charge of his 'own' site, and his role can be broader than that of normal engineering.

D. ON-CALL COVERAGE AFTER HOURS

- After hours coverage is increasingly offered as a regular option of the standard contract, but not at substantial increments over the normal rate.

- On Monday through Friday, a small extension of coverage for four hours beyond the prime shift results in an increase of 10-15% in the monthly maintenance charge (MMC). An eight-hour extension costs between 25% and 30% of the MMC. However, the next additional eight hours (i.e., 24-hour coverage) costs only 14% to 15% more than the two-shift coverage.

- From the user's point of view it therefore appears that vendors discourage single-shift users to move up to two shifts but encourage two-shift users to use 24-hour coverage.

- A similar disparity often occurs in the pricing of Saturday and Sunday coverage. The addition of the sixth day of coverage (Saturday) often results in a cost increase that is lower (15-18%) than the additional amount of coverage provided (20%). Not all vendors differentiate between Saturday and Sunday in their pricing of maintenance coverage, but those that do make Sunday appreciably more expensive as an add-on than Saturday.

- This is not a good strategy. Users should be encouraged to make full use of their equipment by making extended coverage progressively cheaper, since this will increase maintenance revenues, accelerate the ordering of equipment add-ons, and lock customers in tighter.

E. PREVENTIVE MAINTENANCE AFTER HOURS

- Preventive maintenance (PM) is usually a nonchargeable activity accomplished in scheduled periods of a users' prime time usage. This disrupts production, but the majority of users do not wish to see PM activity reduced.

- There is therefore a case to be made for offering PM as a separately chargeable, after-hours activity, particularly to the vast majority of Europeans who use the prime shift intensively, and who do not wish to move to a two-shift coverage.

F. REMOTE DIAGNOSTICS

- Until now, remote diagnostics (RD) has been seen by vendors as a means of:

  - Improving field engineer efficiency.

  - Reducing costs but not as a means of producing extra revenue.

- Experience to date has shown that the effects of RD are more complex than that, requiring significant changes in the mix of specialists/generalists in the field and sometimes increasing costs.

- A high proportion of vendors have implemented remote diagnostic facilities. It therefore seems unlikely that this facility can ever be separately priced as an option. After vendors have implemented an effective RD service, users accustomed to receiving the benefits as part of the normal service will resist attempts to price it separately.

G. NONSTANDARD RESPONSE TIME

- Currently, normal contract response times vary from: 'Within prime time' to 'four, six, or eight hours (depending on distance from the nearest maintenance centre)' to 'target of two to four hours' to 'guaranteed response of two, four or eight hours'.

- Nonstandard response times are therefore defined as those that do not fit in with a given vendor's program of response. This may be a user requirement of guaranteed response of one hour (for a premium) or a same/next day response for noncritical usage, at a reduced cost.

- Few vendors are prepared to be this flexible, unless the user makes it a condition of purchase of the system, with the result that users cannot get what they are prepared to pay for, and thus pay for what they really do not need.

- INPUT recommends that vendors offer flexible maintenance contracts (where possible) that encourage users to upgrade their response times, by avoiding excessive step increases in charges.

H. INSTALLATION/EQUIPMENT MOVING

- Installation costs are normally billed as a contractually standard part of the purchase agreement and amount to 2-3% of the purchase value.

- Equipment moving entails transportation, re-installation, and retesting of the system; however, most vendors are prepared to negotiate a fixed price contract or even quote costs of the order of 1-1.5% of the purchase value of the equipment.

I. SPECIAL SPARES ARRANGEMENTS

- Vendors have the option, when users insist on guaranteed response levels, of making such response conditional on the user agreeing to pay for and store the complement of spare parts that the vendor deems necessary.

- In large/very large installations this is a common practice, but it also applies to critical user groups such as time-sharing bureaux who are minicomputer-based.

J. USER-ASSISTED SERVICE

- With small computers, it is the norm that the user (of, for example, a home microcomputer) must expect to take full charge of his system and carry out basic PM as well as remedial maintenance himself, usually by parts replacement.

- As the user interface of larger computers is simplified the opportunity exists for the user to become heavily involved in user-assisted service. This can take many forms but will probably be closely associated with remote diagnostics.

- The idea is attractive, but it presents specific contractual difficulties. Typically, normal maintenance service includes the cost of labour and parts but specifically excludes faults due to customer attempts to repair the machine.

- Another typical provision of the standard contract is that parts removed by the vendor become his property. In the case of user-assisted maintenance, this property right should not be lost merely because it is the user who removes the part.

- Yet another aspect concerns faults/damage incurred by improper manipulation, or even by insertion of the wrong part. Thus while user involvement in self-maintenance seems inevitable in the long run, it is not going to be simple to implement, particularly in regard to the responsibility for consequential damages and lost profits.

K. ECO/FCO INSTALLATION

- Like PM, engineering change order (ECO) and field change order (FCO) installation is an activity defined and controlled by the vendor - and usually paid for by him as well.

- This can be viewed as an additional service to users in certain cases (although most ECOs/FCOs are a necessary correction of equipment to enable it to perform to the original specification).

- Where visible performance improvements result, the possibility exists for vendors to offer the change as an optional benefit - at a cost. Even if such

changes only offset the cost of installation, they contribute to an ongoing expense for the vendor.

V USER ATTITUDES TOWARDS SERVICE PRICES

V USER ATTITUDES TOWARDS SERVICE PRICES

A. PRESENT PRICE/VALUE RELATIONSHIP

- Field service was evaluated by users in terms of eight major components, as shown in Exhibit V-1.

  - Quality of the engineers servicing their equipment.
  - Quality of the field service managers.
  - Quality of the service information provided.
  - The availability of spare parts.
  - The usefulness of remote diagnostics.
  - The overall quality of the service received.
  - A judgement of whether they received value for money.
  - The expected value of field service in 1982.

- On a scale of one to five, where 1 = low and 5 = high, engineer quality obtained a high degree of user satisfaction across the spectrum of equipment main-

EXHIBIT V-1

USER EVALUATION OF SERVICE
BY EQUIPMENT CATEGORY

SERVICE COMPONENT	LARGE MAIN-FRAMES	MEDIUM MAIN-FRAMES	SMALL BUSINESS SYSTEMS	MINI-COM-PUTERS	WORD PRO-CESSORS	TER-MINALS	PER-IPHERALS
Quality of Engineers	3.7	3.6	3.6	3.3	3.1	3.5	3.7
Quality of Field Service Managers	3.7	3.5	3.7	3.4	3.1	3.6	3.7
Quality of Service Information	3.0	2.8	2.7	3.0	2.8	3.0	3.1
Availability of Spare Parts	2.9	3.2	3.4	3.1	3.2	3.4	3.3
Usefulness of Remote Diagnostics	3.4	2.5	3.8	3.0	4.0	3.1	3.0
Overall Quality of Service, 1981	3.6	3.5	3.6	3.3	3.1	3.6	3.6
Value for Money	3.0	2.8	3.0	2.8	2.9	3.2	3.2
Expected Value of Service in 1982	3.6	3.4	3.7	3.2	3.6	3.6	3.7

RATING: 1=LOW, 3=AVERAGE, 5=HIGH
SOURCE: USER INTERVIEWS

tained (an average of 3.5, or 70%). This is important, since the front-line contact with the user, which conditions the user's view of the vendor's efficiency and ability, is the engineer.

- Field service managers achieved a similar overall rating, reinforcing the good performance of field engineers.

- However, the quality of service information provided to end users was uniformly rated as only 'average' (scores around 2.9). This suggests that users feel they are capable of achieving more in servicing their equipment, if only they knew how. Users also suggested making such voluminous data available on microfiche.

- Spare parts availability has improved over the ratings of a year ago. Users rated this aspect between 3.2 and 3.4

- The usefulness of remote diagnostics was rated highly in some cases (e.g., small business systems : 3.8) and far lower in others (e.g., medium mainframes: 2.5). It is, however, a significant improvement over the users' evaluation of one year ago, when the majority felt that RD did not offer significant improvements in service.

- The overall rating of the quality of service received was high (in excess of 3.5) and most users expected some improvement in 1982. Word processor users rated the 1981 service far lower than other equipment categories (3.1).

- However, after this detailed appreciation of the level of service received, users were unanimous in declaring their reservations as to whether they receive value for money (2.8-3.2). This clearly demonstrates that users feel that field service is costly.

- Exhibit V-2 shows, from the vendors' point of view, the level of response provided, by category of equipment in relation to the percent of the purchase price of the equipment.

