COMPUTER SERVICES MARKETS IN INSURANCE COMPANIES

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COMPUTER SERVICES MARKETS IN INSURANCE COMPANIES

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COMPUTER SERVICES MARKETS IN INSURANCE COMPANIES

LIST OF EXHIBITS

1 INTRODUCTION

I INTRODUCTION

- This report is produced by INPUT as part of the Market Analysis Service and analyzes Computer Services Markets in Insurance Companies.

- This area of research was selected because of client interest. The insurance sector is the fifth largest computer services market area.

- The purpose of this study is to analyze both present and future markets and to provide basic technical background and recommendations for both market entry and expansion.

- Before the research began, interested INPUT clients were contacted for specific areas of interest. The suggested points were included in the questionnaires.

- Interviews were conducted from August through October 1979.

- The research conducted in this report includes 100 interviews distributed as shown in Appendix A. Separate interview questionnaires were used for users and for vendors. Copies of the questionnaires are included in Appendix E.

- Definition of terms used in this report appear in Appendix C.

- The forecasts included in this report include a 6% factor for inflation. The difference between 6% and the annual increase in the Consumer Price Index (CPI) is assumed to be offset by technology.

- Inquiries and comments on the information presented in this report are invited from clients.

II EXECUTIVE SUMMARY

A. COMPUTER SERVICES MARKETS IN INSURANCE COMPANIES

1. SCOPE OF THE STUDY

- This report is meant to amplify and support the Insurance sector analysis presented in INPUT's "Computer Services Industry 1978 and 1979 Annual Reports."

- The Insurance Sector has been divided into four subsectors:

  - Life/Health Insurance.

  - Property/Casualty Insurance.

  - Government Funded Health Insurance.

  - Insurance Agents and Brokers.

- The types of firms included in each subsector according to their Standard Industrial Classification Code (SIC) designation are shown in Appendix A.

- This report covers Computer Services Markets in Insurance Companies.

- A subsequent report covers Computer Services Markets in Government Funded Health Insurance.

- A future report will cover Computer Services Markets in Insurance Agents and Brokers.

- This report has been divided into the following subsectors:

  - Life/Health Insurance.

  - Property/Casualty Insurance.

- The firms within each subsector were categorized by size according to a key market characteristic determined by government and trade association data. For example, Exhibit II-1 shows that property/casualty companies are considered large when their annual net premium revenue falls between $250 million and $1 billion.

- Each of the subsectors presented in Chapters III and IV is meant to stand alone as an independent report.

- The material presented below, however, applies to insurance companies as a whole.

2. MARKET STRUCTURE

- The market is composed of some 2,000 corporate groups, each group composed of one to fifteen companies: 1,200 life/health, and 800 property/casualty groups.

- Financial assets are concentrated in very large and large companies or groups.

  - Very large and large life/health groups (less than 5% in number) control 78% of the total assets.

EXHIBIT II-1

DETERMINATION OF INSTITUTION SIZE FOR
INSURANCE COMPANY SUBSECTORS

INSTITUTION SIZE	LIFE/HEALTH INSURANCE COMPANIES	PROPERTY/ CASUALTY INSURANCE COMPANIES
	ASSETS	ANNUAL NET PREMIUM REVENUES
VERY LARGE	>$5 BILLION	>$1 BILLION
LARGE	1-5 BILLION	250 MILLION-1 BILLION
MEDIUM	100 MILLION-1 BILLION	100-250 MILLION
SMALL	<100 MILLION	<100 MILLION

- Very large and large property/casualty groups (7% of the total number) hold 80% of the total assets.

- Net premium income (total income less investment income), the best indicator of daily business activity, was nearly equally divided in 1978: almost $80 billion for life insurance companies, and nearly $82 billion for casualty insurance companies.

- In terms of revenues, casualty insurance companies are growing more rapidly with an average annual growth rate (AAGR) of 13% than life insurance companes (10% AAGR).

