

INDUSTRY REPORT FROM INPUT

INPUT LIBRARY

COMPUTER SERVICES MARKETS
IN THE SERVICES INDUSTRIES

PART I - ACCOUNTANTS,
LAWYERS AND CONSULTANTS

INPUT

701 WELCH ROAD, SUITE 1119, PALO ALTO, CALIFORNIA, 94304 (415) 854-3422

M-1976

PRO-
PRD

M-1976
PR6



Industry Report

#2

COMPUTER SERVICES MARKETS IN
THE SERVICES INDUSTRIES

PART I, ACCOUNTANTS
LAWYERS AND CONSULTANTS

August/1976

INPUT

**701 Welch Road
Suite 1119
Palo Alto, Ca. 94304
(415) 854-3422**



COMPUTER SERVICES MARKETS IN
THE SERVICES INDUSTRIES -

PART I, ACCOUNTANTS
LAWYERS AND CONSULTANTS

TABLE OF CONTENTS

	<u>Page</u>
I INTRODUCTION.....	1
II MANAGEMENT SUMMARY.....	3
III INDUSTRY STRUCTURE.....	6
A. COMPOSITION	6
B. STRUCTURE OF THE INDUSTRY	6
C. GEOGRAPHIC DISTRIBUTION	11
D. INDUSTRY REVENUES	14
IV USE OF EDP.....	17
A. THE SPECIAL NATURE OF PROFESSIONALS	17
B. IN-HOUSE COMPUTER USE	18
1. CPAs	18
2. Lawyers	20
3. Business Consultants	23
C. EXPENDITURES ON EDP	26
D. FUNCTIONAL USE OF EDP	29
V APPLICATIONS ANALYSIS.....	31
A. INTRODUCTION	31
B. INTERNAL APPLICATIONS	32
C. EXTERNAL APPLICATIONS	33
1. CPAs	35
2. Lawyers	38
3. Business Consultants	41
VI COMPUTER SERVICES MARKETS.....	43
A. AVERAGE GROWTH OF 23% EXCEEDED BY CPAs	43
1. CPAs	49
2. Lawyers	49
3. Business Consultants	51
B. GEOGRAPHIC DISTRIBUTION FOLLOWS POPULATION	51
C. SPECIALTY APPLICATIONS LEAD	52

	<u>Page</u>
VII TECHNICAL REQUIREMENTS.....	55
VIII MARKETING REQUIREMENTS.....	58
A. GENERAL	58
B. WHY USERS SELECT SERVICES	59
C. HOW USERS CHOOSE VENDORS	60
D. OTHER OBSERVATIONS	64
E. RECOMMENDATIONS AND STRATEGIES	66
IX COMPETITIVE ENVIRONMENT.....	69
A. COMPETITION IS INTENSE	69
B. COMPUTER TAX SERVICES	70
C. IBM ASSAULTS THE PROFESSIONAL MARKET WITH SYSTEM/32	72
D. SERVICES COMPETITORS IN THE SPECIALTY MARKETS	74
1. Vendors to CPAs and Business Consultants	74
2. Attorneys/Lawyers	76
APPENDIX A - DATA BASE.....	80
APPENDIX B - DEFINITIONS.....	86
APPENDIX C - QUESTIONNAIRES.....	91

COMPUTER SERVICES MARKETS IN
THE SERVICES INDUSTRIES -

PART I, ACCOUNTANTS
LAWYERS AND CONSULTANTS

LIST OF EXHIBITS

	<u>Page</u>
I-1 INTERVIEW PROGRAM	2
III-1 SIC CODES FOR SELECTED PROFESSIONALS	7
2 DEFINITIONS OF SIZE CATEGORIES	8
3 SIZE DISTRIBUTION OF SELECTED PROFESSIONALS	9
4 THE BIG 8 ACCOUNTING FIRMS	10
5 ORGANIZATIONS OF LEGAL SERVICES IN THE U.S.	12
6 GEOGRAPHIC DISTRIBUTION OF SELECTED PROFESSIONAL SERVICES	13
7 ESTIMATED REVENUES OF SELECTED PROFESSIONAL GROUPS	15
8 REVENUE SOURCES OF BIG 8 ACCOUNTING FIRMS	16
IV-1 USE OF COMPUTERS AND SERVICES BY CPAs	19
2 COMPUTERS REPORTED BY BIG 8 CPA HEADQUARTERS	21
3 PERCENT OF INTERVIEWED LAW FIRMS USING EDP, BY FIRM SIZE	22
4 IN-HOUSE COMPUTERS REPORTED BY LAW FIRMS	24
5 PERCENT OF INTERVIEWED CONSULTING FIRMS USING EDP, BY FIRM SIZE	25
6 EDP EXPENDITURES BY SELECTED PROFESSIONALS	27
7 DISTRIBUTION OF TOTAL EDP EXPENDITURES IN 1976 BY FUNCTIONAL APPLICATION	30
V-1 CLIENT RELATED EDP APPLICATIONS OF SELECTED PROFESSIONALS	34
2 NATURE OF EDP USAGE BY CPAs IN CALIFORNIA	36
3 GENERALIZED AUDIT PACKAGES DEVELOPED BY BIG 8 CPAs	37
4 TAX RETURNS PREPARED IN 1974	39
5 EDP APPLICATIONS MENTIONED BY CONSULTANTS USING EDP	42
VI-1a COMPUTER SERVICES EXPENDITURES (1976-1981) BY MAJOR SERVICE MODE (CPAs, LAWYERS, CONSULTANTS)	44
1b COMPUTER SERVICES EXPENDITURES (1976-1981) BY MAJOR SERVICE MODE (CPAs)	45
1c COMPUTER SERVICES EXPENDITURES (1976-1981) BY MAJOR SERVICE MODE (LAWYERS)	46
1d COMPUTER SERVICES EXPENDITURES (1976-1981) BY MAJOR SERVICE MODE (CONSULTANTS)	47
2 COMPUTER SERVICES EXPENDITURES BY SIZE OF FIRM (%)	48

	<u>Page</u>
VI-3 PROCESSING SERVICES EXPENDITURES BY TYPE OF SERVICE (CPAs, LAWYERS, CONSULTANTS) 1976-1981	53
4 1976 PROCESSING SERVICES EXPENDITURES BY APPLI- CATION (\$ MILLIONS)	54
VIII-1 VENDOR SELECTION FEATURE OF IMPORTANCE TO CPAs, LAWYERS, CONSULTANTS	61
2 ITEMS OF IMPORTANCE TO USERS SPECIFIED UNDER OTHER, IN EXHIBIT VIII-1	63
3 USER COMMENTS ABOUT SPECIFIC VENDORS	65
IX-1 1976 REVENUES OF MAJOR SERVICES VENDORS TO SELECTED PROFESSIONALS	71
2 SOME COMPUTER TAX SERVICES VENDORS TO CPAs	73
 APPENDIX A	
FORECAST USER EXPENDITURES FOR COMPUTER SER- VICES BY MODE OF SERVICE	81
BY TYPE OF SERVICE	82
DISTRIBUTION OF USER EXPENDITURES FOR PROCESSING SERVICES IN 1976 BY MODE AND TYPE OF SERVICE	83
FORECAST USE EXPENDITURES FOR COMPUTER SERVICES BY SIZE OF USER	84
MAP OF THE UNITED STATES	85

I. INTRODUCTION



I. INTRODUCTION

- This report is produced by INPUT as part of the Market Analysis Program (MAP).
- Research carried out for this report was based on a series of telephone interviews and contacts as specified in Exhibit I-1.
- Interviews were carried out in June, 1976.
- Prior to the research activity, each client was asked to suggest particular questions and particular areas of interest to be incorporated in the study.
- Individual client inquiries about this report are welcome.
- INPUT wishes to thank the AICPA and the California Society of CPAs for their generous support, and permission to reprint results of their membership surveys in this study.

EXHIBIT I-1

INTERVIEW PROGRAM

USERS

CPAs	9
Law Firms	29
Consulting Firms	15
<u>Total Users</u>	53

VENDORS

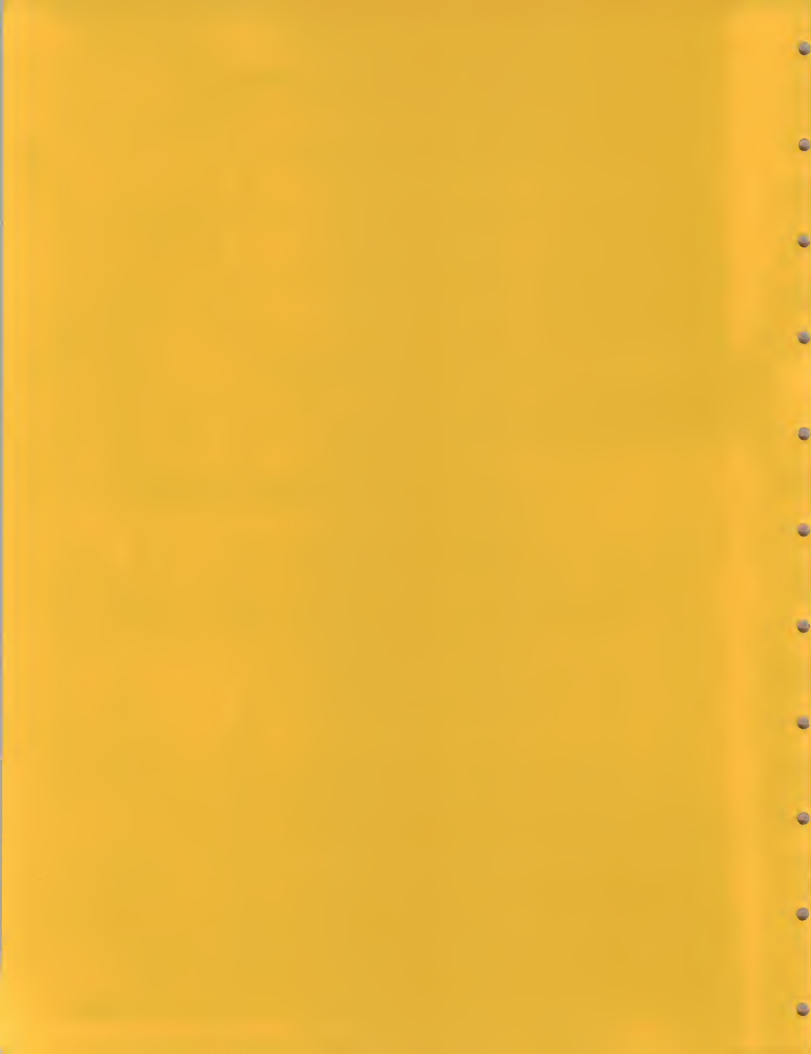
31

OTHERS

American Bar Association
American Bar Foundation
American Institute of CPAs
California Society of CPAs
Association of Data Processing Service
Organizations (ADAPSO)

II. MANAGEMENT SUMMARY

INPUT



II. MANAGEMENT SUMMARY

- The market for computer services to CPAs, lawyers, and business consultants will grow at 23% per year, increasing from \$109 million in 1976, to \$312 million in 1981.
- CPAs will account for most of this expenditure, contributing \$75 million (69%) in 1976, and \$238 million (76%) in 1981.
- There is not one definable market, in terms of products, services, or applications. The market divides dramatically among internal client related expenditures, with vastly different specialty applications for each professional group. Large and small practices also have quite different applications - particularly CPAs.
- The largest and fastest growing applications are individual, partnership, corporation and fiduciary tax return preparation for CPAs, General Ledger (GL) and financial statement preparation.
 - These activities are mostly carried out in a batch mode, by firms specializing in these activities.
- New and exciting applications include:
 - Support to CPAs for auditing clients, particularly auditing computers which are an integral part of a client's financial

controls (in-house or computer service vendor's);

- Support to law firms for document storage and retrieval as required in litigation activities;
 - Time and billing management for all professionals
 - The integration of data and word processing (WP), which is being advanced by IBM as a feature combining Mag Card .II typewriters with System 32 (S/32) computers.
- Turn-key mini-systems will offer intensive competition to CPAs and their services vendors with regard to client accounting. As small businesses begin to use IBM S/32 for client accounting, both CPAs and their service bureaus stand to lose revenues.
- Remote computing vendors should promote the concept of the S/32 as a terminal to a larger capacity, more sophisticated capability. This is especially true in word processing, as in litigation support, where perhaps 100,000 documents may have to be stored for a year.
- Tax preparation is one of the few EDP applications where batch processing is dominant, growing fastest, and not threatened by minicomputers or remote computing. The absence of time requirements, combined with low cost features and requirements to keep current with changes in tax laws make this segment virtually invulnerable.
- Remote computing firms such as Tymshare and IteL Data Services find such firms attractive for acquisition.
- A major problem in selling to CPAs and lawyers results from their General

lack of formal training in EDP applications. Thus, considerable marketing, sales, and post-installation support may be required for newer service - such as WP, litigation, audit, etc.