EXHIBIT V-2

FIELD SERVICE PRICE/VALUE RELATIONSHIPS BY EQUIPMENT CATEGORY

EQUIPMENT CATEGORY	PURCHASE PRICE ($ thousands)	ANNUAL MAINTEN-ANCE (percent)	ACTUAL RESPONSE TIME (HOURS)
Large Mainframes	$2,000	7.2%	<1.0
Medium Mainframes	456	9.0	3.2
Small Business Systems	114	9.8	3.2
Minicomputers	49.6	11.9	4.9
Word Processors	19.5	13.2	3.7
Peripherals	6.4	13.1	5.6
Terminals	7.7	11.7	4.3

SOURCE: VENDOR INTERVIEWS

- From this exhibit, a number of interesting relationships appear. For example, the actual yearly maintenance revenue from a medium mainframe is approximately 28% that of a large mainframe, whereas the response time is almost the direct inverse (3.5 times worse). This suggests that vendors have determined a direct relationship between revenue and response time that is common to classes of equipment.

- Equally the maintenance revenue from a minicomputer is, on average, 53% that of a small business system - and the response time increases by a like amount (65%). On the face of it, for certain categories of equipment at least, vendors have matched field service performance with field service revenues, which is not unreasonable. None of the vendors interviewed suggested that they consciously aim for such a goal, however.

B. ACCEPTABLE PRICE INCREASES

- When discussing possible price increases, several factors must be taken into account:

  - The price increase that users would find acceptable, under certain conditions.

  - The price increase that users will accept without incentives.

  - The price increase that users expect they will have to pay regardless of what they feel.

- The environment in which increases in service prices are considered, it must be remembered, is one where users already feel that they are paying too much money for service.

- In each category of equipment, significant price increases were declared 'acceptable' by users provided that 'ideal' repair times were achieved by the vendor. The range of acceptable price increase was 15% (small business systems) to over 20% for other categories.

- This level of price increase was based on vendors being able to achieve big improvements in repair time (from two to four hours on average) down to a level more compatible with the performance provided to mainframe users (i.e., one to two hours).

- Important variations of repair time were recorded by users. Whereas the average repair times were around two to four hours, large numbers of users had frequently experienced between five to seven hours of waiting.

- Thus, given the necessary performance improvements in service, users are quite prepared to pay significantly more despite the feeling that prices are already high.

- It appears that vendors are either not able to provide this level of service or have not recognised this potential revenue gain, since very few actively market a response time contract lower than two hours to the average user (such contracts being considered special cases). Even when such contracts are offered, they are at prohibitive prices (increases of 50% over normal monthly maintenance charges for a two-hour response, for example).

- As far as nonperformance related price increases are concerned, users declared that an unacceptable price increase level would be between 14% and 16% over current rates.

- The average price increase expected from vendors in 1982 is estimated at around 10% by users, based on their experience of past increases being in the region of 10.5% to 14% in years when inflation was appreciably higher than in 1981.

C. DESIRABLE SERVICE IMPROVEMENTS

- It is not surprising that the vendors' view of the service performance provided to users differs from the users' view of the service they receive. It is INPUT's experience that accurate records of service performance are not kept by users, who therefore respond to interviews somewhat subjectively.

- However, while small differences are to be expected, large differences have to be taken seriously. Thus, a comparison of Exhibit V-2 (the vendors' claims for response times) and Exhibit V-3 (the users' view) suggests that minicomputer suppliers are not performing as well as they claim, that word processor vendors are either measuring inaccurately or are badly informed, and that terminal vendors are being overly optimistic.

- With regard to system availability, users of all categories of equipment feel entitled to expect 98% uptime. Most equipment comes close to this goal, apart from significant failures of small business systems, minicomputers, and word processors.

- As far as repair time is concerned, all categories of users would like to see the repair delay reduced by at least 50%, and most categories would like to see a 70% reduction.

- This is the performance the vendors have to aim for, if they expect to obtain significant price increases for service without creating discontent amongst their users.

- Plans for service revenue increases are dependent, to a large extent, on how vendors react to this need. Pressing users for money without offering service improvement is unlikely to produce orderly growth of service revenues, since users are already beginning to expand on usage without expanding maintenance coverage, (see next section).

EXHIBIT V-3

DESIRABLE SERVICE IMPROVEMENTS

CATEGORY EQUIPMENT CATEGORY	SYSTEM AVAILABILITY (percent)		RESPONSE TIME (hours)		REPAIR TIME (hours)	
	CURRENT	IDEAL	CURRENT	IDEAL	CURRENT	IDEAL
Large Mainframes	96%	98%	1.2	0.8	3.0	1.0
Medium Mainframes	96	98	2.5	1.5	3.9	1.2
Small Business Systems	90	98	4.7	5.0	2.6	1.9
Minicomputers	93	98	6.3	2.7	3.9	1.5
Word Processors	94	98	9.6	2.3	2.7	1.3
Terminals	97	98	11.5	4.1	25.0	8.1
Peripherals	96	99	5.1	3.2	3.0	1.5

SOURCE: USER INTERVIEWS

- A detailed analysis of the user's evaluation of the main maintenance issues is provided in Exhibit V-4.

- There is a reasonable degree of conformity in the views of users of all categories of equipment. This serves to highlight the factors that are important to users.

- In order of priority, system availability and its counterpart, equipment reliability, are clearly underlined as the principal factors of concern to users. Any demonstrable advantages over competition in these areas allows a product to be priced at the higher end of the spectrum (as is frequently the case with Hewlett-Packard).

- Closely behind the above factors (and closely allied to the theme of reliability and availability) are the response time and repair time of a product's service.

- After these four factors, the price of maintenance becomes a concern. This, surely, is another clear indication that although users are already disturbed by the cost of service, they are willing to consider further increases if improved service results.

- The non-essential issues are also underlined by Exhibit V-4:

  - Remote maintenance (surely a bad way of saying on-line assistance).

  - Support centres, not popular because of the impersonal, 'remote' service that goes with them.

  - Flexible contract (service is more important).

  - User self-maintenance (still considered by many users as an attempt by service vendors to make them do the vendor's job).

EXHIBIT V-4

USER EVALUATION OF
THE IMPORTANCE OF MAINTENANCE ISSUES
BY EQUIPMENT CATEGORY

ISSUE	AVERAGE RATING*						
	MAINFRAMES		SMALL BUSINESS SYSTEMS	MINI-COMPUTERS	WORD PROCESSORS	TERMINALS	PERIPHERALS
	LARGE	MEDIUM					
System Availability	2.8	2.9	2.8	2.7	2.7	2.8	2.8
Response Time	2.6	2.6	2.7	2.4	2.4	2.5	2.6
Repair Time	2.6	2.6	2.7	2.5	2.6	2.6	2.7
Preventive Maintenance	2.2	2.2	2.3	2.3	2.3	2.2	2.3
Remote Maintenance	1.6	1.6	1.7	1.4	1.7	1.5	1.6
Escalation Procedures	2.4	2.3	2.2	2.3	2.4	2.4	2.3
Price of Maintenance	2.5	2.5	2.4	2.4	2.3	2.4	2.5
Stable Engineer Population	2.3	2.4	2.3	2.6	2.4	2.3	2.4
Uptime Guarantees	2.0	2.0	1.9	2.0	1.9	2.1	2.0
Equipment Reliability	2.8	2.8	2.7	2.9	2.8	2.8	2.8
Support Centres	1.8	1.9	2.1	2.0	2.0	1.9	1.9
Software Maintenance	2.4	2.3	2.3	2.1	2.2	2.2	2.3
Flexible Contract	1.8	1.8	1.7	1.7	1.7	1.7	1.7
User Self-Maintenance	1.3	1.4	1.4	1.7	1.3	1.5	1.6

*RATING: 1=LOW, 2=AVERAGE, 3=IMPORTANT
SOURCE: USER INTERVIEWS, TOTAL SAMPLE

D. EXPECTED EQUIPMENT USAGE

- As mentioned earlier, there is some evidence that users have begun to expand their equipment usage without expanding maintenance coverage. This is something they are entitled to do, but it affects maintenance revenue and forecasts that field service managers must constantly produce.

- The normal process of revenue forecasting starts from the installed base, planned price changes, growth through equipment add-ons and new shipments, (less equipment retired or returned), plus an assumption on growth of equipment usage.

- Field service revenue growth is principally affected by price changes (unless the vendor is a newcomer to the market and has a very high shipment to installed base ratio). Therefore attention to the degree to which prices can be changed without user revolt (e.g., by clearly justifying the changes through improved service) is a key issue.