- While both types of companies are highly automated, life insurance companies spend more (1.5% of net premium revenue) than casualty insurance companies (1.0% of net premium revenue) for EDP.

- Successful marketing does not necessarily mean targeting all computer services toward very large and large firms.

  - Very large and large insurance companies do nearly all their mainline applications processing in-house and are prime candidates for software products and professional services.

  - Medium and small insurance companies are more likely to use outside processing services.

- Inflation is the major near term factor influencing insurance company business activity. By reducing consumer income available for life/health security expenditures and making personal property/casualty lines unaffordable, inflation is constraining insurance company growth and profitability. Insurance company response in such areas as new life products, comprehensive commercial casualty plans, and increasing investment yield offer increased opportunity for vendors' software products and processing services.

- National Health Insurance (NHI) is the major factor introducing long range structural change to the life/health insurance subsector. NHI, when imple-

mented, will require interfacing with federal and state agencies, with telecommunication networks, and with products and services more closely allied to Remote Computing Services (RCS) vendors than to insurance company in-house EDP departments.

3. MARKET FORECAST

- The market for computer services in life insurance companies is good. In 1978, these firms spent $324 million on computer processing, software products, and professional services. With an AAGR of 11%, insurance companies' total computer services expenditures will rise to over $600 million in 1984.

- Firms spend, on the average, 15% of total EDP budgets on computer services. This portion is expected to decline to 13.4% by 1984. Insurance companies are bringing timesharing services in-house and utilizing minicomputers to replace RCS specialty applications.

- As shown in Exhibit II-2, life insurance is the largest subsector with 53% of total 1978 user expenditures.

- While casualty insurance company total revenues and revenue growth is somewhat larger than those of life insurance companies, these factors are not enough to offset the fewer number of and lesser portion spent on automation by casualty companies.

- "Other" insurance companies (see Appendix B), representing less than 10% of total 1978 insurance company expenditures, appear to have a continued need for "value added" RCS services. Computer Services expenditures are forecast to grow at closer to industry aggregate growth.

- As shown in Exhibit II-3, the combination of software products and related systems and programming professional services are a major market subsegment.

EXHIBIT II-2

COMPUTER SERVICES MARKET FORECAST FOR
INSURANCE COMPANIES BY INDUSTRY SUBSECTOR
1978-1984

INDUSTRY SUBSECTOR	USER EXPENDITURES ($ MILLION)			
	1978	1979	1984	AAGR 1978-1984 (PERCENT)
LIFE AND HEALTH	$ 172	$ 190	$ 314	11%
PROPERTY AND CASUALTY	122	135	228	11
OTHER	30	34	66	13
TOTAL	$ 324	$ 359	$ 608	11%

EXHIBIT II-3

COMPUTER SERVICES MARKET FORECAST
FOR INSURANCE COMPANIES
BY SERVICE MODE, 1978-1984

COMPUTER SERVICE		USER EXPENDITURES ($ MILLION)			
MODE	TYPE	1978	1979	1984	AAGR 1978-1984 (PERCENT)
REMOTE COMPUTING SERVICES	GENERAL BUSINESS	$ 33	$ 38	$ 74	14%
	INDUSTRY SPECIFIC	20	22	37	11
	UTILITY	10	11	14	6
	TOTAL	63	71	125	12
FACILITIES MANAGEMENT	GENERAL BUSINESS	–	–	–	–
	INDUSTRY SPECIFIC	33	37	65	12
	UTILITY	–	–	–	–
	TOTAL	33	37	65	12
BATCH	GENERAL BUSINESS	12	13	16	5
	INDUSTR SPECIF	36	38	51	6
	UTILITY	5	5	7	5
	TOTAL	53	56	74	6
TOTAL PROCESSING	GENERAL BUSINESS	45	51	90	12
	INDUSTRY SPECIFIC	89	97	153	9
	UTILITY	1	16	21	6
	TOTAL	149	164	264	11
SOFTWARE PRODUCTS	SYSTEM	30	34	66	14
	APPLICATION	72	81	149	13
	TOTAL	102	115	215	13
PROFESSIONAL SERVICES		73	80	129	10
GRAND TOTAL		$ 324	359	$ 608	11%

-	Professional Services	23%
-	Software Products	31%
	TOTAL	54%

- If IBM and other mainframe vendors continue to unbundle system software, the AAGR for systems products could well rise above its current forecast of 14%.