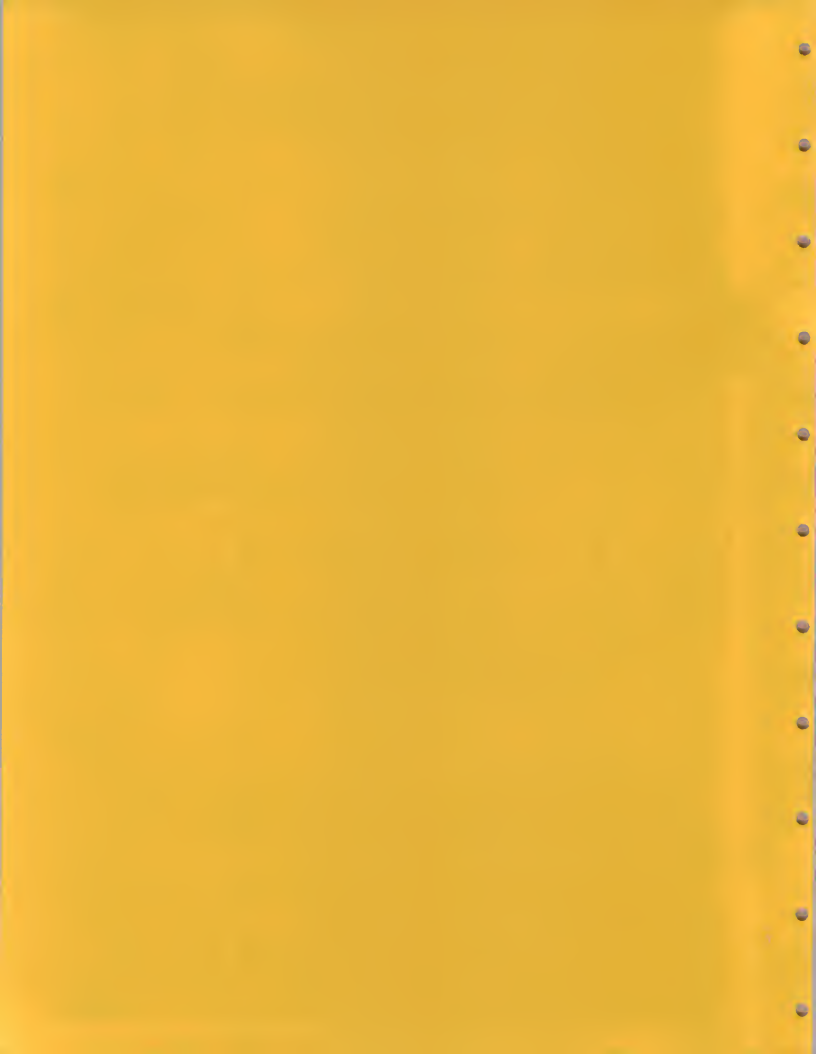
- New product development requires considerable expertise in the professional's business, and often in that of his client. Entry into new markets are best made by transferring existing capability, such as financial planning, from one professional group to another, with appropriate modifications.

- A second plan would be to acquire a firm already in the business.
- CPAs and lawyers, except for the largest firms, will not spend any money on program development, and will expect the vendor to "make it work."

- Data security, reinforced by ethical and legal responsibility of CPAs and lawyers for their clients data causes them to lean toward in-house computers rather than services vendors. Services vendors should consider establishing a procedure, in conjunction with CPA and Bar Associations, to be audited and certified as secure data facilities.

III. INDUSTRY STRUCTURE

INPUT



III. INDUSTRY STRUCTURE

A. COMPOSITION

- This study covers three major groups of professionals:
 - Lawyers
 - CPAs
 - Consultants (Business)
- The SIC codes for each group are given in Exhibit III-1.
- In order to standardize the meaning of business size throughout this Market Analysis Program (MAP), size is being defined by range of EDP expenditures, rather than by revenues or number of employees.
 - Exhibit III-2 shows the definitions of small, medium, large, and very large firms, according to annual EDP expenditures.

B. STRUCTURE OF THE INDUSTRY

- Exhibit III-3 shows the distribution by size, of the professional groups herein analyzed. A firm with multiple offices, such as a "Big 8" accounting firm, counts as 1.
- The CPA industry is dominated by the "Big 8" which are listed in Exhibit III-4, with their numbers of offices and listed clients.

Exhibit III-1

SIC Codes for Selected Professionals			
<u>Major Group</u>	<u>Group No.</u>	<u>Industry No.</u>	<u>Description</u>
73	739	7392	*Consultants
81	811	8111	Lawyers
89	893	8931	CPAs

* 7392 excludes computer related consultants (737), and professional engineers (891), who will be included in Part II of this Industry Report. Consultants in this category are oriented toward finance, management, personnel and public relations.

Exhibit III-2

Definitions of Size Categories

<u>Size</u>	<u>Annual EDP Expenditures</u>	<u>Typical Annual Revenues Range</u>	<u>Typical In-House Computer Systems</u>
Small	less than \$250K	less than \$20M	System 3; 360/30
Medium	\$250K to \$1 million	\$20M-\$100M	Single 370 Model 135 or 145
Large	\$1 million to \$5 million	\$100M-\$500M	Single or multiple 370/158
Very Large	more than \$5 million	more than \$500M	Multiple CPUs, 370/168 class

Exhibit III-3

Size Distribution of Selected Professionals

(number of firms)*

	<u>Law Firms</u>	<u>CPAs</u>	<u>Consultants</u>	<u>Total</u>
Small	78,000	35,000	23,000	136,000
Medium	5	20	20	45
Large	-0-	8	-0-	8
Very Large	-0-	-0-	-0-	-0-

* Excludes establishments without any payroll, e.g. individuals doing business alone, or without a business structure.

Exhibit III-4

The Big 8 Accounting Firms

(Data are estimates)

<u>Name</u>	<u>1976 Billings (\$ millions)</u>	<u>Number of Offices</u>	<u>Number of NYX and AMEX Clients</u>
Arthur Andersen & Co.	\$400M	40	400
Arthur Young & Co.	200	60	150
Coopers and Lybrand	250	70	250
Ernst & Ernst	350	100	300
Haskin and Sells	300	75	250
Peat, Marwick, Mitchell & Co.	450	100	350
Price Waterhouse & Co.	200	55	350
Touche Ross & Co.	<u>200</u>	<u>60</u>	<u>150</u>
TOTAL	\$2,350M	560	2,200

- There are an estimated 125,000 CPAs in the U.S., and the Big 8 firms employ about 40% of those in actual practice.
- After the top 25 CPA firms, size drops quickly. As many as 10,000 of AICPA's member firms have only 1 CPA member. Other than the Big 8, all firms covered by this report are in the 'small' size except for some 75 in the 'medium' size group.
- Law firms and CPA firms tend to be sole proprietorships and partnerships, with some organizing as "professional corporations" for tax purposes. None are public corporations. Exhibit III-5 shows how law firms are organized.
- Consultants organize in all possible ways, including corporations, such as Booz, Allen & Hamilton, Inc., Arthur D. Little, Inc., and Raymond Loewy International, Inc.

C. GEOGRAPHIC DISTRIBUTION

- Professional services tend to be distributed in accordance with city sizes and are concentrated in the major metropolitan cities. Exhibit III-6 shows the distribution of professional services by U.S. region.
- CPA firms, such as the Big 8, tend to have offices all over the country, with 50-60 offices being typical. Consulting firms tend to have fewer offices around the country, with major firms being in selected large cities. Law firms tend toward being single office entities.

Exhibit III-5

Organizations of Legal Services in the U.S.

	<u>Number (000)</u>	<u>(%)</u>
Sole proprietorships with payroll	31	21%
Partnerships	24	17
Corporations	4	3
Other, or unknown	<u>19</u>	<u>13</u>
<u>Sub-total</u>	78	54%
 Sole proprietorships without payroll	 <u>67</u>	 <u>46</u>
 <u>Total legal services</u>	 145	 100%

Exhibit III-6

Geographic Distribution of Selected Professional Services

<u>Geographic Area</u>	<u>% of Total</u>		
	<u>Consultants</u>	<u>Legal</u>	<u>CPAs</u>
Northeast (including Wash., D.C.)	23.9	24.0	21.3
North Central	19.5	20.7	18.8
Pacific States	17.1	13.6	17.3
South Central	13.3	13.8	14.7
Southeast	11.6	12.3	12.5
New England	6.2	6.7	6.3
West	4.9	4.9	5.7
Midwest	<u>3.5</u>	<u>4.0</u>	<u>3.4</u>
TOTAL	100.0 %	100.0 %	100.0 %

* See appendix for map of U.S. showing indicated areas

D. INDUSTRY REVENUES

- Actual revenues accrued by professionals are difficult to obtain, because of the private nature of their organizational forms, and their unwillingness to disclose such information. However, estimates can be made from federal government data, and miscellaneous published reports, and are shown in Exhibit III-7.

- CPA revenues include total revenues of a firm headed by one or more CPAs, who may employ one or more non-CPA accountants, bookkeepers, etc.

- The distribution of sources of Big 8 CPA revenues are shown in Exhibit III-8, and are mainly from audit work, followed by tax and financial statement preparation.

Exhibit III-7

Estimated Revenues of Selected Professional Groups

	(\$ billions)		
	<u>1976</u>	<u>1981</u>	<u>AAGR</u>
Lawyers	\$15	\$31	16%
CPAs	9	18	15%
Business Consultants	<u>14</u>	<u>21</u>	<u>8%</u>
TOTAL	\$38B	\$70B	13%

Exhibit III-8

Revenue Sources of Big 8 Accounting Firms

<u>Activity</u>	<u>Range (%)</u>
Audit	60 - 80%
Tax (including financial statements)	15 - 25%
MAS	5 - 20%
Total	100%

IV. USE OF EDP

INPUT

IV. USE OF EDP

A. THE SPECIAL NATURE OF PROFESSIONALS

- Professional services firms have some unique distinctions from most other businesses regarding EDP usage:
 - They use EDP for themselves and/or for their clients.
 - Their own internal applications differ widely from those of their clients.
 - The mode (in-house, timeshare, batch, etc) of use may be different for themselves and for their clients.
 - They may pass the EDP expenditure directly to the client (e.g., litigation support by lawyers)
 - They may use their clients' computers when performing work for their clients.
 - Their ability to perform their functions correctly may require that they have a complete understanding of their client's computer systems operations.
- Lawyers and CPAs have professional ethics committees and adopted rules which affect their use of EDP on their clients' behalf.
 - ADAPSO continues to petition the American Bar Association (ABA) to rescind its professional ethics opinion 1267 because it is discriminatory against EDP services. Opinion 1267 states "the

client should be informed in advance that an outside DP firm is to be employed for bookkeeping, accounting, data processing, or other legitimate purposes." ADAPSO points out that no such ruling applies to stenographic, investigative duplication, accounting, bookkeeping, janitorial or delivery services, indicating there is some special risk with EDP service firms.

- The AICPA Professional Standards' Ethics Rulings on the responsibilities to clients places the burden on the CPA firm: "A member (of AICPA) may utilize outside services to process tax returns. He (the member) must take all necessary precautions to be sure that the use of outside services does not result in the release of confidential information."

- As a result of their responsibility to their clients CPA firms will, in addition to assuring themselves of information security, audit the service bureau itself if the CPAs client is using the service bureau for any accounting or control functions.

- A present problem being worked on is how to 'certify' a service bureau so that it need not be audited by the CPA firm of every one of its clients for whom it is performing accounting and control processing functions.

B. IN-HOUSE COMPUTER USE

1. CPAs

- Exhibit IV-1 shows the results of surveys performed by AICPA (3,509 responses), the California Society of CPAs (103 responses), and INPUT's interviews with the Big 8.

Exhibit IV-1

Use of Computers and Services By CPAs

% Responding (each group's horizontal lines add up to 100%)

Question	AICPA			CSCPA		BIG 8		
	Yes	No	No Response	Yes	No	Yes	No	Don't Know
1. Using								
a. In-House Computer	19.2	79.4	1.4	26.2	n.a.	100.0	-0-	-0-
b. Time-Share Terminal	5.6	89.2	5.2	20.4	n.a.	87.5	-0-	12.5
c. Batch Service Bureau	46.2	49.4	4.3	72.8	n.a.	37.5	37.5	25.0
d. No EDP	n.a.	—	n.a.	6.8	—	-0-	—	—
2. Planning to Use								
a. In-House Computer	10.3	69.1	20.6	5.8	n.a.	(SEE TEXT)		
b. Time-Share Terminal	6.3	69.4	24.3	9.7	n.a.			
c. Batch Service Bureau	24.2	38.6	37.2	2.9	n.a.			
3. Planning to Discontinue								
a. In-House Computer		(NOT		1.0	n.a.	-0-	100.0	-0-
b. Time-Share Terminal		ASKED)		2.0	n.a.	-0-	87.5	12.5
c. Batch Service Bureau				5.0	n.a.	-0-	60.0	40.0

*n.a. means the number of "no" responses could not be distinguished from non-responses, therefore statistics on non-users are not available.