- Growth of revenues through growth of user equipment usage is obviously welcome to field service managers, but it appears that one does not always follow the other.

- Exhibit V-5 shows, for example, that large mainframe users on average used 22% more time on their systems than was covered by a maintenance contract - a big loss of maintenance revenue.

- Medium mainframe users went further in 1981, and used 2.1 shifts on average versus a contracted maintenance coverage of 1.6 - an increase of 31%. In 1982, the declared intent is to use the equipment for a sixth day without increasing the maintenance coverage.

- On the minicomputer front, a similar pattern is observed, with 1.9 shifts used in 1981, on average, against only 1.2 with contracted coverage. And similar

EXHIBIT V-5

USER EXPECTATIONS FOR USAGE VERSUS CONTRACTED MAINTENANCE,
1981-1982, BY EQUIPMENT CATEGORY

EQUIPMENT CATEGORY	CONTRACTED MAINTENANCE				EQUIPMENT USAGE			
	NUMBER OF SHIFTS		DAYS/WEEK		NUMBER OF SHIFTS		DAYS/WEEK	
	1981	1982	1981	1982	1981	1982	1981	1982
Large Mainframes	2.3	2.3	5.4	5.4	2.8	2.7	5.4	5.4
Medium Mainframes	1.6	1.6	5.2	5.1	2.1	2.0	5.4	6.1
Small Business Systems	1.3	1.4	5.1	5.1	1.4	1.6	5.2	5.2
Minicomputers	1.2	1.2	5.2	5.2	1.9	1.7	5.5	5.5
Word Processors	1.2	1.2	5.0	5.0	1.3	1.3	4.9	4.9
Terminals	1.2	1.2	5.1	5.1	1.5	1.6	5.4	5.3
Peripherals	1.9	1.9	5.5	5.5	2.1	2.1	5.5	5.4

SOURCE: USER INTERVIEWS

stories are told by terminal and peripheral users (although with slightly less emphasis).

E. FUTURE REVENUE GROWTH

- Vendors must encourage users to make use of improved service/response options (thereby expanding revenues) by offering maintenance contracts that are priced to encourage higher volume usage/shorter response options.

- Today's maintenance contracts too frequently have a pricing barrier built between single- and two-shift coverage, in the form of a significant cost increase, which users are reluctant to pay.

- Scheduling non-critical processing for periods where there is no contracted maintenance coverage, thereby avoiding extra charges, is becoming prevalent. Vendors should address this problem openly through their user associations, aiming to reduce the effect this has on revenues as much as possible.

VI SERVICE PRICING BY EQUIPMENT CATEGORY

VI SERVICE PRICING BY EQUIPMENT CATEGORY

A. MAINFRAMES

- Mainframe purchase prices in Western Europe are about 35% higher than the same equipment in the U.S. but this does not stop maintenance charges being higher (as a percent of purchase price as well as in absolute terms) than those practised in the U.S., as shown in Exhibit VI-1.

- The data for Exhibit VI-1 and VI-2 was provided by end users and represents:

  - Typical configuration prices of the systems selected (i.e., inclusive of memory, peripheral communications equipment, terminals, and software).

  - Maintenance charges for 24-hour coverage of the given configurations.

- This weights the maintenance charge towards the high end of the spectrum, since peripheral and terminal maintenance charges are far higher than central system charges.

- Large mainframe annual maintenance charges range from 4.8% to 7.8% of the configuration purchase price, while medium mainframe charges have a far broader scale (3.6% to 16.0%), as shown in Exhibit VI-2. This is because many medium mainframes installed in Europe are reaching the end of their useful

EXHIBIT VI-1

MAINTENANCE PRICING OF
SELECTED LARGE MAINFRAMES, 1981

VENDOR	MODEL	TYPICAL PURCHASE PRICE ($thousands)	ANNUAL MAINTENANCE CHARGE ($thousands)	MAINTENANCE AS PERCENT OF PURCHASE PRICE
Amdahl	V/7	$2,700	$175.5	6.5%
CDC	Cyber 730	2,670	192.2	7.2
IBM	3031A/P	1,080	64.8	6.0
	3033	5,400	259.2	4.8
ICL	2960/10	1,530	75.6	4.9
	2980	6,300	359.8	5.7
Univac	1100/22	1,800	140.4	7.8
Overall Average	—	$3,069	$181.1	5.9%

SOURCE: USER INTERVIEWS

EXHIBIT VI-2

MAINTENANCE PRICING OF
SELECTED MEDIUM MAINFRAMES, 1981

VENDOR	MODEL	TYPICAL PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	MAINTENANCE AS PERCENT OF PURCHASE PRICE
Burroughs	4700	$540,000	$59,400	11.0%
DEC	PDP 11/70	270,000	27,000	10.0
	VAX 11/750	360,000	45,360	12.6
Datapoint	ARC System	270,000	21,600	8.0
Honeywell	L64	900,000	43,200	4.8
	2050	666,000	81,432	12.2
IBM	4341	306,000	18,500	6.0
	370/145	900,000	32,400	3.6
ICL	1904S	216,000	34,560	16.0
	2950/10	900,000	43,200	4.8
Prime	750	875,000	42,900	4.9
National Advanced Systems	A/S 5	360,000	32,400	9.0
NCR	V8555	540,000	54,000	10.0
Univac	90/40	630,000	53,500	8.5

SOURCE: USER INTERVIEWS

life and maintenance charges have risen in relation to their age (e.g., ICL 1904, Honeywell 2050).

- Excluding this older equipment, the range is far narrower, and for market leaders such as IBM 4341 and DEC 11/70, the range is 6% to 10%.

- There may be some surprise at the inclusion of the Datapoint ARC system. The system quoted is a ring of five processors, doing a medium mainframe job (at medium mainframe prices). There are three minicomputer-based products in this year's medium mainframe line-up (1981), and the number of minicomputers competing in this category will increase steadily with time.

B. SMALL BUSINESS SYSTEMS AND MINICOMPUTERS

- It is virtually impossible to distinguish between the small business system and the minicomputer when used in a business application environment. As time passes, the technical, performance, and software characteristics of both will merge. The minicomputer still retains, as a separate market, its original scientific/real time application environment, but even in this area it is increasingly being displaced by microcomputers.

- From a purchase price standpoint, typical configurations range from $50,000 to $160,000, as shown in Exhibit VI-3. These prices usually represent a single machine with expansion; memory upgrades and peripheral extensions can carry the full system up to $250,000.

- Maintenance pricing is in the 7% to 12% range typically, with some exceptions (again frequently older systems such as the Data General Nova or ICL 2903).

EXHIBIT VI-3

MAINTENANCE PRICING OF SELECTED SMALL BUSINESS COMPUTERS AND MINICOMPUTERS, 1981

VENDOR	MODEL	TYPICAL PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	MAINTENANCE AS PERCENT OF PURCHASE PRICE
Burroughs	B80	$54,000	$7,560	14.0%
Data General	3/130	54,800	6,631	12.1
	Nova	54,900	8,316	15.1
Datapoint	6600	98,500	10,830	11.0
DEC	PDP 11/34	63,000	6,048	9.6
Honeywell	DPS 4	153,000	21,600	14.1
ICL	2903	162,000	26,500	16.4
	ME29	129,000	8,980	7.0
NCR	8250	43,200	4,275	9.9
Systime	5000	126,000	8,640	6.9

SOURCE: USER INTERVIEWS

- Pricing that exceeds 12% usually creates user resistance and discontent, particularly since users are increasingly aware of how much competitive systems' service costs.

- Once again, the data used in Exhibit VI-3 came from the users and concern typical configurations of the selected systems. This may have weighted the maintenance charges towards the high end of the price spectrum.

C. PERIPHERALS

- The source of the data used in Exhibit VI-4 was the vendors and, since in each case a single device is quoted, a precise maintenance value can be given.

- A variety of devices were chosen (disks, tapes, printers) to show how broadly the spectrum of maintenance costs extends (12% to 23.5%). With the exception of the Systems Industries Disks, all other devices have service charges ranging from 15.6% to 23.5%.

- The prices shown are for single units. Prices can be discounted by as much as 35%, depending on volume purchased, competition, or simply how desperate a vendor is for making a quota or closing out his year end sale's bookings.

- The maintenance costs, as a percent of purchase price, then soar. For example, a fairly normal 15% becomes 24%. Fortunately such costs are not normally apparent to users who see peripheral maintenance costs as part of the overall configuration maintenance cost.