- The growth rate (11% AAGR) for total processing services ($149 million in 1978) is dampened by the decline of batch processing as users demand on-line services to help contain labor costs.

  - Only the RCS growth rate (14% AAGR), of general business services, rivals that of system software products as users turn to better financial and corporate planning and investment analysis to maintain profitability in times of high inflation.

4. COMPETITIVE STRUCTURE

- A wide variety of vendors serve the insurance company market. Of the estimated 150 vendors, most are software vendors and service bureaus that frequently specialize in one subsector and in one local area or region. As specialists, some vendors have expanded to offer services nationwide. Larger RCS vendors have captured significant market segments in both life and casualty insurance subsectors. However, no one vendor can be said to dominate the marketplace.

- Life and casualty insurance companies themselves offer both software products and computer processing services. Most of the computer services insurance companies offer are captive (in-house) to the corporate groups of which they or their service company subsidiary are a part. Insurance company computer

services to the industry at large are less than 10% of total insurance computer services expenditures.

- Electronic Data Systems (EDS) dominates (70%) the Facilities Management (FM) segments of both life and casualty insurance subsectors. With 1978 insurance company related revenues of $30 million, EDS does FM for 22 companies. It also services another 20 companies with processing services, software products, and professional services.

- The Service Bureau Company, the leading RCS vendor, offers both mainline batch and remote batch processing and computer services to both life and casualty insurance companies in other areas, such as marketing, corporate and financial planning, and investment management. SBC has less than 20% of the insurance company computer processing (batch and remote batch) market segment.

- Informatics' Equimatics Division, through its LIFE-COMM system, specializes in software products and professional and processing services to the life/health insurance subsector. With 1978 revenues of $10 million ($6 million for software and $4 million for processing services) Informatics serves over 50 life insurance companies, over half of which are for software products.

- Insurance Systems of America (ISA) is a leading vendor of software products to insurance companies. Revenues of nearly $12 million are derived mostly from the casualty insurance sector and include some $2 million in processing revenues.

- CYBERTEK, Computer Products, Inc. specializes in software products to life companies. The CYPROS product line operates on mainframes for mainline processing. CYBERTEK also delivers specialty products operating on mini-computers for district offices and home office MIS and accounting. With 1978 total revenues approaching $10 million, CYBERTEK, the leading vendor, has a 20% market share of the life insurance software products market segment.

B. RECOMMENDATIONS

- The market for computer services to insurance companies, in an overall sense, is good. Opportunities for RCS market entry and expansion are better for specialized areas than they are for supplying mainline processing.

- Compared to other industry groups, insurance companies have a lower internal cost of capital. On the one hand, insurance companies have incentive to do data processing in-house. On the other, they have a scarcity of systems and programming talent. As a consequence, insurance companies are an excellent market for software products and professional services.

- Many life/health and property/casualty companies are part of corporate groups containing both company types. Vendors considering services to insurance companies should be prepared to service both subsectors.

- The character of insurance company data processing is changing from principally simple transactions against large data files in batch mode to highly complex analysis, data access, and data combination in an on-line, more real-time processing mode. Alert computer services vendors can use their superior systems expertise to develop "value added" products and services in selected and specialized areas.

- While insurance companies buy systems packages intact, they usually require significant modification to meet end user needs. Vendors should develop software packages on a highly modularized basis and offer professional analysis and programming services for customization.