- The results of the surveys indicate that;
 - California CPA offices use EDP more than the U.S. average. Only 6.8% responding California CPAs use no EDP at all.
 - Big 8 firms all have at least one in-house computer per firm. The frequency of "Don't know" responses results from the autonomy of field offices in their choice of whether or not to use outside services, independent of headquarters' involvement.
- Exhibit IV-2 shows the computer configurations reported by the Big 8 firm's headquarters operations - Field offices may be using minicomputers or outside services.
 - Installations are stable, except for upgrading within the IBM line. There is no evidence of migration from one mode of processing to another, except for future interest of converting in-house systems to on-line access with internal timesharing.
- While minis have not yet made a major penetration into CPA firms, they are beginning to be used by CPA clients. As an example, IBM and Datapoint have just announced turnkey mini systems for small business client accounting (see more under Competitive Environment). This use of minis by small firms will reduce both the CPA revenue base derived from doing financial statements and other client work, as well as CPA expenditures for EDP to perform those client services.

2. Lawyers

- Exhibit IV-3 shows the results of 29 interviews with law firms of varying size.

Exhibit IV-2

Computers Reported by Big 8 CPA Headquarters

<u>Interview Number</u>	<u>Computer and Comments</u>
0	Honeywell H200 and H1050
1	IBM 360/30, upgrading to 370/135
2	Univac 9060, batch mode only
3	IBM 370/135, upgrading to 138 or 145
4	IBM 370/158
5	IBM 370/145, upgrading to 370/158
6	IBM 360/40, plus IBM S/32
7	IBM (model unknown)

Exhibit IV-3

Percent of Interviewed Law Firms Using EDP, By Firm Size

<u>Type of EDP</u>	<u>(Number of attorneys)</u>			<u>TOTAL</u>
	<u>Less than 10</u>	<u>10-50</u>	<u>Over 50</u>	
In-House Computer Only	0%	0%	83%	17%
Computer Services Only	0	13	0	3
Both	0	0	0	0
Neither	<u>100</u>	<u>87</u>	<u>17</u>	<u>80</u>
TOTAL	100%	100%	100%	100%

- 96% of firms with less than 50 attorneys reported using no EDP at all.
 - 83% of firms with more than 50 attorneys reported using EDP and had an in-house computer. Their computers are described in Exhibit IV-4, and tend to be small systems.
- While the data indicates the general truth that lawyers and law firms do not generally use EDP very much, and that only firms with over 25-50 attorneys are good candidates, other facts are relevant:
 - Law firms do not interview well. Respondents tend to be impatient and secretive; we believe this to be a result of the highly sensitive nature of the material they deal with, and the frequent need for a high level, expensive, partner in the firm to get involved in the interview in order to get all the data.
 - Law office personnel are often not acquainted with the expressions, "EDP", or "data processing", and may not include in such discussions their use of word processing equipment/services, or payroll services.

3. Business Consultants

- The median size business consulting services firm has 3 employees, and thus, most of the industry uses no EDP at all, except when required by clients. Exhibit IV-5 shows that only among the larger consulting firms is EDP used, and then it is mostly computer services.
- The computer services used were either for basic payroll, personnel, and accounting, or client related, except for one interviewed firm who was using Predicast data base via the Lockheed network.

Exhibit IV-4

In-House Computers Reported by Law Firms

<u>Interview Number</u>	<u>Number of Attorneys</u>	<u>Computer Type and Comments</u>
220	56	IBM 32
222	105+	Burroughs B700
255	80	IBM System 3/10, upgrading to S3/12
257	100+	IBM System 3/10, upgrading to S3/15
258	60	IBM System 3/10, upgrading to S3/12

Exhibit IV-5

Percent of Interviewed Consulting Firms Using EDP, By Firm Size

<u>Type of EDP</u>	<u>(Number of Employees)</u>			<u>TOTAL</u>
	<u>Less than 10</u>	<u>10-50</u>	<u>Over 50</u>	
In-House Computer Only	0%	0%	20%	15%
Computer Services Only	0	0	70	54
Both	0	0	10	8
Neither	<u>100</u>	<u>100</u>	<u>0</u>	<u>100</u>
TOTAL	100%	100%	100%	100%

- The largest interviewed firm, with over 1000 employees used only an in-house IBM 360/30.
- As with CPAs, these consultants tend to use their clients computers when/if necessary.

C. EXPENDITURES ON EDP

- While the type of EDP used by most firms varies widely according to size, with the largest leaning toward in-house computers, and the smallest toward batch payroll services, each industry segment spends a fairly stable percentage of revenues (or billings) on EDP:

- CPAs-	1.20%
- Lawyers-	0.15%
- Consultants-	0.20%

- Exhibit IV-6 summarizes EDP expenditures for 1976 based on these percentages, and forecasts in-house and services expenditures for 1977 and 1981.

- Growth in the use of in-house computers will come mostly from the smaller users who undertake mini systems to do some in-house financial and time management functions. Among the users of standard mainframe computers, growth will come from gradual expansion of capacity. There is little evidence of interest by those not now using in-house computers to switch from services, or to make any significant upward jumps quickly. One of the main "new" applications for in-house EDP is word processing, for cover letters, legal documents, proposal preparation, etc.

Exhibit IV-6

EDP Expenditures by Selected Professionals

(CPAs, Lawyers, Business Consultants)

	<u>1976</u> (\$ million)	<u>1977</u>	<u>Growth</u> (%)	<u>1981</u> (\$ M)	<u>AAGR</u> (%)
<u>In-House</u>					
CPAs	35	38.5	10	60.4	12
Lawyers	7	8.1	16	14.2	15
Consultants	<u>9</u>	<u>10.0</u>	<u>11</u>	<u>15.2</u>	<u>11</u>
Sub-Total	\$51M	\$56.6M	11%	\$89.8M	12%
<u>Services</u>					
CPAs	75	93.8	25	237.8	26
Lawyers	15	18.0	20	43.9	24
Consultants	<u>19</u>	<u>20.9</u>	<u>10</u>	<u>30.6</u>	<u>10</u>
Sub-Total	\$109M	\$132.7M	22%	\$312.3M	23%
<u>Combined</u>					
CPAs	110	132.3	20	296.6	22
Lawyers	22	26.1	19	58.1	22
Consultants	<u>28</u>	<u>30.9</u>	<u>10</u>	<u>45.8</u>	<u>10</u>
<u>TOTAL</u>	\$160M	\$189.3M	18%	\$400.5M	20%

- In services, CPA usage will grow most rapidly, and will proceed from two sources:

- At the small user end of the scale, there will be a growth due to new applications being offered to existing users of limited service. There will also be significant growth in the use by CPAs of automated individual income tax preparation by services firms such as COMPUTAX.
- At the high end of the scale, Big 8 and other firms doing significant audit work will be creating and buying software to assist in computer and service bureau auditing, to help insure the security of their clients' financial statements and annual reports. The use of timesharing is also on the rise, for calculations, data base inquiry, financial statement preparation, forecasting, and modeling. On-line word processing (WP) is also beginning to show as an important applications.

- Among law firms, the major EDP applications are on internally operated word processing (WP) machines, such as IBM Magnetic Card systems. WP is being used on-line, in conjunction with sophisticated document search and retrieval, for litigation support. This is a rapidly growing applications, which will attract new users, and see increased use by experienced users.

- Consultants' use of EDP equipment and/or services is intimately tied to their clients' needs and wishes. Recent history suggests that for this industry segment, on the average, growth will be slow and uncertain. More business forecasting, planning and modeling is being done in-house, or by the firm's CPAs, or via on-line services offered by the major Remote Computing Service (RCS) vendors' such as GE Information Services and Tymshare.

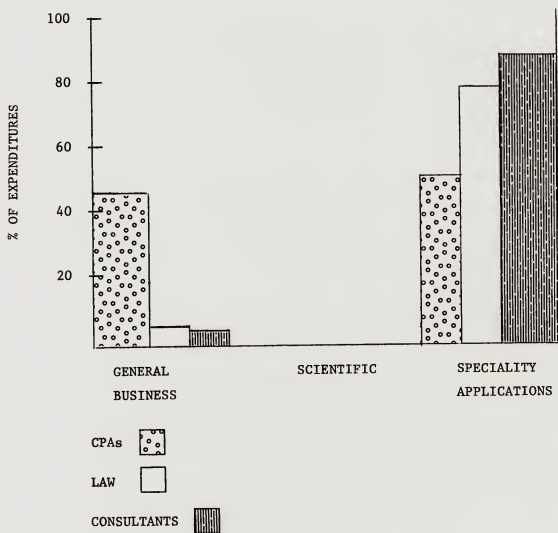
- Further details on competition and applications will follow in subsequent sections.

D. FUNCTIONAL USE OF EDP

- Among this group of professionals, most of the EDP expenditure is on behalf of clients, and is often directly billable to them. Internal use of EDP is for basic accounting, payroll, time management, and word processing. Thus, all internal applications fall under the heading of "General Business."
- Because of the business oriented nature of these professions, there is no "Scientific" applications work. Consultants who perform scientific work for their clients are included in Part II of this report under "Architects and Engineers", or "R&D."
- The remaining EDP expenditures are for "Speciality Applications," including the preparation of individual, partnership and/or corporate tax returns, searching legal records for material to support a particular litigation, or doing a long term investment payout model for a new plant.
- Exhibit IV-7 shows the distribution of EDP expenditures among these functional areas of application for 1976. Very little change in distribution will occur by 1981, as these professionals will continually adjust their EDP expenditures in accordance with their clients' needs and the potential for improvement of their ability to provide service and profits via EDP utilization.

Exhibit IV-7

Distribution of Total EDP Expenditures in 1976
by Functional Application



V. APPLICATIONS ANALYSIS



V. APPLICATIONS ANALYSIS

A. INTRODUCTION

- Applications in each group are divided among internal and external needs. Applications for internal use overlap considerably among professional categories, while applications for external use reflect the needs of the professional's clients.
- Internal applications in all professional categories are primarily financial, and management related; e.g., payroll, billing, accounts receivable, time management, etc.
- External applications reflect the expertise of the consultant, and the service he is providing. Thus, CPAs will have mainly tax and audit applications; lawyers will have mainly word processing and litigation support applications, and business consultants will use modeling, forecasting and budgeting applications.
- Expenditures for internal applications increase with the size of the firm. In general, there is a lack of EDP expenditure by small firms. As firms grow large, expenditures for "practice management" increase.

- One office of a Big 8 CPA firm indicated that "if there were" a satisfactory time management program for them to use, they could save between \$50,000 and \$100,000 per year by putting wasted professional time into income production.
- Billing, client-confidential, and SEC confidential data are almost never processed by outside services, due to the responsibility felt and required, particularly by CPAs and lawyers, for protection of their clients' confidentiality.

B. INTERNAL APPLICATIONS

- Within all of these professional groups, "practice management" and basic accounting are the internally required EDP applications.
 - Practice management involves tracking the billings and billable time of each professional, related to each client, contract, or case, as well as the potential amount of his unbillable time. Thus, present and future work can be scheduled to maximize billings and optimize resources.
 - Basic accounting includes accounts receivable and payable, general ledger, and payroll, and may be used internally as well as for clients.
- Practice management is used more by lawyers than by CPAs. While law office management software could be used by CPAs, it is more complex and expensive than CPAs can justify, in addition to having some shortcomings:

- CPAs comment that the available programs do not provide for long term storage of all data from the start of the engagement until completion, and do not offer enough options on how to summarize data, e.g., by individual, by job, etc. In particular, existing programs tend to summarize data in fixed formats, e.g., year-to-date, or project-to-date, and dump the earlier detail, preventing resummarizing of data at will.
- Accounting applications (internal) tend to be done manually or on in-house computers. In the case of relatively smaller firms (less than 20-25 professionals), there is no economic justification for EDP.
 - As the firm size grows larger, payroll may be sent to an outside batch service bureau. Accounting continues manually, on pegboards, or on accounting machines.
 - Larger firms continue to resist using EDP services for anything other than payroll. Certain traditions relating to the personalized nature of the client-professional relationship continue independent of firm size. Most apparent is the feeling that each professional must review all of his clients' bills, after having calculated them by hand, and submit them in a personal way. This is particularly prominent among lawyers, less so among CPAs, and least among consultants.

C. EXTERNAL APPLICATIONS

- Exhibit V-1 shows the client related EDP applications among these professionals. While CPAs and lawyers have a fairly well defined range of services, consultants may be involved with many different specializations and/or industries.