- However, the maintenance service currently provided by peripheral vendors is on a par with the small business systems and minicomputers they are mainly associated with, so that users are not overly critical of peripheral maintenance costs.

EXHIBIT VI-4

MAINTENANCE PRICING
OF SELECTED PERIPHERALS, 1981

VENDOR	MODEL	PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	MAINTENANCE AS PERCENT OF PURCHASE PRICE
CDC	Disk 9762	$11,070	$2,052	18.5%
	Disk 9766	19,080	3,024	15.8
Dataproducts	Printer M200	4,149	648	15.6
	Printer B300	6,593	1,512	22.9
	Printer B600	8,703	1,944	22.3
Kennedy	Tape 9700-1	4,500	864	19.2
	Tape 9700-3	5,400	864	16.0
System Industries	Disk 9400-62	17,024	2,484	14.6
	Disk 9400-66	28,818	3,456	12.0
Printronics	Printer P300	6,930	1,512	21.8
	Printer P600	8,280	1,944	23.5

NOTE: PURCHASE PRICES ARE FOR SINGLE UNITS; OEM DISCOUNTS AFFECT PRICES UP TO A DISCOUNT OF 35%.
SOURCE: VENDOR INTERVIEWS

- Printer vendors should nevertheless realise that their 22% maintenance charges (in reality 34% at full purchase discount) are perceived by purchasers as being excessive, and will probably hinder sales of the product.

D. WORD PROCESSORS

- Word processor vendors have, according to users, a bad record of response time, even though repair is quickly effected once an engineer is on site. This small criticism apart, word processing vendors have maintained good maintenance coverage in the face of a rapid expansion of the user base.

- Word processors have gained rapid acceptance in Europe and the single line display, magnetic card/cassette devices have been rapidly displaced by full page screen, floppy disk base systems.

- Multiple keyboard systems have led to an expansion of on-line disk storage, and many vendors have begun offering combined WP/EDP systems. This has tended not only to increase the sales price of the individual systems dramatically, but also to increase the maintenance charges as a percent of this increased purchase price.

- Normally word processing systems are sold into an administrative rather than an EDP environment. Selling such integrated WP/EDP systems therefore creates a problem, since two separate organizational divisions must approve the purchase of a single product.

- As a means of increasing maintenance revenue, the move towards WP/EDP integration is an excellent one, implying as it does an increase of the purchase price and an increase of maintenance revenues, as shown in Exhibit VI-5.

EXHIBIT VI-5

MAINTENANCE PRICING OF
SELECTED WORD PROCESSORS, 1981

VENDOR	MODEL	PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	MAINTENANCE AS PERCENT OF PURCHASE PRICE
Burroughs	RE 2116	$16,110	$1,782	11.1%
AM Jacquard	J500*	19,800	1,980	10.0
	Jacquard 100*	27,000	2,835	10.5
AES Data	Alpha Plus	7,155	900	12.6
Wang	Wangwriter	7,191	990	13.8
	System 5-(iii)	16,200	1,980	12.2
	WP-25*	27,000	3,654	13.5
Xerox	800	6,660	1,080	16.2
	850 DTS	9,900	1,404	14.2
	860*	15,750	2,160	13.7

*COMBINED WORD PROCESSING/DATA PROCESSING SYSTEMS, WITH OPTIONAL TELEX CUTTERS
SOURCE: VENDOR INTERVIEWS

E. TERMINALS

- Terminals have the worst repair time of any category of equipment and are frequently fragile in operation. They also have relatively high maintenance costs, as shown in Exhibit VI-6.

- Nevertheless users' complaints are few. This is because most systems have multiple terminals and the loss of a single device due to failure is not a system-critical event.

- Many vendors operate a device swapping policy rather than attempt repair on-site. Others leave redundant devices on-site as backup in case of unit failure.

- The relatively high maintenance costs shown in Exhibit VI-6 are understated by the discount that normally applies to the unit purchase prices shown. In this way the maintenance cost range of 15% to 20% shown is, in reality more often 24% to 34% of the effective purchase price.

EXHIBIT VI-6

MAINTENANCE PRICING OF
SELECTED TERMINALS, 1981

VENDOR	MODEL	PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	MAINTENANCE AS PERCENT OF PURCHASE PRICE
DEC	VT100	$1,890	$288	15.2%
	VT132	2,385	342	14.3
Hazeltine	1410	855	162	18.9
	1420	927	162	17.5
	1520	1,890	225	11.9
Newbury	7000	891	202	22.7
	7002	1,006	202	20.1
	7009	1,431	216	15.1
Lear Siegler	ADM31	1,377	245	17.8
	ADM42	1,935	390	20.2
Texas Instruments	743 KSR	1,989	356	17.9
	765	3,951	475	12.0

NOTE: PURCHASE PRICES ARE FOR SINGLE UNITS, AND SUBJECT TO LARGE DISCOUNTS
SOURCE: VENDOR INTERVIEWS

VII PRICING - THE U.S. MARKET PLACE

VII PRICING - THE U.S. MARKET PLACE

A. THE U.S. INFLUENCE

- Due to the domination of U.S. parented organisations in Europe, the market place in the U.S. affects and colours the European scene. An understanding of the U.S. market helps to explain some of the requirements corporate operations place on European subsidaries and the resulting effect on the total European market place.

B. SOURCE OF REVENUE IN U.S.

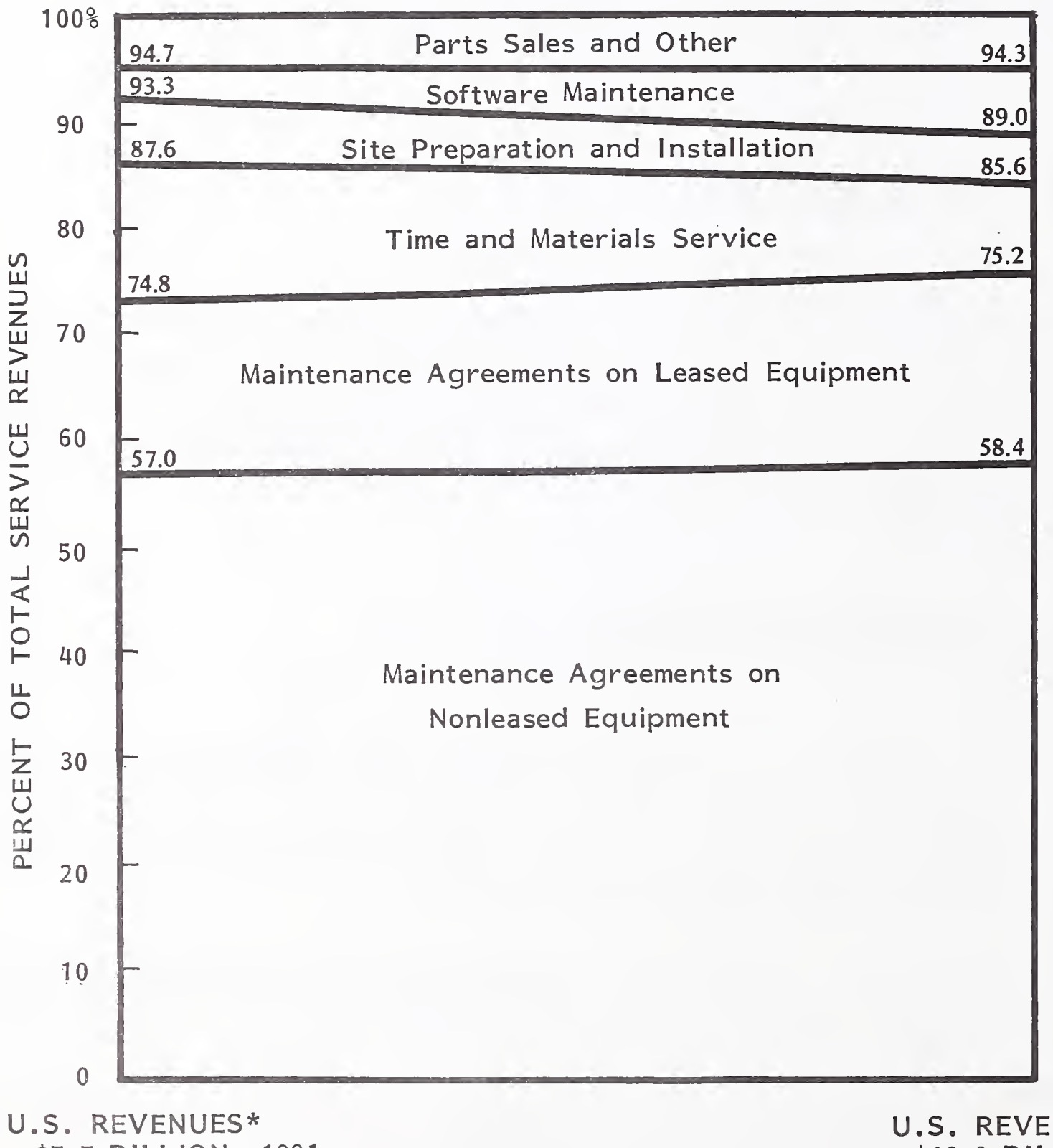
- In a recent study in the U.S. of 29 major vendors, only software maintenance showed any dramatic movement, reflecting the fact that rapid shifts in revenue rarely occur in field service. Exhibit VII-1 illustrates this fact as the vendors predict little shifting in revenue base.