- Insurance companies frequently turn to minicomputers to initially support new insurance programs or new business lines. Vendors should develop software products that operate on minicomputers - preferably IBM plug compatible. RCS vendors should plan to offer applications operating on user site hardware systems that can be interfaced with insurance company district and regional offices via vendor networks.

- Vendors considering the insurance industry should enhance their expertise by:

  - Acquiring specialty insurance software product and professional service firms.

  - Acquiring local insurance service bureaus which lack capital for shifting to on-line operations.

  - Establishing joint ventures with specialty firms to market insurance systems applications on RCS vendor networks.

  - Keeping abreast of developments in national health insurance which, when implemented, will greatly change health insurance processing for life insurance companies.

- Companies with national networks should consider offering RCS networks for data acquisition and inquiry, interconnecting branch/district offices and managing agents to home offices.

- A potentially significant new opportunity would be to participate in the development of the independent insurance agent/broker network under development by the Institute for Insurance Research (IIR).

III COMPUTER SERVICES MARKET IN LIFE/HEALTH INSURANCE

III COMPUTER SERVICES MARKET IN LIFE/HEALTH INSURANCE

A. SUMMARY AND RECOMMENDATIONS

1. SUMMARY

- Some 1,200 highly automated, corporate life insurance groups spend 1.5% of net premium revenues on EDP.

- Life/health companies spent the major portion (85%) of the total EDP expenditures of $1.2 billion in 1978 for in-house operations.

- Computer services expenditures ($172 million in 1978) will rise at an AAGR of 11% to reach $314 million in 1984. The below average growth (less than the 16% AAGR for total EDP expenditures) is attributed to the shift to in-house timesharing and the growth in use of minicomputers.

- Software products and professional services are a major market area. Combined 1978 revenues of over $90 million exceed those for processing services.

- With a 14% AAGR, RCS for general business applications (financial management and planning, MIS, marketing, etc.) is the largest growth area.

- Facilities management, with 20% of total processing, is still a viable market area.

- Batch processing is on the decline. With a 6% AAGR, the batch mode will fall to less than 30% of total processing by 1984 as competition eliminates many batch service bureaus.

- Inflation is the major near-term factor influencing life insurance company business activity. Inflation is reducing consumer income available for personal security, is greatly increasing labor costs, and is increasing the need for greater investment return.

- Life insurance companies are responding to these problems by placing increasing emphasis on on-line operations and by offering more complex products (such as variable life insurance) and additional services (such as group pension plans).

- National Health Insurance is the major factor influencing future life/health insurance company business activity. Through the development of on-line health claims processing capability, larger life insurance companies are positioning themselves to participate in NHI when it is implemented.

- Life insurance companies spend 70% of their software budgets on mainline applications.

  - Personal life.
  - Group life/health.
  - Claims.
  - Pension plans.
  - Billing and collection.
  - Corporate accounting.
  - Investment.

- In addition to processing some mainline applications, life insurance companies are using computer processing services vendors in such other areas as:

  - Corporate planning.
  - Actuarial computation.
  - Mass marketing.
  - Sales illustration.
  - Mortgage servicing.

- With a chronic shortage of systems and programming personnel, life insurance companies seek help in application development, both in terms of software products and professional analysis and programming services.

- Life companies are most interested in products and services oriented towards on-line, real time operations.

- Software products that support the new IBM 4300 series will be in high demand by life companies.

- Distributed data processing is being used in life insurance company home offices for specific lines such as group pension plans. The greatest impact of DDP is in district and managing agent offices, where DDP is being used for data entry, inquiry, and remote batch transmission to and from the home office, and for local processing.

- User site hardware systems (USHS) were of interest to only the very large and large life insurance companies. Application areas with USHS were actuarial computation and group pension/compensation plans.

- The use of minicomputers in life insurance companies is widespread. Approximately 25% of respondents had replaced one or more RCS applications with a minicomputer and another 21% of the respondents were considering doing likewise.