Exhibit V-1

Client Related EDP Applications of Selected Professionals

Professional Group	Application		In-House or Client's Computer	Computer Services Mode of Processing		
	Primary	Secondary		Batch	Remote Batch	Inter- active
<u>CPAs</u>						
Larger firms	Audit		X			
	Tax Preparation		X			
		Financial Statements	X			
		Management Advisory Svc.	X			X
		Word Processing	X			X
Smaller firms	Individual Tax Prep.			X		
	Corporate/Partnership					
	Taxes		X	X	X	
	Financial Statements		X	X	X	
		Audit	X			
		Management Services	X			X
<u>LAWYERS</u>						
Larger firms	Word Processing		X			X
	Document Research		X	X	X	X
	Litigation Support		X	X	X	X
Smaller firms	Word Processing		X			
<u>CONSULTANTS</u>						
	Financial and Organizational		X			X
	Modelling and Forecasting		X			X
	Statistical programs					
	Data base construction		X			X
	and Management					X
		Data Bases				

- Consultants interviewed in this survey specialize in executive search, market research, and corporate planning.
- CPAs and lawyers, in their relationships with clients, will often act as business consultants, providing Management Advisory Services (MAS), thus competing with the professional consultant. One CPA firm interviewed describes itself as the "largest EDP consultants in the world."

1. CPAs

- CPA revenue derives from three major categories of services:
 - Auditing
 - Tax preparation
 - MAS

The revenue distribution for Big 8 accounting firms was shown in Exhibit III-8.

- EDP expenditures do not parallel revenue sources because nearly all the available EDP software and services relates to client financial statements and tax preparation. This usage is shown in Exhibit V-2.
- An important market, which is not being addressed adequately by EDP vendors is the provision of EDP capability (particularly software) to enable CPAs to audit those portions of a client's accounting and control systems which are handled by a computer -- in-house or service bureau -- particularly when intermediate steps in a process are not documented with printed reports.
- Most of the audit software is developed by the Big 8 firms, as shown in Exhibit V-3.

- A general purpose software package which is highly recommended by CPAs and which is useful in the support of audit work is DYL260, by DYLA KOR.

Exhibit V-2

Nature of EDP Usage by CPAs in California*

	<u>Firm Size (# of CPAs)</u>			<u>Total</u>
	<u>1-10</u>	<u>11-30</u>	<u>31 or more</u>	
Respondents to Survey	74	18	11	103
No EDP Applications	--	--	--	6
EDP used as:				
- Service to Clients	67	16	10	93
- Own internal accounting and management	46	14	9	69
- As a tool for auditing	4	6	7	17

*This Exhibit by courtesy of California Society of CPAs

EXHIBIT V-3

Generalized Audit Packages Developed by Big 8 CPAs

Developed by Big 8 CPAs	
Package	Developer
AUDEX AUDITAPE AUDITPAK AUDITRONIC-16 AYAMS Computer File Analyzer STRATA S/2170	Arthur Andersen & Company Haskins and Sells Coopers & Lybrand Ernst & Ernst Arthur Young & Company Price Waterhouse & Company Touche Ross & Company Peat, Marwick, Mitchell & Co.
Developed by EDP Vendors	
AUDIT ANALYZER CARS EDP-AUDITOR SCORE-AUDIT	Program Products, Inc. Computer Audit Systems, Inc. Cullinane Corporation Programming Methods, Inc.

- Whereas audit work is the major activity of the larger CPA firms, individual tax preparation gains increasing importance as the size of the firm is reduced.

- In 1974, 95 million income tax returns were filed, 83 million of which were individual and fiduciary returns, 28 million of which had itemized deductions. With computerized tax preparation costs ranging from \$7 to \$25 to the CPA, and assuming half of the 28 million returns with itemized deductions to be candidates for computerized preparation, a minimum potential market of \$100 million for computerized tax services vendors exists. Exhibit V-4 shows the distribution of tax returns prepared in 1974, during which year approximately 3.5 million tax returns were prepared by computer.

- Tax return preparation is nearly always done in a batch mode. During the last few days of the tax deadline (April 15), some CPA firms will turn to vendors like Multi-Tax (Boston and NYC) for on-line tax preparation services. The time pressure may then justify the additional cost.

2. Lawyers

- Lawyers use EDP mainly to reduce the amount of manual document preparation and rework. Word processing (WP) is used to prepare and personalize standard transmittal letters, and forms such as wills, purchases and sales of real estate, escrow documents, etc.

- In its simplest form, a small in-house system like the IBM Mag Card II, or a Redactron system is adequate. With increasing volume, complexity, and sophistication, an on-line service may be used to augment or replace the in-house capability.

EXHIBIT V-4

Tax Returns Prepared in 1974

Type	Number (Millions)
Income Tax	
Individual-not itemized	55.0
Individual-itemized deductions	28.0
Partnership	1.1
Corporation	2.0
Other	8.8
Sub-Total, Income Tax	94.9
Employment Tax	24.8
Estate Tax	0.2
Gift Tax	0.3
Excise Tax	1.3
TOTAL TAX RETURNS	121.5 M

- Text editing service is offered by numerous services vendors (see section on Competitive Environment), and some are specialists in the legal field.
- In support of major litigation activities, a law firm may avail itself of a computerized on-line, or batch service which enables full text recovery of prior legal decisions and local laws and codes, which apply to a particular case. The search is done via key words which describe the case content and and decisions of interest to the researching attorney.
- Aside from commercial vendors of such services, the U.S. Air Force has been using LITE (Legal Information Through Electronics) since the mid 60's, and the Ohio State Bar Association implemented OBAR, a full text, computer assisted legal research system in 1967.
- In very large cases (100,000 documents or more involved), the legal management of the case may be aided by another form of computerized service. In this form of litigation support, an attorney can input his own relevant documents which arise from depositions, client memoranda files, demands for information from the opposition, and his own research of precedent cases. This input data can also be retrieved in full text or abstracts via key word inquiries.
- One firm, Mead Data Central, provides both library and individually input document research in support of major litigation, as well as word processing in support of the law office activities.

3. Business Consultants

- Business consultants use EDP in specialized applications, depending upon their client's industry and specific need. Ordinarily, applications are oriented toward modeling and forecasting growth, investment results, and market research. Many vendors, such as General Electric Information Services (GEIS), provide consultants with standard statistical programs, data base generation and management programs, and forecasting algorithms, enabling the consultant to develop programs to meet his client's specific needs.
- Exhibit V-5 lists some of the comments by consultants interviewed for this project. Consultant usage of EDP is unpredictable, and largely determined by the client.
 - Generalized software packages are favored.
 - Greater use of Management Information Systems (MIS) applications are forecast. This applies to both internal ("practice management") as well as external (client related) reporting.

EXHIBIT V-5

EDP Applications Mentioned by Consultants Using EDP

Interview #	Main Business	# of employees	Current Applications	Future Applications
283	Advertising Research	200	Tabulation, payroll, accounting	Library management (database) MIS Reporting
285	Executive Search	120	Record keeping, payroll, personnel	None
286	Management Consultants	150	Accounting	More modeling for financial and operations sectors
289	Management Consultants	350	Standard Packages for simulation; linear models	None
292	Management Consultants	2000	Payroll, financial	MIS

VI. COMPUTER SERVICES MARKETS



VI. COMPUTER SERVICES MARKETS

A. AVERAGE GROWTH OF 23% EXCEEDED BY CPAs

- Expenditures by CPAs, lawyers, and business consultants will increase from \$109 million in 1976 to \$312 million in 1981, an average annual growth rate of 23%, as shown in Exhibit VI-1a. Exhibits VI-1b,c, and d, show each professional sector's contribution to this expenditure pattern.
- The main reasons for this relatively high rate of growth are the introduction of EDP services into the legal profession, and the expansion of use of EDP services by CPAs, largely for new applications.
- Consultants are maintaining a rate of growth slightly ahead of inflation, with no great improvements to be seen in the near future. In fact, a forecast economic slowdown in 1978 could be quite harmful to this sector.
- Except for individual income tax preparation, which is generally a batch processing activity, and some client accounting, these services expenditures are made by the larger firms in each profession, as previously discussed in Chapter IV, and, specifically shown in Exhibits IV-3 and IV-5. Computer services expenditures, by size of user, are summarized in Exhibit VI-2.
- Most EDP services justification is made on the basis of the professional's ability to pass along the cost to his client. In-house utilization of services can rarely produce benefits equal to the cost of the service.

EXHIBIT VI-1a

Computer Services Expenditures
1976 - 1981By Major Service Mode
(CPAs, Lawyers, Consultants)

Computer Service Category	Expenditures				
	1976 \$M	1977 \$M	Growth %	1981 \$M	AAGR %
<u>Remote Computing Services</u>					
• Interactive	28.0	32.8	17	64	18
• Remote Batch	3.0	3.4	13	7	18
• Data Base	5.0	5.9	18	14	23
Sub-Total	36.0	42.1	17	85	19
Batch Processing Services	63.0	79.3	26	208	27
Facilities Management	-0-	-0-	-0-	-0-	-0-
Professional Services	3.0	3.3	10	5	11
<u>Software Products</u>					
• Systems Packages	3.0	3.3	10	5	11
• Applications Packages	4.0	4.7	18	9	18
Sub-Total	7.0	8.0	14	14	15
TOTAL	\$109.0	\$132.7	22	\$314	23

EXHIBIT VI-1b

Computer Services Expenditures
1976 - 1981
By Major Service Mode
CPAs

Computer Service Category	Expenditures				
	1976 \$M	1977 \$M	Growth %	1981 \$M	AAGR %
<u>Remote Computing Services</u>					
• Interactive	10.0	11.8	18	28	22
• Remote Batch	1.0	1.1	12	2	15
• Data Base	1.0	1.1	15	3	24
Sub-Total	12.0	14.0	17	33	22
Batch Processing Services	59.0	74.5	26	197	27
Facilities Management	-0-	-0-	-0-	-0-	-0-
Professional Services	1.0	1.1	15	2	15
<u>Software Products</u>					
• Systems Packages	1.0	1.1	15	2	15
• Applications Packages	2.0	2.3	15	4	15
Sub-Total	3.0	3.4	15	6	15
TOTAL	\$75.0	\$93.8	25	\$238	26

EXHIBIT VI-1c

Computer Services Expenditures
1976 - 1981

By Major Service Mode

LAWYERS

Computer Service Category	Expenditures				
	1976 \$M	1977 \$M	Growth %	1981 \$M	AAGR %
<u>Remote Computing Services</u>					
• Interactive	3.0	4.0	33	12	33
• Remote Batch	1.0	1.3	30	3	25
• Data Base	4.0	4.7	20	10	20
Sub-Total	8.0	10.0	26	25	25
Batch Processing Services	4.0	4.7	20	11	22
Facilities Management	-0-	-0-	-0-	-0-	-0-
Professional Services	1.0	1.1	20	3	25
<u>Software Products</u>					
• Systems Packages	1.0	1.1	15	2	15
• Applications Packages	1.0	1.1	20	3	24
Sub-Total	2.0	2.2	18	5	20
TOTAL	\$15.0	\$18.0	20	\$44	24

EXHIBIT VI-1d

Computer Services Expenditures

1976 - 1981

By Major Service Mode

CONSULTANTS

Computer Service Category	Expenditures				
	1976 \$M	1977 \$M	Growth %	1981 \$M	AAGR %
<u>Remote Computing Services</u>					
• Interactive	15	17	10	24	10
• Remote Batch	1	1	10	2	10
• Data Base	*	*	10	1	15
Sub-Total	16	18	10	27	11
Batch Processing Services	*	*	8	1	8
Facilities Management	-0-	-0-	-0-	-0-	-0-
Professional Services	*	*	-0-	*	-0-
<u>Software Products</u>					
• Systems Packages	*	*	10	1	12
• Applications Packages	1	1	15	2	15
Sub-Total	1	1	13	3	13
TOTAL	\$19	\$21	10	\$31	10

(*) = <\$1 million

EXHIBIT VI-2

Computer Services Expenditures by Size of Firm (%)

Size	CPAs	Lawyers	Consultants	Total
Very Large	0	0	0	0
Large	20	0	0	15
Medium	50	90	90	55
Small	30	10	10	30
TOTAL	100%	100%	100%	100%

1. CPAs

- CPAs are the largest users of computer services in this group and have the largest overall growth rate forecast for the next 5 years.
- Their main expenditures for batch processing services are for tax preparation and financial statements (particularly general ledger).
- The second largest expenditure, for interactive remote computing, supports client's needs for financial and organizational modeling, as well as their own in-house time and practice management. These services are mainly sold to field offices of Big 8 accounting firms, who may have an in-house computer at the main office. Expenditure decisions are made autonomously at field offices.
- CPA firms will often buy software products even though they have no in-house computer, and run the software on their client's computer.
- There is no evidence of facilities management (FM) in the CPA sector.
- There is no reason to doubt the continuing high rate of growth of computer services. Mainly, vendors need to pay greater attention to the needs of CPAs in order to increase their business base. This is particularly true in the audit area, where CPAs have heavy responsibility and insufficient computerized support for auditing computer operations.
- CPAs have little need for remote batch or data base services.

2. Lawyers

- Lawyers use computer services when they can reduce their cost of doing business, and/or improve their chances of winning a contingency fee case,

and/or when their client authorizes them to do so.