- However the overall growth in field service revenues is forecasted to be very dynamic, as shown in Exhibit VII-2.

  - Respondents reported an average annual growth of over 30%, and expect this rate to continue through 1985.

EXHIBIT VII-1

U.S. VENDORS' CURRENT AND FORECASTED DISTRIBUTION OF REVENUE BY TYPE OF SERVICE



*INPUT FORECAST PER 1981 FIELD SERVICES ANNUAL REPORT

EXHIBIT VII-2

SERVICE REVENUE GROWTH OF SELECTED U.S. COMPANIES
IN THE INFORMATION PROCESSING INDUSTRY

(percent)

RESPONDENT VENDOR	1980-1981	1981-1982	AVERAGE ANNUAL GROWTH RATE 1982-1985
All Respondents	31.2%	31.9%	32.6%
Computers	27.9	29.1	29.1
Peripherals / Terminals	25.2	25.8	25.1
Word Processors	38.8	39.3	34.8
Others	41.7	41.7	59.0

NUMBER OF RESPONDENTS: 29
AVERAGES ARE NOT WEIGHTED

- INPUT estimates that the respondent sample is growing one third faster than the 20% rate for the total industry because the respondents did not include all the large established mainframe vendors who have a large market share, and are growing at a slower rate.

- On average, U.S. respondents expected the rate of growth to accelerate slightly through the period, with word processors expecting a slight decline from a high current rate, and others (CAD/CAM, testing systems) expecting even higher growth from a high current base.

- Growth rates of hardware shipments in the U.S. tend to be between 10% and 25% in the categories shown in Exhibit VII-2. The higher field services growth rates mean that services revenues will continue to gain as a percent of total company revenues.

  - Many U.S. companies now report service revenues are 20% to 30% of total revenues; the importance of optimum pricing and packaging of services increases as the percent increases, because the impact on total company performance is greater.

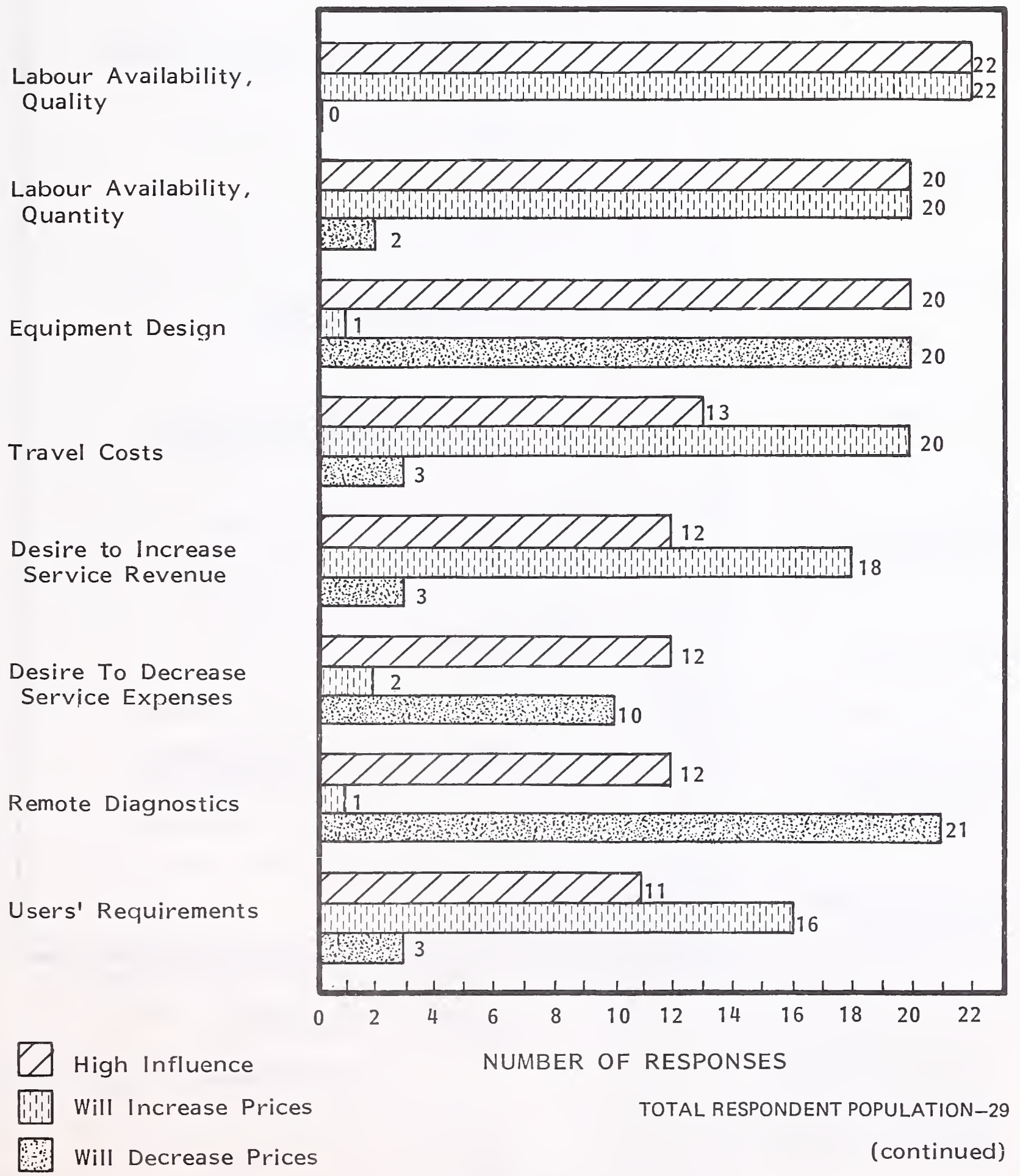
  - IBM, with U.S. revenues of $20 billion, and INPUT's estimate that 20% of IBM's revenue are from services, actually has annual U.S. services revenues of $4 billion. Small wonder that IBM has placed heavy emphasis on hardware and, with the IBM 4300 announcement, software maintenance.

C. FACTORS IMPACTING U.S. PRICES

- Exhibit VII-3 shows the rating of 44 U.S. users on factors impacting service strategies and pricing.