- Over 80 vendors service the life/health computer services marketplace. Most of the vendors provide software products/professional services or are either local service bureaus or suppliers of specialty systems based on minicomputers.

- Except for providing processing within their corporate groups (considered in-house), life insurance companies control less than 10% of the computer services marketplace.

- SBC is the leading RCS vendor. The company provides both mainline processing with the TCC Life/70 system plus specialty services for marketing, corporate planning, and investment management.

- EDS, the leading FM vendor, with 14 life companies receiving its services, also supplies processing services and has installed its life administration system as a software product in a total of 12 other life insurance companies.

- Informatics, specializing in services to life insurance companies, supplies the LIFE-COMM system, both as a software product and as an RCS service, to over 50 life insurance companies.

2. RECOMMENDATIONS

- Target products to operate in an on-line environment.

- Deliver specialized systems that operate on minicomputers, either standalone or as user site hardware systems (USHS).

- Modularize product offerings and offer customization to meet end user requirements through professional services.

- Plan to support mainline applications on a distributed basis, using IBM 4300 Series systems.

- Look to specialized areas, rather than mainline applications, for market entry.

- Acquire specialty firms to expand offerings over national RCS networks.

- License rights to deliver life insurance company specialty software products over RCS vendor networks, enhancing expertise and market coverage.

- Acquire or purchase local services bureaus which lack capitol to shift to on-line operations.

- Apply banking/finance products and services to the changing investment requirements of life insurance companies.

B. MARKET ANALYSIS AND FORECAST

1. MARKET STRUCTURE

- There are about 1,750 life insurance companies in the United States. There has been little change in this number since the 1960s.

- The 1,750 individual companies fall into some 1,200 corporate groups. Distribution by asset size is shown in Exhibit III-1.

- Total 1978 assets of $399 billion are rising at an AAGR of 8%, with the very large companies (14% of the total number), holding the majority (58%) of total assets. This group of companies also shows the most rapid increase in assets - a 10% AAGR.

EXHIBIT III-1

MARKET STRUCTURE OF LIFE/HEALTH INSURANCE SUBSECTOR BY SIZE IN 1978

COMPANY / GROUP SIZE	SIZE (ASSETS)	NUMBER	ASSETS ($ BILLION)	AAGR (PERCENT)	REVENUES (NET PREMIUMS) ($ BILLION)	AAGR (PERCENT)
VERY LARGE	>$5 BILLION	14	$ 233.0	10.4%	$ 38.9	8.6%
LARGE	$1-5 BILLION	39	76.5	2.5	15.5	11.0
MEDIUM	$100 MILLION-$1 BILLION	201	42.0	7.9	14.1	14.2
SMALL	<$100 MILLION	946	47.5	5.5	11.2	9.7
TOTAL	-	1,200	$ 399.0	8.0%	$ 79.7	10.2%

- Total 1978 revenues (net premiums) of nearly $80 billion are growing at an AAGR of 10% and will reach nearly $143 billion by 1984.

- Net premium revenues, indicating the level of service activity, appear to correlate closely to the level of EDP expenditures.

- The top 53 companies/groups in the industry (4.4% of the total number of companies) garner 68% of the industry's total revenues.

2. MARKET FORECAST

- Respondent data indicates that life/health insurance companies, on the average and depending on size, spent between 1.0% and 2.6% of annual net premiums on EDP (Exhibit III-2). Average expenditures were 1.5% of the total net premium revenue.

- EDP expenditures were predominantly (85%) for in-house operations.

- Computer services processing expenditures ranged from 2% to 17%, or an average of 7% of total 1978 EDP expenditures.

- Software products and professional services revenues ranged from 4% to 17% for an average of 8% of the total.

- Respondent data were applied to the total population to derive the forecasts that follow.

- Total annualized EDP expenditures, of nearly $1.2 billion in 1978, will rise to nearly $2.4 billion in 1984, for a growth exceeding 12% per year (Exhibit III-3).