- Word processing (WP), generally performed in-house on IBM Mag Card 2 or similar equipment is often augmented with or replaced by computer services when the volume of documents to be stored exceeds the capability of the system. Less than \$1 million of remote computing and batch processing revenues relate to WP. Typical vendors of this service include Aspen, Bowne Timesharing, and Optimum Systems, Inc.(OSI).
- For about 10 years, library retrieval of legal decisions, local codes, etc. have been available to lawyers via batch, remote batch, and timesharing modes, by Aspen, Ohio Bar Association (OBAR) and Mead Data Central (LEXIS). These full text and abstract retrieval systems are moving toward on-line search. Typically, a minimum cost per terminal, plus a fee for search are charged.
- The latest innovation in legal services is in litigation support, which permits the attorney to enter his own data and modify, abstract, and retrieve it, as has previously been done with library retrieval. One firm, Mead Data Central, does both library and individually input retrieval. This is a relatively new, and rapidly growing (33% per year) legal service.
 - Control Data Corporation (CDC), during its 5 year litigation with IBM, ending in 1973 with CDC acquiring Service Bureau Corporation (SBC), created its Information Services Department. A staff of 25-30 people assist corporations and law firms in preparing litigation support material to be stored in a CDC computer, via CYBERNET computer network.
- About half of the cost of litigation support is in data entry, and accounts for most of this year's \$4 million in batch revenues. One firm, Stentran, actually arranges with the court recorder to use a digitizing steno machine.

Other applications include coding and original data entry of documents for abstracting and later search and retrieval.

- Future applications will relate to practice management and personalized billing, when they can be done economically, and when the law firms can be convinced of data security. Otherwise, these activities will be in-house applications. Currently, most of the \$1 million in professional services is for programs for office management to run on in-house computers.
- There is no evidence of FM among lawyers.

3. Consultants

- Consultants tend to use timesharing for developing business applications software for their clients. They need, and use, standard packages for data management, financial forecasting, organizational modeling, etc.
 - They tend to pass these costs on to their clients.
 - They tend to do their own programming.
- The consulting business has been slack, and will probably continue so for the near future, yielding only a 10% AAGR.

B. GEOGRAPHIC DISTRIBUTION FOLLOWS POPULATION

- Geographically, expenditures tend to follow population density. Most general purpose and specialty services vendors concentrate in major metropolitan areas. Those with networks, such as GEIS, Tymshare, UCC, and others provide nationwide remote computing services. Specialty firms such as Mead Data Central and Aspen, who provide legal information retrieval services, utilize national offices for their parent firms.

- Major vendors providing batch services such as Computax, have numerous offices throughout the U.S., in an effort to match the geographic distribution of their professional clients. The previous Exhibit III-6 is an adequate representation of the geographic potential for computer services revenues.

C. SPECIALTY APPLICATIONS LEAD

- Overall, specialty applications lead, as shown in Exhibit VI-3, increasing from a 1976 level of \$85 million to \$229 million in 1981. This corresponds to an AAGR of 28%.
- 85% of all processing expenditures overall go for specialty applications, oriented toward client needs.
- Exhibit VI-4 further breaks down the applications by professional sector, and the expenditures for specialty applications related to each sector.

EXHIBIT VI-3

Processing Services Expenditures by Type of Service

(CPAs, Lawyers, Business Consultants)

1976-1981

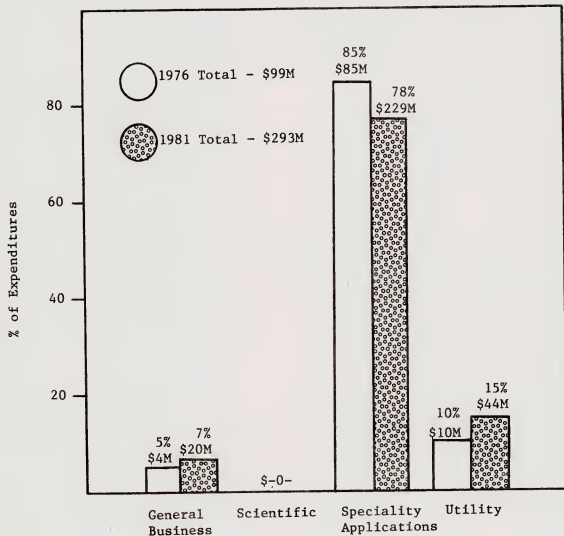


EXHIBIT VI-4

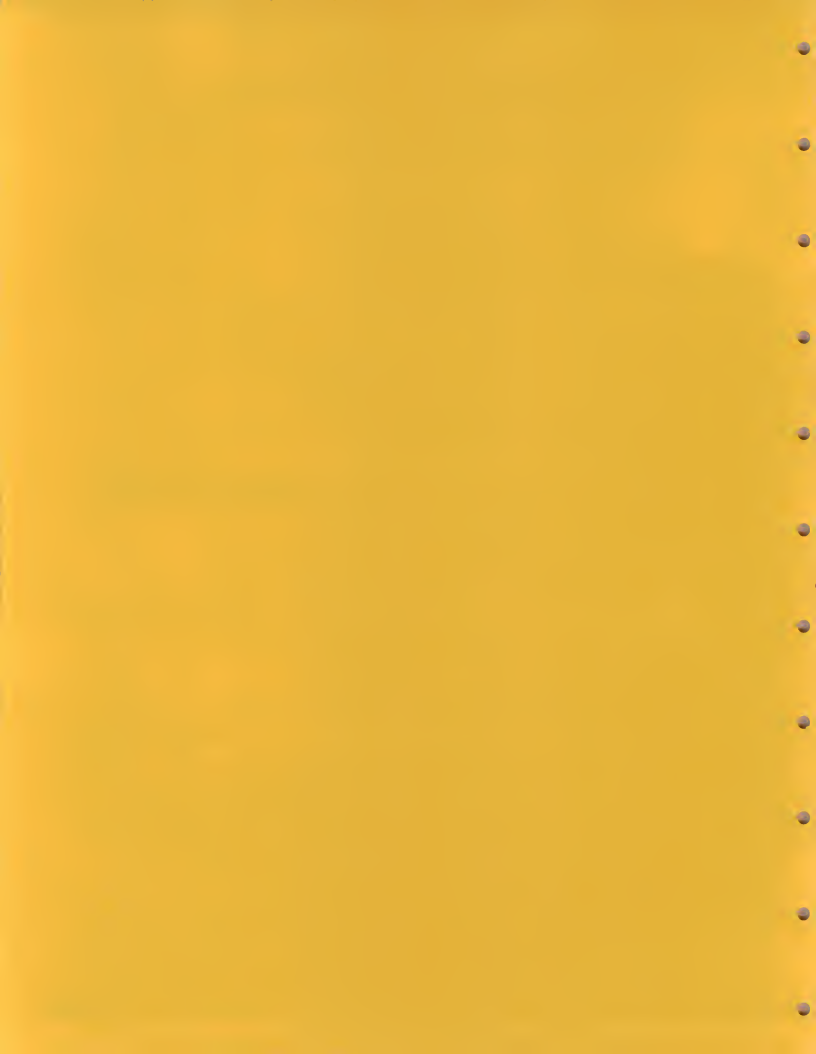
1976 Processing Services Expenditures
by Application (\$ Millions)

Application	CPAs	Lawyers	Consultants	Total
<u>General Business</u> (internal to professional user)				
• Accounting	1.0	*	*	1.0
• Office Management	*	*	*	*
• Word Processing	*	*	*	*
• Payroll/Personnel	*	*	*	*
• Other	*	*	*	*
Sub-Total	2.0	1	1	4.0
<u>Scientific</u>	0	0	0	0
<u>Specialty Applications</u> (for clients)				
• Taxes	40.0	*	0	40.0
• Client Accounting				
-General Ledger	19.0	*	*	20.0
-Financial Statements	7.0	*	*	8.0
• Forecasting/Modeling	2.0	*	5	7.0
• Research/Litigation Support	0	10	0	10.0
Sub-Total	68.0	11	6	85.0
<u>Utility</u>				
• Program Development	1.0	0	9	10.0
TOTAL	\$71.0	\$12.0	\$16	\$99.0

(*) = <\$1 million

VII. TECHNICAL REQUIREMENTS

INPUT

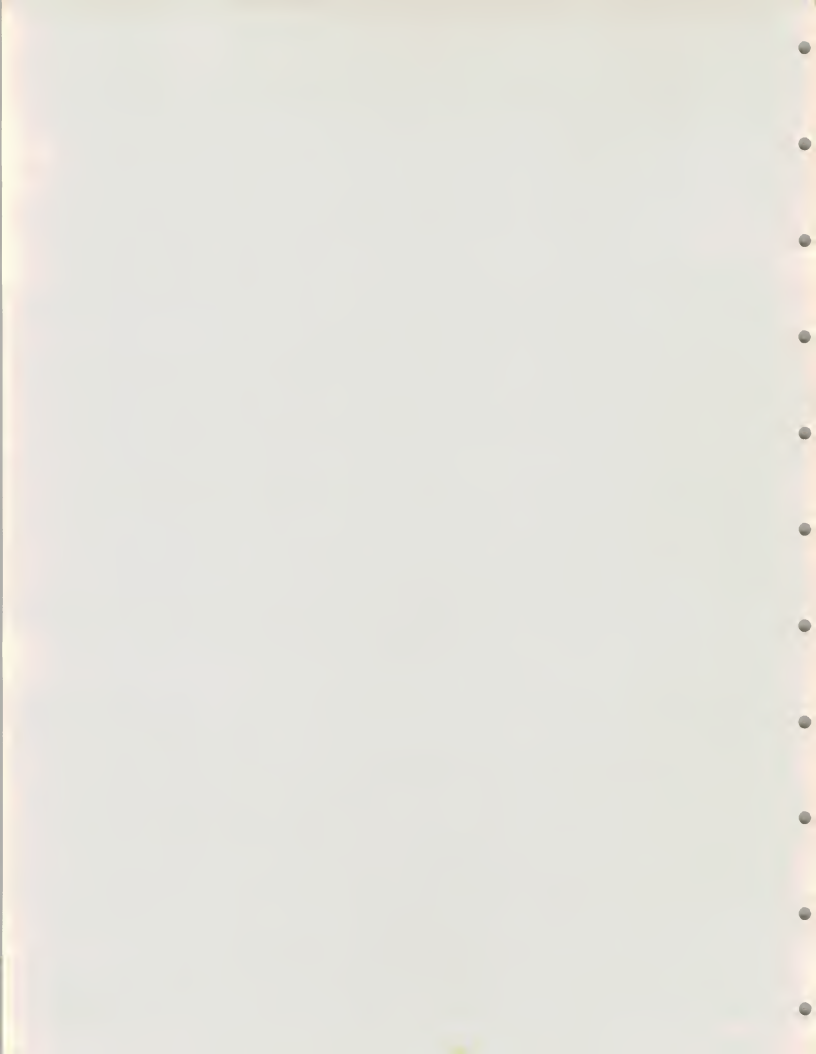


VII. TECHNICAL REQUIREMENTS

- Within this group there are few specifically identified technical requirements of vendors:
 - Batch vendors should have reasonable turnaround time -- generally 1 or 2 days.
 - Timesharing vendors should have standard products available to do specific tasks with a minimum of program modification costs; e.g., tax and general ledger preparation, time and billing systems, and random number generators, etc.
 - Software vendors -- of products or services -- need to thoroughly understand the business of the professional and his client. One CPA, for example, comments that none of the available programs from a major supplier provide a software bridge between payroll and general ledger systems.
- CPAs in particular express distress at the failure of the computer services industry to support them, particularly in auditing and time accounting. As a result, CPAs tend to develop and share their own software, as with the AICPA programs available through GEIS and Comshare.

- A further consequence is the probability that CPAs, and many attorneys, will turn to small computer systems, such as those recently announced by IBM and Datapoint, for in-house practice management and word processing.
- The concept of data security continues to be a major legal as well as psychological issue with CPAs and accountants: In the future, vendors choosing to work with these professionals will probably have to be able to demonstrate -- and, perhaps be bonded for client data security.
- In the area of litigation support, data base requirements and storage capacity are crucial, in addition to extensive search and retrieval software. For those vendors wishing to WP, search, and retrieve attorney originated data, considerable people-power will be required for review, abstracting, and entry of documents into the system. Perhaps 50% of revenues for attorney-originated document processing will be for input. Where library search is the service (as with LEXIS and WESTLAW), the contents of the data bank is the primary issue.
- Consultants have basic requirements for general purpose financial, modeling, and forecasting software. Other special applications are sought where available, according to client needs.
- All of these users who operate nationally or internationally require services vendors with adequate networks to enable consistency of internal operations. GEIS and Tymshare are most often mentioned.
- Vendors generally choose to be specialists (Computax, Mead/LEXIS) or generalists (GEIS, Tymshare). The higher the degree of specialization, the more sophisticated the vendor's knowledge of his user's business must be.