EXHIBIT VII-3

RATING OF FACTORS IMPACTING
U.S. SERVICE STRATEGIES AND PRICING

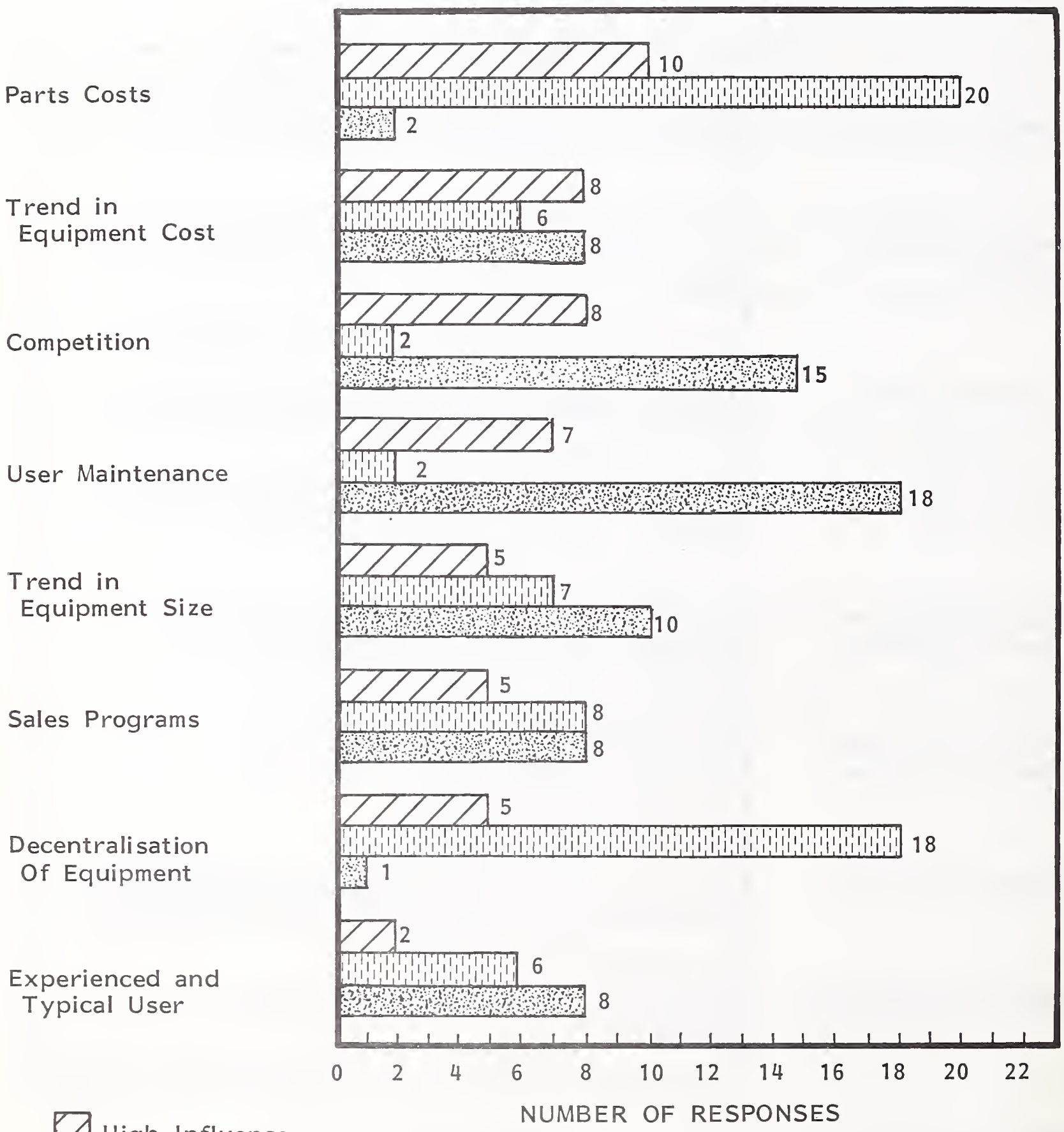


TOTAL RESPONDENT POPULATION–29

(continued)

EXHIBIT VII-3 (CONT.)

RATING OF FACTORS IMPACTING
U.S. SERVICE STRATEGIES AND PRICING



TOTAL RESPONDENT POPULATION – 29

- The availability of qualified labour was rated as having the highest influence on U.S. service strategies and pricing.

- Equipment design was the only other factor given a high influence rating on strategy.

- Part of the dilemma facing U.S. management is revealed in the fact that labour factors are expected to have an upward impact on services prices, while equipment design is expected to have a downward impact; the question of the net effect of these opposite forces is a key one.

- Although profit centre organisation has become the norm for field service in the U.S., the desire to increase service revenue and/or to decrease service expenses was a high influence factor among less than half of the respondents.

  - Field service profits still are less important to vendors than growth in hardware revenues.

  - Further complicating the pricing - selling equation is the fact that the desire to increase services revenue is expected by respondents to increase services prices, while a desire to decrease services expenses (through remote diagnostics, depot maintenance, etc.) is expected to decrease services prices.

- Aggressive sales programs still have a low rating in the strategies of U.S. vendors. Competition also has a relatively low rating, although the impact of competition is felt to be a strong downward influence on prices. The two factors are related in that many vendors evidently feel that competition is more likely to come from price cutting than from better selling.

- The hesitancy of U.S. vendors to embark on aggressive selling campaigns is reflected also in the low expected contribution from dedicated services sales groups, as shown in Exhibit VII-4.

EXHIBIT VII-4

RELATIVE AMOUNT OF NEW SERVICES REVENUE FROM ALTERNATIVE SOURCES

SOURCE OF NEW SERVICES/REVENUE	PERCENT OF TOTAL NEW REVENUES
Hardware Sales Group	28%
Service Personnel	24
User Initiated	19
Lease Equipment	19
Third Party (includes Dealers, Distributors)	5
Dedicated Sales Group in Service	5

- Vendors expect over half of new services revenues to come from either the hardware sales group or from regular services personnel.

- The current maintenance prices of selected equipment categories in the U.S. are provided in Appendix F.

D. SERVICES PRICING, ACROSS PRODUCT CATEGORIES

- Respondents were asked to describe the process by which services pricing was determined. Representive responses follow:

  - 'A quarterly review of costs, standards, competitive analysis, value additions and perceived inflation for the next 6-12 months'.

  - 'First, competitive analyses. Second, what the market will bear (based on data from the sales organisation), third, on customers. It's not based on cost at all'.

  - 'A judgement based on a review of costs, competition and volume. For new products we use a formula which includes MTBF/MTTR/ travel/labour rate/call rate and the like'.

  - 'First we cover cost and profit. Then we add marketing, a perceived value consideration. Finally we modify for competition if appropriate'.

  - 'System specifications are used to generate corporate points. Point value is multiplied by fully allocated cost per point. The dollar figure is compared to competitive rates and if extremely lopsided, adjustments could be made depending on forecasted unit population and corporate approval'.

- 'A yearly review of hours spent versus cost per hour. We also consider competition. We have price decreases, no price increases'.

- 'We look at average repair time and failure rate'.

- 'Use a maintenance pricing model that considers labour cost, inventory carry cost, new parts use, overhead, reliability factors, fraud costs, etc. We then use experiential curve modelling and competitive opportunities and pressures. This is then "fit" with marketing plans. Finally, profit objectives are considered'.

- 'What are costs? What is competition charging? How much profit is desired? What will the market bear'?

- 'Review profitability, service cost trends, and future costs. Determine improvement factors to equipment. Establish profit goals with prices generally determined accordingly'.

- 'Labour required, parts required, summed and compared to competition. Aim for 10% of sales price dependent on the other factors'.

- While the techniques for pricing vary, the elements in the pricing process group in four categories, as shown in Exhibit VII-5.

  - 'Service cost' is the dominant element, with 50% of the total mentions. It is most dominant among minicomputer manufacturers, and least dominant among peripheral/terminal vendors; the latter category undoubtedly most acutely feels competitive pressure, due to relative ease of peripheral and terminal replacement.

  - 'Competition' ranks second among all product categories, with peripheral/terminal vendors rating it highest, logically for the reason stated above.

EXHIBIT VII-5

RANKING OF FACTORS INFLUENCING U.S. SERVICE PRICING

COMPANY TYPE	FACTOR	NUMBER OF MENTIONS	PERCENT OF TOTAL
Computers	Service Cost	12	50%
	Competition	5	21
	Equipment Reliability	4	17
	Service Profit Objective	3	12
		24	100%
Minicomputers	Service Cost	14	67
	Competition	4	19
	Equipment Reliability	3	14
	Service Profit Objective	0	0
		21	100%
Peripherals/Terminals	Service Cost	19	42
	Competition	12	27
	Equipment Reliability	10	22
	Service Profit Objective	4	9
		45	100%
Word Processors	Service Cost	8	54
	Competition	3	20
	Equipment Reliability	2	13
	Service Profit Objective	2	13
		15	100%
Total	Service Cost	53	50
	Competition	23	22
	Equipment Reliability	20	19
	Service Profit Objective	9	9
		105	100%

- 'Service profit objective' is the fourth element, having received no mention at all from minicomputer vendors. To an extent 'cost' and 'profit' are related. However the dominant mention of 'cost' reflects the still incomplete transition of field service from a 'cost centre' to a 'profit centre' environment - regardless of the fact that 75% and more of today's field engineering organisations are 'profit centres' based on survey results.

- Other steps in the pricing process receiving multiple mentions were:

  . Judgement about the value - five mentions.

  . 'What the market will bear' - four mentions.

  . Percentage of equipment price - three mentions.

  . Modelling - two mentions.

- Clearly, pricing for services is an inexact process, as vendors attempt to balance a range of upward and downward pressures.

  - Factors mentioned as putting upward pressure on services pricing were:

    . Labour costs.

    . Broader service areas.

    . Broader coverages.

    . Cost of transportation.

    . Labour quality and quantity.

    . On-line testing.

  - Inflation.