- Computer services expenditures totaled $172 million in 1978, or 15% of EDP expenditures (Exhibit III-4).

EXHIBIT III-2

AVERAGE 1978 EDP EXPENDITURES FOR
LIFE/HEALTH INSURANCE COMPANIES AS REPORTED BY RESPONDENTS

COMPANY SIZE	REVENUES (NET PREMIUM INCOME) ($ MILLION)	ANNUAL EDP EXPENDITURES ($ MILLION)				PORTION OF REVENUES (PERCENT)	AVERAGE FIVE YEAR GROWTH (PERCENT/ YEAR)
		IN-HOUSE	COMPUTER PROCESSING SERVICES	SOFTWARE PRODUCTS/ PROFESSIONAL SERVICES	TOTAL		
VERY LARGE	$ 2,400	$ 28.5	$ 0.05	$ 1.0	$ 30.0	1.2%	13.9%
LARGE	364	3.3	0.1	0.2	3.6	1.0	12.6
MEDIUM	101	1.4	0.1	0.1	1.6	1.9	13.6
SMALL	$ 11	$ .20	$ 0.05	$ 0.05	$ 0.3	2.6%	8.2%

EXHIBIT III-3

TOTAL EDP EXPENDITURES FOR
LIFE/HEALTH INSURANCE COMPANIES BY SIZE,
1978-1984

COMPANY SIZE	EDP EXPENDITURES ($ MILLION)			
	1978	1979	1984	AAGR 1978-1984 (PERCENT)
VERY LARGE	$ 420	$ 478	$ 912	13.9%
LARGE	140	158	286	12.6
MEDIUM	321	365	691	13.6
SMALL	298	322	478	8.2
TOTAL	$ 1,179	$ 1,323	$ 2,367	12.3%

EXHIBIT III-4

DISTRIBUTION OF EDP EXPENDITURES FOR LIFE/HEALTH INSURANCE COMPANIES BY SIZE IN 1978

COMPANY SIZE	EDP EXPENDITURES ($ MILLION)			
	IN HOUSE	COMPUTER PROCESSING SERVICES	SOFTWARE PRODUCTS/ PROFESSIONAL SERVICES	TOTAL
VERY LARGE	$ 399	$ 8	$ 13	$ 420
LARGE	127	4	9	140
MEDIUM	283	19	19	321
SMALL	198	50	50	298
TOTAL	$ 1,007	$ 81	$ 91	$ 1,179

- $81 million was spent for processing services.

- $91 million was spent for software products/professional services.

- Computer services expenditures are rising at an AAGR of nearly 11% and will reach $314 million by 1984 (Exhibit III-5). Growth will be somewhat less than total EDP expenditures due to the shift to in-house timesharing and growth in the use of minicomputers by small firms.

- The use of RCS for general business applications (financial management and planning, MIS, marketing) is the largest growth area, with an AAGR of 14% (Exhibit III-6).

- Batch services, with a 6% AAGR, is a fading marketplace as companies shift to in-house minicomputers and to on-line services.

- Software products, coupled with professional programming and consulting services, is a major market area comprising 53% of the total 1978 computer services market.

3. INFLUENCING FACTORS

a. Government

- National health insurance will have a major impact on the health portion of life insurance business. Life insurance companies are positioning themselves to act as claims administrators or processors under the program.

- The exclusion of life insurance companies from the anti-trust provisions of the McCarran-Ferguson Act is under attack by the FTC and consumer groups, resulting in increased federal reporting by life insurance companies. The requirements of government reporting are also becoming stringent in other areas; SEC and ERISA requirements for pension funds and FHLB requirements for the mortgage market.