There are no significant firms providing both generalist and specialist computer services.



VIII. MARKETING REQUIREMENTS

INPUT



VIII. MARKETING REQUIREMENTS

A. GENERAL

- The main marketing requirement is to provide new products and services for existing clients. This is most true for CPAs, followed by attorneys, and then consultants. New product introductions by IBM, for the System 32 should be followed carefully. CPAs and lawyers using the System 32 (S/32) should be told about possibilities for using it as a terminal to a computer service center.
- The main "new applications" needs center around practice management and word processing. In both of these segments, turnkey minicomputer systems will probably be cost competitive.
- Data processing and word processing are different problems and need to be marketed by personnel with different backgrounds. In CPA and law firms, these services are often authorized by different individuals/departments. Data processing may be an accounting function, and word processing an office management function.
- Many markets such as library research for lawyers, and tax preparation are saturated. The former has only 2 firms (Mead/LEXIS and WEST Publishing/WESTLAW), while the latter has over 20 major suppliers. There is little or no room for new vendors, and existing vendors will need new products to grow

at an above average rate.

- Users may be potential clients for software products even though they have no computers, because they often use their clients' computers. Thus, a CPA firm may buy or lease an audit package to run on a Fortune 500 client firm's 370/168, while having no computer of its own.

- Due to security problems, clients may be willing to buy/lease software to perform a service in-house, while they would not use the same service from a service vendor. Bowne Timesharing, a major vendor of interactive WP services has now packaged its WORD/ONE text editing system for use on IBM 360 and 370 user's in-house systems. Lease price for a typical 10-15 terminal system is around \$1200 per month, and would thus, be directed toward larger professional users.

B. WHY USERS SELECT SERVICES

- These professionals only use EDP on a cost tradeoff basis, where confidentiality or tradition does not override the economic issues. These trade-offs are generally made by CPAs and lawyers based on passing the burden of work down the skill and salary ladders to junior members of the firms, or paraprofessionals. Among consultants, the cost trade-offs lie more in the natural ability of machines to manipulate data more economically than people can.

- Usually EDP cannot be justified on the basis of in-house applications, and so the cost is generally transferred to the professional's client. Thus, an important marketing requirement is to know the professional client's needs, and to assist in improving the available service, to enable the professional to justify using EDP.

- Batch services are widely used because they are cheap, and time is not an issue for tax, general ledger, and many data base and WP functions. Terminals can rarely be cost justified. Unless real time problem solving is deemed necessary by the professional (on-line text editing, document search, "What if" financial and organizational modeling) batch services will be selected.

C. HOW USERS CHOOSE VENDORS

- Users were asked to rank, on a scale of 1-5 (1=unimportant, 5=very important) the importance of certain items in their process of selection of a vendor of processing services. The results are tabulated in Exhibits VIII-1 and VIII-2.
- The low rate of response in the exhibit reflects both the low usage of EDP services by those actually interviewed, as well as a frequent absence of choice criteria. Users often comment that the service they use is the only one available. Sometimes this is true (highly specialized services, as in litigation support or audit work), and other times reflects the absence of information.
- The two major criteria observations from Exhibits VIII-1 and VIII-2 are:
 - Quality of service is by far the most important issue.
 - Cost is not a major issue, mostly because it is passed on to the client.
- Users are generally satisfied with their existing vendors, and are not likely to change unless service deteriorates. Once dissatisfaction sets in, lower price would be an insignificant issue in making a vendor switch.

EXHIBIT VIII-1

Vendor Selection Feature of Importance to
CPAs, Lawyers, Consultants

(Number of times ranked, 1=unimportant: 5=very important)

Big 8 Ranking					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
a) Geographic location of vendor	4	2	1	1	-
b) Vendor's technical expertise in user's field	-	2	1	4	1
c) Vendor's hardware/software	-	-	1	2	5
d) Availability of network	1	-	1	-	6
e) Price	-	4	2	1	1
f) Other	-	-	-	-	6
Lawyer Ranking					
a) Geographic location of vendor	-	-	1	1	1
b) Vendor's technical expertise in user's field	-	-	-	1	2
c) Vendor's hardware/software	-	-	-	-	2
d) Availability of network	2	1	-	-	-
e) Price	1	-	2	-	-
f) Other	-	-	-	-	3

EXHIBIT VIII-1

CONTINUED....

Vendor Selection Feature of Importance to
CPAs, Lawyers, Consultants

(Number of times ranked, 1=unimportant: 5=very important)

Consultant Ranking					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
a) Geographic location of vendor	-	-	-	2	1
b) Vendor's technical ex- pertise in user's field	1	-	1	-	1
c) Vendor's hardware/ software	-	-	1	1	1
d) Availability of network	1	-	-	2	-
e) Price	-	-	1	1	1
f) Other	-	-	-	-	1

EXHIBIT VIII-2

Items of Importance to Users,
Specified Under "Other," in Exhibit VIII-1

(Number of Times Mentioned)

	Rank				
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
<u>CPAs</u>					
1) Service	-	-	-	-	6
<u>Lawyers</u>					
1) Service	-	-	-	-	3
<u>Consultants</u>					
1) Availability of Standard Packages	-	-	-	-	1
2) Promptness in billing	-	-	-	-	1
3) Most of their clients use GEIS (no ranking given)					

- Contract styles vary widely, but tend toward transaction or package pricing, except for consultant utilization. Tax returns are priced on a remit basis, according to complexity. Payroll, general ledger and legal search are transaction priced. Word processing, interactive modeling and forecasting are based on traditional CPU, memory, and connect charges. Transaction pricing or other form of fixed monthly pricing is preferred by users for EDP budget control.

- Attorneys and law firms are the least knowledgeable about EDP, and require considerable education. CPAs know what they want, and complain that vendors do not take them seriously. Consultants are most at home with vendor selection and applications specification, largely because EDP is usually part of their product.

- The existing specialty market is highly competitive, and except for some newly emerging applications, such as computer system audit for CPAs, and litigation support services, there is little room for new services vendors.

E. RECOMMENDATIONS AND STRATEGIES

- The simplest way to expand sales would be to transfer a good existing product from one type of professional to another. For example, a law office time and billing management program may be transferrable to a CPA practice. An architectural library research system may be transferrable to lawyers. Informatics is one firm which successfully modifies its search and retrieval software (RECON IV) in this manner.

New market opportunities, which would require highly specialized knowledge of a professional activity, are best pursued by acquisition of a small firm which already has the software. Current opportunities include litigation support and legal word processing, and computer auditing.

- Vendors already serving these industries should broaden applications to existing users, as a more important strategy than seeking new users. A law office using interactive word processing is a potential client for litigation support services. A CPA using automated tax preparation is a potential client for general ledger service.
- Education is a major problem, particularly with lawyers, and a prospective services vendor must expect to spend inordinate time and money selling computer services to lawyers. EDP concepts tend to be quite foreign.
- CPAs receive inadequate training in the use of EDP, and in techniques for auditing EDP facilities. Canada is perhaps 5 years ahead of the U.S. in this area. The Canadian Institute of CPAs has a 6 week course; video tape plus hands on experience to train "computer auditors." So far, no U.S. firm is offering the training, which would be a significant easy entry opportunity.
- Be aware of developments in mini systems for CPAs and lawyers, especially for client related financial processing, office management, and WP. An affiliation with a mini system vendor could be productive if the user comes to view the mini systems as RCS terminal for problems requiring higher sophistication, better printing quality, or greater storage.
- Field offices of the Big 8 have autonomy regarding services expenditures, in spite of national NIS contracts with major vendors of NIS. A "multi-client" funding of a time and billing package could be a significant revenue

- Smaller CPA firms will stress geographic location much more than the Big 8, because of their extensive use of courier-type batch services.

- "Concern for vendor's hardware/software" was nearly always specified as concern over software, regarding its,

- Suitability to the task,
- Compatibility with the professional user, or his client's hardware.

- Lawyers in particular, followed by CPAs, and least so with consultants, have little capital available for the development of software. They expect the vendor to develop, update, and maintain the software they use.

- The choice of a vendor generally rests with a partner in the CPA or law firm, and with the "project manager" or VP in a consulting firm. High level marketing is required.

- Exhibit VIII-3 tabulates comments by users regarding specific vendors. The range of comments varies but is mainly concerned with service. Most CPA and law users preferred not to name their vendors. Many law firms actually require mutual anonymity be written into their service contracts, as a competitive opportunity against their opponents.

D. OTHER OBSERVATIONS

- No clear migration paths are discernable. What is apparent is that CPA and law office needs are not being filled, and that mini systems are moving in to fill them. Migration from batch to NIS is not evident, or even justifiable in most cases.

EXHIBIT VIII-3

User Comments About Specific Vendors

Type of User	Vendor Mentioned	Comment
CPA	GEIS	High in cost; high in performance, GE came out on top, after analysis.
CONSULTANT	Computer Research	New contract. So far, so good
CONSULTANT	ADP	Tops, except user would like a form he is not getting.
CONSULTANT	Computer Research	Cheaper; take good care of their equipment; prompt billing; knowledgeable people.
CONSULTANT	CDC	Curtailling services. Costs not competitive with IBM.
CONSULTANT	GEIS	Support for new products is not good enough.
CONSULTANT	May and Speh	Service is great.

- Contract styles vary widely, but tend toward transaction or package pricing, except for consultant utilization. Tax returns are priced on a unit basis, according to complexity. Payroll, general ledger and legal search are transaction priced. Word processing, interactive modeling and forecasting are based on traditional CPU, memory, and connect charges. Transaction pricing or other form of fixed monthly pricing is preferred by users for EDP budget control.

- Attorneys and law firms are the least knowledgeable about EDP, and require considerable education. CPAs know what they want, and complain that vendors do not take them seriously. Consultants are most at home with vendor selection and applications specification, largely because EDP is usually part of their product.

- The existing specialty market is highly competitive, and except for some newly emerging applications, such as computer system audit for CPAs, and litigation support services, there is little room for new services vendors.

E. RECOMMENDATIONS AND STRATEGIES

- The simplest way to expand sales would be to transfer a good existing product from one type of professional to another. For example, a law office time and billing management program may be transferrable to a CPA practice. An architectural library research system may be transferrable to lawyers. Informatics is one firm which successfully modifies its search and retrieval software (RECON IV) in this manner.

New market opportunities, which would require highly specialized knowledge of a professional activity, are best pursued by acquisition of a small firm which already has the software. Current opportunities include litigation support and legal word processing, and computer auditing.

- Vendors already serving these industries should broaden applications to existing users, as a more important strategy than seeking new users.

A law office using interactive word processing is a potential client for litigation support services. A CPA using automated tax preparation is a potential client for general ledger service.

- Education is a major problem, particularly with lawyers, and a prospective services vendor must expect to spend inordinate time and money selling computer services to lawyers. EDP concepts tend to be quite foreign.

- CPAs receive inadequate training in the use of EDP, and in techniques for auditing EDP facilities. Canada is perhaps 5 years ahead of the U.S. in this area. The Canadian Institute of CPAs has a 6 week course; video tape plus hands on experience to train "computer auditors." So far, no U.S. firm is offering the training, which would be a significant easy entry opportunity.

- Be aware of developments in mini systems for CPAs and lawyers, especially for client related financial processing, office management, and WP. An affiliation with a mini system vendor could be productive if the user comes to view the mini systems as RCS terminal for problems requiring higher sophistication, better printing quality, or greater storage.

- Field offices of the Big 8 have autonomy regarding services expenditures, in spite of national NIS contracts with major vendors of NIS. A "multi-client" funding of a time and billing package could be a significant revenue

opportunity for a vendor willing to undertake a large scale program product development. Such a program has been discussed between Comshare, who maintains the current AICPA program library (COMPASS), and CPA associations. Some progress has been made, but work is not currently active.

- Attention needs to be paid to competing with small turnkey systems designed to do internal and client accounting, such as the IBM System 32. One firm, Keydata Corporation, is offering a System 800, an \$800 per month computer services contract for billing, inventory control, accounts receivable, sales analysis, and management reporting. The system uses a GE Terminet 300 on-line to Keydata computer in Foxboro, Massachusetts, via Keydata's network.