- Factors mentioned as having downward pressure on service prices were:
  - Depot services.
  - Remote diagnostics.
  - Equipment design/reliability.
  - Built-in serviceability.
  - Customer involvement in service.
  - Parts depots.
  - Better diagnostics.
  - Software support in FE.
  - Central support.
  - Use of third party.
  - Competition.

- Factors mentioned with neutral effect on service prices were:
  - Dispatching techniques.
  - Remote diagnostics.
  - Better diagnostics.

- Support centre.
- Better inventory control.

- The challenge of management is to balance those factors with an eye to profits and growth.

APPENDIX A: DEFINITIONS

APPENDIX A: DEFINITIONS

- CENTRE OF EXCELLENCE: the concentration at specific locations of the most highly trained and experienced support staff for a given product, hardware or software. Used for customer support and for vendor's own field staff.

- DISTRIBUTED DATA PROCESSING: the deployment of programmable intelligence to the site where the particular data processing function is performed. Computers and terminals are interconnected through a telecommunications network adapted to individual user needs.

- ENGINEERING CHANGE NOTICE: notice of improvements or corrections in a product after it has been released to production or has been installed at the user's site.

- ENGINEERING CHANGE ORDER (ECO): instructions including bill of material and parts required to effect the engineering change.

- FIELD CHANGE ORDER (FCO): see ECO.

- FIELD ENGINEER (FE): individual who responds to a user's call for service and repairs a device or system. FE is used interchangeably with customer engineer, serviceperson, maintenance person, etc.

- FIRST-LINE MANAGER (FLM): individual at the first or lowest level of management in the field organisation, usually at the branch level.

- MEAN TIME TO RESPOND: the elapsed time between a user's service call and a field engineer's arrival at the user's location.

- MEAN TIME TO REPAIR: the elapsed time between a field engineer's arrival at the user's site and the repaired device's return to full operation.

- MEAN TIME BETWEEN FAILURES (MTBF): the elapsed time between reported failures on a device or system.

- REMOTE ASSISTANCE: techniques such as remote preventive maintenance, remote diagnostics, remote error reporting, and remote technical assistance.

- REMOTE DIAGNOSTICS (RD): diagnostics run by the vendor from a remote location without the intervention of the user's operator; diagnostics run by an on-site field engineer tied to a central support center, or by a user tied to a central support center. It can usually isolate a fault to the lowest exchangeable units. Also termed telediagnostics.

- REMOTE SUPPORT: sometimes used by some vendors as a term to describe full system diagnosis (i.e., hardware and software) as opposed to remote diagnostics used for hardware only.

- REMOTE TECHNICAL ASSISTANCE: the provision of symptom matching, to in-field engineers through a telephone network. This is usually a dial-in service to a computerised database of known errors matched with the symptoms they produce.

- SYSTEM SUPPORT CENTER (SSC): a central technical support facility staffed by highly skilled field engineers and accessed over a national hotline number. A system support center is available to both users and field engineers for the analysis of problems in hardware, software, or a combination of the two.

- USER SELF-MAINTENANCE (USM): some involvement by individual users in the installation, diagnosis, and repair of their own installed equipment.

APPENDIX B: VENDOR QUESTIONNAIRE

APPENDIX B: VENDOR QUESTIONNAIRE

1. What are your service revenue growth and profit objectives?

	GROWTH	PROFIT
1980-1981	_____%	_____%
1981-1982	_____%	_____%
1982-1985	_____% (per year)	_____% (per year)

2. What is the distribution of service revenue?

		1981	1985
a.	Maintenance of customer owned equipment under maintenance agreement	_____%	_____%
b.	Maintenance of equipment leased to customers by your company	_____%	_____%
c.	Time and materials service (work done on hourly basis - no contract)	_____%	_____%
d.	Site preparation/installation/relocation of equipment/equipment removal	_____%	_____%
e.	Software maintenance	_____%	_____%
f.	Sales of parts and supplies not included above	_____%	_____%
g.	Other, please describe		
_____		_____	_____
_____		_____	_____
_____		_____	_____
		100%	100%

3. Describe the principal steps in the service pricing process.

4. If a pricing "model" is used please describe the elements of the model and how accurately it has forecasted prices and profits.

5.a. Who in your organisation has final authority to set service prices?

5.b. What is the role of the field engineering manager?

5.c. What is the role of the country manager?

5.d. What role does marketing management play?

_____

_____

_____

5.e. What role does corporate management play?

_____

_____

_____

6. Competition naturally affects the pricing of all products. How much do competitor's prices affect your actual service prices? Please check the statement below that most accurately describes how competitor's pricing affects your prices.

_____

_____

_____

6.a. Competitor's prices have no affect on prices.

6.b. Prices determined by pricing process are usually wtihin 10% of competitor's.

6.c. Prices are adjusted upward to match competitor's.

6.d. Prices are adjusted downward to match competitor's.

6.e. Prices are set to match competitor's regardless of cost.

7. How much will the gross profit margin be adjusted downwards to match competition's prices?

_____%

8.a. What affect does IBM service pricing have on service pricing in your industry?

_____

_____

_____

8.b. How does IBM service pricing affect your service prices?

_____

_____

_____

9. What is the price of having a service technician resident at a customer's location?

a. Per 8 hour shift Monday through Friday daytime _____ per person

b. Per 8 hour shift Monday through Friday evening _____ per person

c. Per 8 hour shift Monday through Friday night _____ per person

d. Per 8 hour shift Saturday, Sunday, Holiday _____ per person

10. What is the price of on-call service coverage for periods other than the usual business day, Monday through Friday? Please express as a % of the basic Monday through Friday rate.

MONDAY THROUGH FRIDAY

a. 5 p.m. - 12 a.m. _____%

b. 12 a.m. - 8 a.m. _____%

SATURDAY, SUNDAY, HOLIDAY

c. 8 a.m. - 5 p.m. _____%

d. 5 p.m. - 12 a.m. _____%

e. 12 a.m. - 8 a.m. _____%

11. What additional charge is made for the performance of preventive maintenance other than during normal business hours?

_____

_____

_____

12. What is the standard response time objective?

_____ hours

12.a. What other response times are available and what is the charge for each?

RESPONSE	CHARGE
_____	_____
_____	_____
_____	_____

13. What is the charge for installing equipment?

13.a. Fixed fee published in service pricing manuals?

13.b. Individually quoted, how is price determined?

_____

_____

_____

14. How is the customer charged for the relocation of equipment?

How is the charge determined?

_____

_____

_____

15. If a user purchases a spare parts supply how is his service price affected?

_____

_____

_____

15.a. What is the monetary relationship between the value of the spares and the reduction in service price?

15.b. How is the repair of customer-owned items handled? Who pays for the repair?

16. In what way can a user reduce service costs by participating in the diagnosis and repair of his equipment?

16.a. Is there a formal program for "user assisted service?" Please explain.

17. How is the installation of field change orders priced?

18. What services are offered that could be considered unique?

18.a. How are these services priced?

19. What process is used to determine the feasibility and pricing of non-standard services requested by a user?

19.a. Please describe any non-standard services performed.

20. Users often request custom support for specific situations, please briefly describe any custom support services offered including the pricing process used.

21. Who has authorisation to approve special support services?

22.a. Do you ever reduce your service prices and why?

22.b. What occurence or set of occurences will cause the maintenance rate for a specific piece of equipment to be reduced?

23.a. When are maintenance price changes implemented?

23.b. How is a price change communicated to existing customers?

23.c. Based on previous price increases, what do you believe the user's sensitivities are on service prices?

23.d. In the past has the service offered been reduced rather than increasing the price? Please explain.

24. How have the desires, needs and expectations of equipment users influenced service programs and prices offered by your company?

25. Who performs software maintenance in your company?

26. Describe the principal steps in the software maintenance pricing process.

27. How is the value to the user of software maintenance determined and marketed?

28. Who in your organisation has final authority to set software maintenance prices?

28.a. What is the role of the field engineering manager?

28.b. What is the role of the country manager?

_____

_____

_____

28.c. What is the role of marketing management?

_____

_____

_____

28.d. What is the role of corporate management?

_____

_____

_____

29. How do you expect the profit margin from software maintenance to compare to the profit margin from hardware maintenance?