EXHIBIT III-5

FORECAST OF COMPUTER SERVICES EXPENDITURES FOR
LIFE/HEALTH INSURANCE COMPANIES BY SIZE,
1978-1984

COMPANY SIZE	EDP EXPENDITURES ($ MILLION)			
	1978	1979	1984	AAGR 1978-1984 (PERCENT)
VERY LARGE	$ 21	$ 24	$ 46	13.9%
LARGE	13	15	27	12.6
MEDIUM	38	43	81	13.6
SMALL	100	108	160	8.2
TOTAL	$ 172	$ 190	$ 314	10.6%

EXHIBIT III-6

FORECAST OF COMPUTER SERVICES EXPENDITURES FOR
LIFE/HEALTH INSURANCE COMPANIES
BY SERVICE MODE, 1978-1984

COMPUTER SERVICE		USER EXPENDITURES ($ MILLION)			
MODE	TYPE	1978	1979	1984	AAGR 1978-1984 (PERCENT)
REMOTE COMPUTING SERVICES	GENERAL BUSINESS	$ 18	$ 21	$ 39	14%
	INDUSTRY SPECIFIC	10	11	19	12
	UTILITY	6	7	9	8
	TOTAL	34	39	67	12
FACILITIES MANAGEMENT	GENERAL BUSINESS	–	–	–	–
	INDUSTRY SPECIFIC	16	18	31	12
	UTILITY	–	–	–	–
	TOTAL	16	18	31	12
BATCH	GENERAL BUSINESS	8	8	10	6
	INDUSTRY SPECIFIC	20	22	30	7
	UTILITY	3	3	4	5
	TOTAL	31	33	44	6
TOTAL PROCESSING	GENERAL BUSINESS	26	29	49	11
	INDUSTRY SPECIFIC	46	51	80	10
	UTILITY	9	10	13	6
	TOTAL	81	90	142	10
SOFTWARE PRODUCTS	SYSTEM	15	17	31	13
	APPLICATION	35	39	68	12
	TOTAL	50	56	99	12
PROFESSIONAL SERVICES		41	44	73	10
GRAND TOTAL		$ 172	$ 190	$ 314	11%

- The increase in Social Security withholding is taking a greater portion of consumer income available for personal security, forcing the companies to compete harder for the consumer dollar.

b. Economics

- Inflation is attacking the very basis of the life insurance companies' business.

- Inflation is seriously eroding the value of ordinary life insurance lines, causing companies to offer more complex plans such as variable life and adjustable life insurance.

- Rising personnel costs are forcing companies to accelerate the shift to on-line operations, both in the home office and in the field.

- The structure of life insurance company investment portfolios has become more complex due to both the need for higher yields (because of inflation) and the increase in management of retirement funds. Life insurance companies are increasing their mortgage portfolios and upgrading the quality of their near term securities through additional computer services.

- The internal cost of capital for life insurance companies is relatively lower than that found in industrial companies. This results in a strong tendency to buy hardware for internal use. However, their systems and programming personnel cannot meet software requirements for mainline applications. Thus, the trend is towards incremental use of software products and professional services for mainline applications and computer services vendors for all specialty applications.

- The increased number of women in the labor force offers new opportunities for life insurance companies to sell both traditional and specialized products, increasing the use of EDP.

c. Competition

- Life insurance companies have aggressively entered the pension plan market, both on an individual and group basis. This has resulted in increased computer service and software product requirements for plan administration and fund investment.

- Insurance companies are shifting their personal line marketing programs to higher income level people, offering comprehensive services that include both current life/health protection and retirement/estate planning.

- Life insurance companies are finding the independent agency system increasingly expensive as a distribution vehicle. Some companies are shifting from general agents to managing agents or insurance company employees and to establishing standardized computer support from the home office. Other companies are concentrating on computer-aided direct marketing programs to sell group term life and health insurance to consumers.

- There is a trend for life insurance companies to use their computers for more complex information processing as opposed to traditional transaction/file processing, affording greater opportunities for specialized computer services and software products.

C. USER ANALYSIS

1. APPLICATIONS

- Respondents report seven major applicational areas where EDP is used, mainly in-house or through computer services:

  - Personal life.

- Group life/health.
- Claims.
- Pension plans.
- Billing and collection.
- Corporate accounting.
- Investment.