IX. COMPETITIVE ENVIRONMENT



IX. COMPETITIVE ENVIRONMENT

A. COMPETITION IS INTENSE

- Competition in the provision of products and services to these groups is most intense. With CPAs and lawyers, the competition is from highly specialized applications vendors. For consultants (as well as when CPA firms act as consultants), the competition is from general purpose financial planning, modeling, forecasting, and data base management vendors.
- Minicomputer turnkey systems vendors are making major efforts - with a high likelihood of success - into CPA and law office markets, with internal and client oriented financial packages.
- When professionals' clients are not vendors of EDP equipment or services, they may still reduce the total available EDP revenues derived by commercial vendors because the professional frequently uses their clients' in-house computers instead of acquiring their own or going to outside vendors.
- Because legal and ethical constraints prevent CPAs and lawyers from selling computer services and because most consulting firms do not have internal EDP capability to compete as EDP vendors, computing services competition in these markets derives from:

- General purpose services vendors
 - Specialty applications services vendors
 - Minicomputer turnkey systems vendors
- However, CPAs and business consultants are significant competitors in the generation of software and EDP consulting services.
 - Among CPAs, a highly cooperative spirit, in the face of computer industry neglect, results in widespread exchange of programs of value in the industry. A library of these programs was originally available only from GEIS. More recently, Comshare has been selected to be the primary repository and provider of AICPA programs.
 - Major CPA firms, like the Big 8, are major software developers for their clients, and, in this way, compete with other business consultants, and reduce the available software services market.
 - The \$109 million in expenditures for services by CPAs, lawyers, and consultants is allocated among major vendors as shown in Exhibit IX-1.
 - As was shown earlier (Exhibit IV-6), the available market for services will increase from a 68% share of total EDP expenditures to 78% by 1981, in spite of the inroads by minisystems, due to growth in the use of existing services, and the provision of new services to the existing client base.

B. COMPUTER TAX SERVICES

- With an estimated 3.5 million tax returns filed in 1974, the field is dense with specialized firms providing computerized tax services. All have courier and drop off services, as they are provided in batch mode. Exhibit

EXHIBIT IX-1

1976 Revenues of Major Services
Vendors to Selected Professionals

(CPAs, Lawyers, Business Consultants)

Vendor	Application	Mode	Revenues \$M
<u>1) CPAs</u>			
Computax	Tax	Batch	25
Comshare	General	Interactive T/S	5
Dynatax (Tymshare)	Tax	Batch	10
GEIS	General	Interactive T/S	10
Tymshare	General	Interactive T/S	5
Others			<u>20</u>
SUB-TOTAL			75
<u>2) Lawyers</u>			
Aspen Systems	Research/Litigation	Inquiry/Remote Batch	2
Bowne Timesharing	Litigation/WP	Interactive	1.5
CDC	Consulting/litigation support, WP		2
Mead/LEXIS	Research/Litigation support	Inquiry/Interac- tive	2
West	Research	Inquiry	1.5
Others	Billing/WP		<u>6</u>
SUB-TOTAL			15
<u>3) Consultants</u>			
CSC	Financial planning, modeling	Interactive/ timesharing	3
GEIS	Financial planning, modeling	Interactive/ timesharing	6
Others			<u>10</u>
SUB-TOTAL			19
TOTAL			\$109

IX-2 lists major batch vendors, with typical fee-to-the-CPA for preparation of an individual 1040 tax return.

- In addition, tax preparation software is available from firms such as Cognia Systems (a subsidiary of Esmark Corporation), and Foresight Systems, Inc. (a subsidiary of United Computing Systems). These, however, are oriented toward corporations, rather than individuals.

C. IBM ASSAULTS THE PROFESSIONAL MARKET WITH SYSTEM/32

- In recent weeks, IBM has made two major announcements which will significantly impact the professional's market:
 - A new Client Accounting and Financial Reporting System package directed at the smaller CPA firm, will be available in November, 1976. A typical S/32 configuration, including software, will rent for less than \$1150 per month. The system will provide a complete financial system package.
 - Through cooperative marketing and support between General Systems and office Products Divisions, new hardware and software, involving the S/32 and Mag Card Selectrics, enables interweaving data and word processing activities. This product will be attractive to all professional offices, and will compete significantly with computer services firms in these markets.
- On the positive side, the mass marketing and educational efforts of IBM will provide opportunities for services vendors as well, to enhance and to expand upon the capabilities of the S/32 configurations. Penetration ratios among all segments should increase, and the market for word processing in particular will be expanded.

EXHIBIT IX-2

Some Computer Tax Services Vendors to CPAs

Vendor	*Minimum Fee for 1040	Number of Returns in 1975
Computax	\$5.00	1,000,000
Dynatax	4.50	500,000
Unitax	3.10 - 8.25	500,000
Tacs	5.00	200,000
Sta-Fed	5.75	150,000
PTS	4.75 - 11.00	150,000
Accutax	13.50 (includes state)	100,000
TOTAL		2,600,000

*Average tax return preparation, including handling, cover letter, client copy, is more like \$7.00. Including fees for State and local tax returns, the average approaches \$10.

- Other minicomputer turnkey systems vendors include:
 - Datapoint, whose turnkey mini system for independent accountants (Dataaccountant) costs \$637 per month a a three year lease plan, with \$1,950 initial license fee.

D. SERVICES COMPETITORS IN THE SPECIALTY MARKETS

1. Vendors to CPAs and Business Consultants

- The most commonly used vendor reported in 1975 by the AICPA Time Sharing Users meeting is General Electric (GEIS), with Comshare, Compu-Serv and Tymshare being well represented.
 - Both GE and Comshare have libraries of CPA generated programs, which are offered to other CPAs either free, or at a nominal royalty rate. Comshare is the vendor with the most current catalog, based on the California State Society of CPAs common library.
- General Electric Information Services (GEIS) is the largest U.S. remote computing vendor, with revenues approaching \$200 million. Due to the extent and reliability of their international network, GE is first choice among multi-national companies. The Big 8 accounting firms all have national contracts with GEIS. With over 250 clients among CPAs, and consultants, GEIS provides an extensive catalog of financially oriented programs, many of which are developed on GE's network. This catalog includes many AICPA developed programs.

- Computer Sciences Corporation (CSC), via its commercial service, INFONET, provides CPAs and consultants with financial planning, data management, and statistical capability.

- Comshare, Inc., a \$12 million remote computing company offers COMPASS (COMshare's Professional Accounting Systems and Services), which includes a complete library of CPA developed programs. Offerings permit CPA firms to enhance their accounting and MAS, as well as to monitor in-firm time and billing, G/L reporting, project accounting, and staff scheduling. Over 50 accounting firms became COMPASS clients during the year since inauguration in May, 1975.

- Specialty firms:

- Accounting Corporation of America (ACA) is a 25 year old firm with 10 U.S. offices offering general accounting services, in a batch mode. ACA provides G/L and financial statements, A/R, A/P, payroll and employee time analysis. They do not do tax returns.
- Computax is the largest tax preparation service for CPAs in the U.S., processing over 1 million returns last year. They are 98% owned by Commerce Clearing House (CCH), have 7 national processing centers, and employ over 200 EDP professionals for hardware and software development and operation. Estimated revenues are \$25 million annually, for individual, partnership, corporate and fiduciary tax return processing.
- Dynatax, a subsidiary of United Data Centers (UDC), itself owned by Tymshare, maybe the second largest individual tax processing service vendor. Dynatax offers two levels of complexity of service, priced at \$23 and \$7 respectively, and operates in 32 states. Dynatax is offering corporate tax service in 1976, and will offer partnership

service later. Tymshare is also rumored to be negotiating for the acquisition of Unitax, which will substantially add to Dynatax's base.

- Programmed Proprietary Systems (PPS) is a \$2 million firm offering computerized individual, corporate, and partnership tax returns, as well as computerized G/L to CPAs and tax attorneys. They claim to spend more money on customer support and on-site training of accountant users than their competitors do, and are number 3 or 4 in size in the U.S.

- Software Products:

- Mini-Computer Business Applications, Inc. (MCBA) is one example of a software company which has developed software for use with minicomputers, to serve this marketplace. MCBA designs around the Digital Equipment Corp. (DEC) product line. They provided an Accountant's Client Write-Up package for the DEC 310, with a DEC 350 version due soon. In their opinion, the DEC line, using their software, would be less expensive than a comparably performing IBM S/32. A \$500,000 per year firm, they have developed 5 basic accounting packages, and are planning to develop software to support attorneys.

2. Attorneys/Lawyers

- Aspen Systems Corporation is a 65% owned subsidiary of American Can Company, with 1975 revenues of \$3.9 million. Litigation support services were pioneered by Aspen over five years ago. Aspen has 200 employees, 25 of whom are in EDP litigation support and state legal records. They currently provide all services in an RJE mode, but will have on-line, fully interactive ASPENSEARCH IV available by August 1976. Aspen also provides total

turnkey systems utilizing their proprietary software, and staff of document classifiers who work under Aspen control at the client's facility.

- Bowne Timesharing, Inc. (BTS) is a wholly owned subsidiary of Bowne and Company, the oldest and largest financial printer in the U.S. In 1975, BTS accounted for 11% of Bowne's \$45 million in revenues. BTS is six years old, and is a leader in word processing, with more than 350 companies, organizations and agencies as clients. Clients include federal agencies, banks, consultants, CPAs, insurance companies, and utilities, as well as law firms in Los Angeles, New York, Chicago, San Francisco, and Houston. The basic word processing system, offered on a time-sharing basis is named WORD/ONE. About 25% of BTS activity is in law, including WP document preparation and litigation support. Their major emphasis is in WP and document preparation. Second emphasis is on litigation support.

- Control Data Corporation (CDC) is organizing its Professional Services Division into "firms." Each firm has total hardware, software, service, and support responsibility for one specific industry. One such firm is the Law Support Group in Minneapolis, developed as a result of the IBM litigation of 1966-1968, which resulted in CDC acquiring Service Bureau Corporation (SBC).

The group does market research and consulting in the law industry. They offer consulting and provide people for document discovery, screening, archives, coding, indexing, abstracting, and full text retrieval. Their software is available for in-house installation. They offer international services in support of anti-trust, EEOC, stock fraud, patent, and other litigation. Foreign translation service is available.

- Informatics offers a combined data base management system, and a batch retrieval system, under the product name RECON IV. Attorneys and technicians on the staff of the Legal Systems Department have been active since 1966, and in litigation management services since 1974. They provide computer software and services to corporate legal departments, law firms, and agencies, either on the client's computer, or by timesharing on dual 370/158s in New Jersey. Regional centers in Washington and San Francisco are currently providing litigation management services.

Over 100 specialists are engaged with full text, abstracted, keyworded, and taxonomic data bases. Data entry and clerical services are available at regional centers and project offices, providing data entry and copying.

- Mead Data Central offers LEXIS, one of the two most widely known and used document research and retrieval systems in the law support services marketplace. LEXIS is an electronic law library, which does not allow users to input documents as in litigation support services defined herein. None the less, Mead and LEXIS are helping to "make the market" in the use of computers in law. A LEXIS installation costs \$500 per month, plus \$125 per hour for terminal use. Mandatory training costs \$225 per person.

- West Publishing Company (St. Paul, Minnesota) provides WESTLAW, a competitor of Mead's LEXIS - also a fixed data base document retrieval system for use in legal research. A WESTLAW installation costs \$1200 per month, plus \$2.50 per search. One day of optional training is free.

- Minicomputer Vendors:

- Comptek Research (Buffalo, New York) manufactures and sells turnkey systems for WP and accounting in law firms. The system is built

around a Data General mini, with options on Selectrics, CRTs, Hi-speed printers and disks. They currently have 30 firms nationwide, one in San Francisco. Other offices are in New York City, Atlanta, Buffalo, and Los Angeles. Data General provides the computer maintenance. The system is known as "Barrister."

- Daconics Corporation (Sunnyvale, CA) markets a 10 station shared word processing system built around an HP 2100. The system is not industry specific, and there are only 2 or 3 law office clients. Most clients are in technical publications. A base system sells for \$45K with 2 terminals and a Diablo printer. Their optimum law office has 15-25 partners. The system stores up to 2000 pages on-line at one time.