HIGHER _____ HOW MUCH _____

LOWER _____ HOW MUCH _____

SAME _____

APPENDIX C: RELATED INPUT REPORTS

APPENDIX C: RELATED INPUT REPORTS

- A Comparison of International Field Service Activities
  INPUT, Ltd, London, December 1980

- 1981 Field Service Annual Report
  INPUT, Ltd., London, September 1981

- User's Perception of Critical Maintenance
  INPUT, Palo Alto, California, June 1981

- Pricing, Packaging, and Selling Field Services (U.S.A.)
  INPUT, Palo Alto, California, August 1981

APPENDIX D: USER INTERVIEWS BY EQUIPMENT CATEGORY

APPENDIX D: USER INTERVIEWS BY EQUIPMENT CATEGORY

User Interviews	
• Large mainframe	28
• Medium mainframe	73
• Small business system	39
• Minicomputer	43
• Terminals	68
• Peripherals	55
• Word Processors	23
• Vendor interviews	17
• Pricing interviews (vendor)	28

APPENDIX E: MAINTENANCE SERVICE PRICING OF SELECTED U.S. EQUIPMENT CATEGORIES

EXHIBIT E-1

MAINTENANCE PRICING OF SELECTED LARGE MAINFRAMES IN THE U.S.

VENDOR	MODEL	YEAR INTRODUCED	TYPICAL PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	ANNUAL MAINTENANCE AS A PERCENT OF PURCHASE PRICE
Amdahl	470 V/8	1979	$2,175,000	$129,000	5.9%*
Control Data Corporation	Cyber 176	1976	4,805,460	175,800	3.7
Honeywell Information Systems	68/80	1975	4,704,320	96,552	2.1
International Business Machines	3033 A24	1978	3,061,500	116,520	3.8
	370 168	1973	2,633,000	73,680	2.8
Average	-	-	$3,787,000	$118,000	3.1%

*MAINTENANCE INCLUDED 24 HOURS/DAY 7 DAYS/WEEK

EXHIBIT E-2

MAINTENANCE PRICING OF SELECTED MEDIUM MAINFRAMES IN THE U.S.

VENDOR	MODEL	YEAR INTRODUCED	TYPICAL PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	ANNUAL MAINTENANCE AS A PERCENT OF PURCHASE PRICE
Burroughs Corporation	B1985-1	1979	$125,840	$5,160	4.1%
Control Data Corporation	Cyber 720	1979	460,950	18,912	4.1
Digital Equipment Corporation	DEC System 20 Model 2060	1979	431,000	25,884	6.0
Honeywell Information Systems	Level 66	1975	957,215	44,220	4.6
International Business Machines	IBM 4341	1979	416,400	10,164	2.4
	370/138	1976	247,900	16,020	6.5
	370/148	1977	488,750	28,860	5.9
Univac	1100/61 CI	1980	318,975	13,800	4.3
	1100/61 HI	1980	657,040	21,000	3.2

EXHIBIT E-3

MAINTENANCE PRICING OF SELECTED SMALL BUSINESS COMPUTERS AND MINICOMPUTERS IN THE U.S.

VENDOR	MODEL	YEAR INTRODUCED	TYPICAL PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	ANNUAL MAINTENANCE AS A PERCENT OF PURCHASE PRICE
Basic Four	System 410	1978	$32,500	$3,360	10.3%
BTI Computers	5000/ES	1979	29,950	4,140	13.8
Burroughs Corporation	B801	1977	35,045	2,376	6.8
Data General Corporation	CS/40 MOD C3	1977	34,105	3,180	9.3
	CS/70 MOD C5	1980	53,050	4,380	8.3
Digital Equipment Corporation	Datasystem 355	1978	33,000	2,556	7.7
Hewlett Packard	HP 250	1978	17,000	1,080	6.4
	HP 3000 Series 30	1979	49,750	4,320	8.7
Honeywell Information Systems	Level 6 Model 23	1978	4,800	624	13.0
	Level 6 Model 57	1978	46,975	4,008	8.5
International Business Machines	IBM 5110	1978	8,475	540	6.4
	IBM System 34	1979	34,700	2,880	8.3
Microdata Corporation	Reality 8000	1979	84,975	6,960	8.2
NCR Corporation	NCR 8250	1975	29,500	3,000	10.2
Prime	Prime 750	1979	149,000	9,420	6.3
Texas Instruments	TI DS 990 MOD 2	1979	12,995	1,716	13.2
Wang Laboratories	2200 VP	1978	8,000	540	6.8

EXHIBIT E-4

MAINTENANCE PRICING OF SELECTED VENDORS OF PERIPHERALS IN THE U.S.

VENDOR	MODEL	TYPICAL PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	ANNUAL MAINTENANCE AS PERCENT OF PURCHASE PRICE
Burroughs Corporation	Printer B 9247-15	$58,400	$5,640	9.7%
	Disk B 9373-20	95,760	3,480	3.6
Control Data Corporation	Printer 580-200	91,956	7,548	8.2
	Disk 819-11	53,500	2,580	4.8
Honeywell Information Systems	Printer PRV 1600	64,940	6,456	9.9
	Disk MSU 0390	34,500	2,160	6.3
International Business Machines	Printer 3262-B1	16.200	1,728	10.7
	Printer 1403	40,040	5,940	14.8
	Printer 3262-1	16,200	1,728	10.7
	Disk 3350 A2	40,000	2,040	5.1
	Disk 3370 A1	40,600	1,512	3.7
Univac	Printer 0770-04	86,686	5,736	6.6
	Printer 0776-00	41,400	2,628	6.3
	Disk 8418-94	19,872	1,200	6.0
	Disk 8450-97	74,600	3,000	4.0
	Disk 8470-97	38,400	1,440	3.8

EXHIBIT E-5

MAINTENANCE PRICING OF SELECTED VENDORS OF TERMINALS IN THE U.S.

VENDOR	MODEL	TYPICAL PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	ANNUAL MAINTENANCE AS PERCENT OF PURCHASE PRICE
Burroughs Corporation	CRT TD 838	$2,957	$275	9.3%
	CRT TD 734	2,865	317	11.1
Control Data Corporation	CRT 714-30	10,108	840	8.3
	CRT 714-40	5,361	564	10.5
Honeywell Information Systems	CRT VIP 7100	1,500	276	18.4
	CRT VIP 7805	3,360	468	13.9
International Business Machines	CRT 5251 Model 12	4,050	468	11.6
	CRT 3278 Model 2A	2,680	294	11.0
	CRT 3279 Model 2C	4,355	474	10.9
Univac	CRT 3536-89	3,175	612	19.3
	CRT 3542-99	4,252	612	14.4

EXHIBIT E-6

MAINTENANCE PRICING OF SELECTED VENDORS OF WORD PROCESSING SYSTEMS IN THE U.S.

VENDOR	MODEL	YEAR INTRODUCED	TYPICAL PURCHASE PRICE	ANNUAL MAINTENANCE CHARGE	ANNUAL MAINTENANCE AS A PERCENT OF PURCHASE PRICE
A.B. Dick Company	Magna SL	1979	$14,500	$1,425	9.8%
AM Jacquard Systems	Amtext 425	1976	14,500	972	6.7
Basic Four	Dataword II	1977	25,000	3,120	12.5
CPT Corporation	CPT 8000	1977	14,990	1,696	11.3
Digital Equipment Corporation	DEC WS 80 WD 80	1978	20,600	2,280	11.1
Four-Phase Systems	OMS/IV	1980	57,600	7,200	12.5
International Business Machines	IBM 5520 Model 20	1980	30,186	1,872	6.2
Lanier Business Products	No Problem LC	1977	18,400	1,128	6.1
Lexitron Corporation	913 Text Editor	1977	7,500	924	12.3
	Raytext System	1980	38,000	4,344	13.0
NBI Incorporated	System 3000	1979	17,900	1,320	7.4
VYDEC/Exxon Information Systems	VYDEC 2000	1980	9,900	780	7.9
Wang Laboratories	System 5 Model III	1978	13,900	1,008	7.3
	System 115	1980	15,400	1,584	10.3
Xerox	800 Model 126	1974	5,500	816	14.8
	860	1979	10,550	1,044	9.9

PRICING OF FIELD SERVICES

ABSTRACT

Many elements go into the pricing of field service. This report, part of INPUT's European Field Service Programme, reviews the various techniques and thinking on the whole question of field service pricing.

In 1981 over $4 billion was spent on EDP hardware maintenance in Western Europe, and price setting in an increasingly complex and competitive market is a major concern to all vendors.

This major issue report examines leading vendors' practices, methods, problems, and expectations in field service prices.

The price of special services, with special attention to pricing authority, customised programmes, and on-call coverage after hours is included, along with many of the other related activities of field service organisations.

Users' reactions, interest, and sensitivity are assessed, as are reported price increases in the past 12 months and acceptable price increases for the future.

The influence of the U.S. marketplace on European pricing is evaluated, with a review of current pricing practices in the U.S.

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