APPENDIX A - DATA BASE



Forecast User Expenditures for Computer Services

by Mode of Service

Industry Category: Professionals (CPAs, Lawyers, Business Consultants)

CATEGORY OF SERVICE	EXPENDITURES (\$ M)					AAGR
	1976	1977	Growth Rate	1979	1981	
Remote Computing Services	36	42.1	17	71	85	19
Batch Processing Services	63	79.3	26	163	208	27
Facilities Management	0	0	0	0	0	0
Professional Services	3	3.3	10	4.5	5	11
Software Products	7	8.0	14	12	14	15
TOTAL	\$109M	\$132.7M	22%	\$250.5M	\$312M	23%

By Type of Service

PROCESSING SERVICES	EXPENDITURES (\$ M)		AAGR
	1976	1981	
General Business	\$4M	\$20M	38%
Scientific	0	0	0
Speciality Applications			
Tax Preparation	40	116	24%
Client Accounting	28	56	15%
Forecasting and Modeling	7	17	20%
Legal Research and Litigation	<u>10</u>	<u>40</u>	<u>32%</u>
Sub Total	85	229	22%
Utility	<u>10</u>	<u>44</u>	<u>34%</u>
TOTAL	\$99M	\$239M	24%

Distribution of User Expenditures For

Processing Services in 1976

By Mode and Type of Service

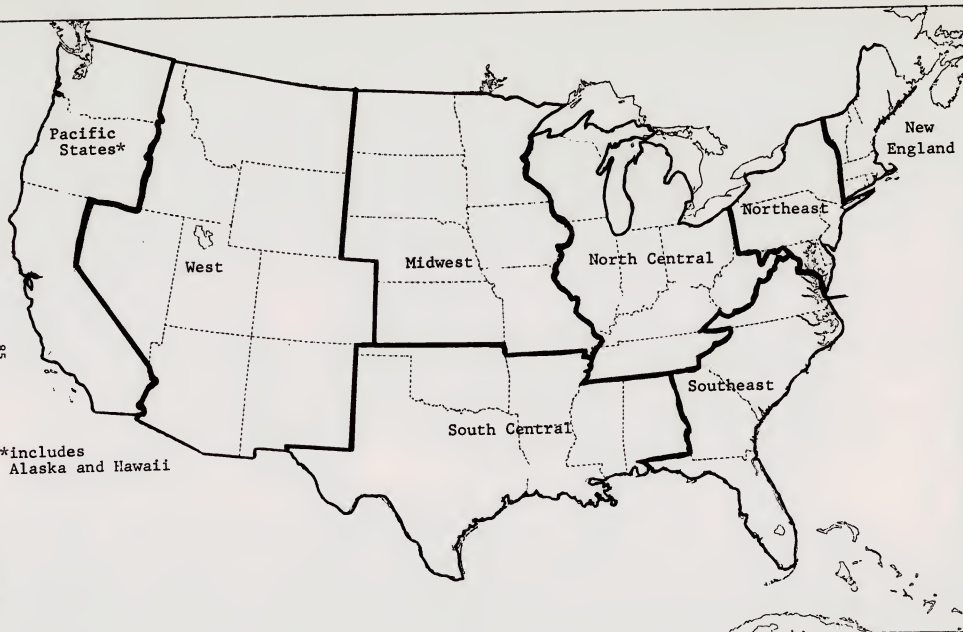
Industry Category: Professionals (CPAs, Lawyers, Business Consultants)

TYPE OF SERVICE	INTERACTIVE	MODE OF SERVICE			FM	TOTAL
		REMOTE BATCH	DATA BASE	BATCH		
General Business	3	0	1	0	0	\$4M
Scientific	0	0	0	0	0	0
Speciality						
Business Oriented	10	2	3	70	0	\$85M
Scientific Oriented	0	0	0	0	0	0
Utility						
Business Oriented	7	2	1	0	0	\$10M
Scientific Oriented	0	0	0	0	0	0
TOTAL	\$28M	\$3M	\$5M	\$63M	0	\$99M

Forecast Use Expenditures for Computer Services
By Size of User

SIZE OF USER	EXPENDITURES (\$ M)			1981	AAGR
	1976	1977	1979		
Very Large	0	0	0	0	0
Large	16	21	36	63	31
Medium	60	75	115	180	25
Small	<u>33</u>	<u>37</u>	<u>51</u>	<u>69</u>	<u>16</u>
TOTAL	\$109M	\$133M	\$202M	\$312M	23

*includes
Alaska and Hawaii



APPENDIX B - DEFINITIONS

DEFINITIONS

- Computer Services. These are services provided by vendors which perform data processing functions using vendor computers, or assist users to perform such functions on their own computers.
- The following are the definitions of the modes of service used in this report.
 - Remote Computing Services (RCS). Provision of data processing to a user by means of terminals at the user's site/s connected by a data communications network to the vendor's central computer. The three sub-modes of RCS are:
 1. Interactive (timesharing) is characterized by interaction of the user with the system, primarily for problem solving timesharing, but also for data entry and transaction processing; the user is 'on-line' to the program/files.
 2. Remote Batch is where the user hands over control of a job to the vendor's computer which schedules job execution according to priorities and resource requirements.
 3. Data Base is characterized by the retrieval of information from a vendor-maintained data base: this may be owned by the vendor or a third party.
 - Batch Services. This includes data processing performed at vendors' sites of user programs and/or data which are physically transported (as opposed to electronically by telecommunications media) to and/or from those sites. Data entry and data output services, such as keypunching and COM processing are also included. Batch services include those expenditures by users which take

their data to a vendor site which has a terminal connected to a remote computer used for the actual processing.

- Facilities Management (FM) (also referred to as 'Reserve Management' or 'System Management') The management of all or a part of a user's data processing functions under a long-term contract (not less than one year). To qualify as FM, the contractor must directly plan and control as well as operate the facility provided to the user on-site, through communications lines, or in mixed mode. Simply providing resources even though under a long term contract and/or for all of a users' processing needs does not necessarily qualify as FM.
- Professional Services. Management consulting related to EDP, systems consulting, systems design and programming, and other professional services are included in this category. Services can be provided on a basis of: "Time and materials," whereby the user pays for the time used of an individual on a daily or other fixed rate, or "fixed price," where the user pays a fixed fee for a specific task or series of tasks.
- Software Products. This category is for users' purchases of systems and applications packages for use on in-house computer systems. The figures quoted include lease and purchase expenditures, as well as fees for work performed by the vendor to implement the package at the users' sites. Fees for work performed by organizations other than the package vendor are counted in Professional Services. The two sub-categories are:
 1. Systems Packages are operating system, utilities, and language routines that enable the computer/communications system to perform basic functions. This software is provided by the mainframe manufacturers with their hardware; other vendors provide improved versions of this and special-purpose routines. This classification includes compilers, data base management software, communications packages, simulators,

performance measurement software, diagnostic software, and sorts.

2. Applications Packages are software which perform processing to serve user functions: they consist of general purpose packages, such as a payroll, accounting and inventory controls, and special purpose packages such as personal trust, airline scheduling, and demand deposit accounting.
- Processing Services encompasses FM, RCS, and Batch Services: They are categorized by type of service, as distinguished from mode of service, bought by users as follows:
 - General business services are processing services for applications which are common to users across industry categories. Software is provided by the vendor; this can be a complete package, such as a payroll package, or an application 'tool,' such as a budgeting model, where a user provides much of the customizing of the finished product it uses. General Business processing is often repetitive and transaction oriented.
 - Scientific applications services are the processing of scientific and engineering problems for users across industries. The problems usually involve the solution of mathematical equations. Processing is generally problem solving and is non-repetitive, except in the sense that the same packages or 'tools' are used to address different, but similar, problems.
 - Specialty applications services provide processing for particular functions or problems unique to an industry or industry group. The software is provided by the vendor either as a complete package or as an application 'tool' which the user employs to produce its unique solution. (Specialty applications can be either business or scientific in orientation; data base services where the vendor supplies the data base and controls access to it (although it may be owned by a third party) are also included under this category.

Examples of Specialty applications are: seismic data processing, numerically controlled machine tool software control development, and demand deposit accounting.

- Utility services are those where the vendor provides access to a computer and/or communications network with basic software that enables any user to develop its own problem solution or processing system. These basic tools include terminal handling software, sorts, language compilers, data base management systems, information retrieval software, scientific library routines, and other systems software.

- All expenditures and revenues addressed are 'available' in that they are open for competition. 'Captive' figures, which refer to expenditures by a user for services from a subsidiary company, such as Boeing Aircraft with Boeing Computer Services (BCS) are not included. They may be referred to when examining our individual 'spin-off' vendor, such as BCS.

- When any questions arise as to the place to properly count certain user expenditures, INPUT addresses the questions from the user viewpoint and categorizes the expenditures according to the answer to the question 'What does the user perceive it is buying?'

APPENDIX C - QUESTIONNAIRE

INPUT QUESTIONNAIRE

VENDOR QUESTIONNAIRE

a. CPAs

d. ARCHITECTS

b. LAWYERS

e. ENGINEERS

C. CONSULTANTS

f. R&D ORGANIZATIONS

G. OTHER SERVICE INDUSTRY

3.

Geog.
Dist.

Size of
Av. User# of
Clients

\$ by Av
User

Expected
User Growth

Share o
Your Re

Type

4. Does your product/service have any unique capabilities which would make it more attractive to clients than your competitors'?

5. Do your marketing, sales, or support organizations have any unique capabilities or characteristics which would make your company more attractive to potential clients than your competitors?

6. Who are your major competitors? In what order would you rank yourself and your major competitors in terms of market share?

COMPETITOR

RANK

7. HOW DO YOU PRICE YOUR SERVICE/PRODUCT TO YOUR CLIENTS?
(Transaction pricing, Connect, memory, CPU, etc)

8. What level of person in an organizations needs to be convinced before the company will buy your service?

9. What is your opinion of the potential threat of mini-computers to your business in these areas?

10. What do you think is the total dollar market for your service,

a. Now (1976) \$ _____

b. 1981 \$ _____

11. What percentage of all those who could use a product/service such as you provide do you believe are actually using it,

a. Now _____%

b. 1981 _____

12. Where will the new users come from?

13. Do you buy computer services yourself (time, software, etc)?

14. Please send product literature.

15. Please provide data for CAMP

CONFIDENTIAL

INPUT QUESTIONNAIRE

MARKET ANALYSIS PROGRAM - SERVICES INDUSTRY

USER'S QUESTIONNAIRE

1. How do you see your company growth 1975 - 1976 - 1977 - 1981?

2. Is this the same for your industry overall?

3. Compared to your expected revenue growth, will your expenditures for EDP (check one):

____ a. Increase faster What rate? _____

____ b. Increase at the same rate

____ c. Increase at a slower rate What rate? _____

4. What concerns do you have about EDP use?

5. What EDP changes have you made in the past year?

6. What EDP changes do you expect to make in this year and next?

7. What EDP changes do you expect to make by 1980?

8. Is your EDP activity centralized, or decentralized?

9. What are your computer systems?

	MAINFRAME	OP. SYS.	DB LANG?	ON-LINE SYST?
NOW				
FUTURE				

10. a. How much is your internal EDP Budget, and how will that change in 1977, and by 1981 (if respondent declines to give dollars, ask for % of annual revenues).

	1976	1977	1981	REASONS FOR CHANGE
BUDGET (\$ or %)				

- b. How is that budget to be allocated among people, hardware, and other data center costs?

	1976	1977	1981	REASONS FOR CHANGE
PEOPLE (# or %)				
HARDWARE				
OTHER CENTER COSTS				

11. How much is being spent monthly (on the average) by your entire company for outside computer services?

Total \$ _____ per month

or

_____ % of total EDP budget

12. How is that expenditure distributed, and how does this year compare with last year (1975), and your expectations for next year (1977)?

	1976	76/75	77/76	'76 \$ BY APPLICATION
REMOTE COMPUTING				
Timesharing				
Remote Batch				
Data Base				
BATCH PROCESSING				
FACILITIES MGMT				
SOFTWARE PRODUCTS				
Systems				
Applications				
SOFTWARE SERVICES				
Consulting				
Programming				
EDUCATION				

13. Of those applications which are processed outside your company,

- a. Which are considered primary, and which secondary?
- b. What mode of processing is used?
- c. What vendor is used?
- d. Are you satisfied with the vendor's service?

FUNCTIONAL AREA	APPLICATION PRIMARY SECONDARY		MODE & VENDOR			SATIS- FIED?
			Batch	RB	Inter.	

14. Why do you use (RCS/FM/BATCH/, etc....whichever is appropriate)??

15. In order of priority, what will be the new applications you will develop, or require?

1.

2.

3.

4.

5.

16. Do you have the resources to do all these?

17. Which ones could be done outside (development or processing)?

18. What services might you consider using, if whatever you wanted were available?

19. What services would you like to have offered to you now?

20. Are there any applications which you would not consider doing outside? If so, which, and why not?
21. Have you considered/would you consider facilities management?
22. What is your opinion of doing EDP work in-house, versus using outside services?
23. What developments might increase/decrease your use of computer services?
24. When you do use an outside service, who usually chooses the vendor?
25. Please rank these characteristics in choosing a vendor
(1 = unimportant; 5 = very important):
- a. Geographic location of vendor _____
 - b. Vendor's technical expertise in your field _____
 - c. Vendors hardware/software (explain) _____
 - d. Availability of a network, natl or intl. _____
 - e. Price _____
 - f. Other _____
26. Under what conditions might you change vendors?
27. All other things being equal, how much of a price reduction would you require, to change vendors?

28. How do your vendors presently establish their billings to you
(Transaction pricing? Fixed minimum plus monthly variable?
CPU, connect, storage costs?)
29. How much support (sales, installation, conversion) did you
require from your vendor(s) at the time of installation?
30. How much do you require now?
31. Do you have any technical requirements upon your vendors?
- a. Computer hardware?
 - b. Software?
 - c. Network?
 - d. Languages used?
 - e. Terminals offered?
 - f. Communications speeds?
32. Have you considered, or will you consider using minicomputers
instead of computer services?

33. Would you rate on a scale of 1 to 10 (1 = unsatisfactory, 5 = average, and 10 = outstanding), the computer services vendors you now use, plus any others with which you are familiar?

VENDOR

RATING

COMMENTS

34. Why did you choose the vendors you are now using?

35. Do you have any advice or suggestions you would like to offer to vendors of computer services?

Interviewer notes