- The major functions accomplished within each of the seven applications are shown in Exhibit III-7. For each function estimates are made of:
  - The portion of the function that is accomplished in the batch mode.
  - The portion of time that the on-line interactive mode is used for:
    - Data entry.
    - Inquiry.
    - Real-time file update.

- For example, the exhibit indicates that the loan/dividend function of the personal life application is accomplished primarily (greater than 75%) by batch processing and only minimally (less than 25% of the time) by on-line processing. The major on-line function is inquiry, which is accomplished between 25% and 75% of the time on-line. The function has little data entry, hence little associated real-time file update, both of which are accomplished in less than 25% of the time in the on-line mode.

EXHIBIT III-7

EDP UTILIZATION FOR LIFE/HEALTH INSURANCE APPLICATIONS

APPLICATION	APPLICATION FUNCTIONS	EDP UTILIZATION MODE OF SERVICE DELIVERY			
			ON-LINE		
		BATCH	DATA ENTRY	INQUIRY	FILE UPDATE
PERSONAL LIFE MANAGEMENT SYSTEM	• UNDERWRITING/POLICY ISSUE	XX	XXX	XX	XX
	• AGENT/AGENCY COMPENSATION	XX	XX	XX	XX
	• POLICY MAINTENANCE	XX	XX	XX	XX
	• LOANS/DIVIDENDS	XXX	X	XX	X
	• MANAGEMENT REPORTING	XXX	-	XX	-
GROUP LIFE/HEALTH MANAGEMENT SYSTEM	• UNDERWRITING/CERTIFICATE ISSUE	XX	XXX	XX	XX
	• AGENT/AGENCY COMMISSIONS	XX	XX	XX	XX
	• POLICY MANAGEMENT	XX	XX	XX	XX
	• RENEWAL	XX	X	XX	XX
	• MANAGEMENT AND ADMINISTRATOR REPORTING	XXX	-	XX	-
CLAIMS MANAGEMENT SYSTEM	• ELIGIBILITY	XX	XX	XX	X
	• CLAIM VALIDATION	XX	XXX	XX	X
	• CLAIMS CALCULATION/PAYMENT	XXX	XX	XX	XX
	• CLAIMS HISTORY	XXX	X	XX	X
	• MANAGEMENT REPORTING	XXX	-	XX	-

- = NOT USED X = LESS THAN 25% XX = BETWEEN 25% AND 75% XXX = MORE THAN 75%

EXHIBIT III-7 (CONTD)

EDP UTILIZATION FOR LIFE/HEALTH INSURANCE APPLICATIONS

APPLICATION	APPLICATION FUNCTIONS	EDP UTILIZATION MODE OF SERVICE DELIVERY			
			ON-LINE		
		BATCH	DATA ENTRY	INQUIRY	FILE UPDATE
PENSION PLAN MANAGEMENT SYSTEM	• COMPARATIVE PENSION PLAN PROPOSALS	X	XXX	XX	XXX
	• PLAN ADMINISTRATION	X	XXX	XX	XXX
	• PARTICIPANT ACCOUNTING	XXX	XX	XX	X
	• ERISA REPORTING	XXX	-	X	-
	• MANAGEMENT REPORTING	XXX	-	XX	-
BILLING/ COLLECTION SYSTEM	• PREMIUM BILLING	XXX	XXX	XX	-
	• PREMIUM COLLECTION	XX	XX	XX	XX
	• POLICY LAPSE ADMINISTRATION	XXX	XX	XXX	X
CORPORATE ACCOUNTING SYSTEM	• FINANCIAL REPORTING	XX	XXX	XX	XX
	• GENERAL LEDGER	XX	XX	X	X
	• PAYROLL/PERSONNEL	XXX	XX	X	X
	• FUNCTIONAL COST AND BUDGETING	XX	XX	XX	X
INVESTMENT MANAGEMENT SYSTEM	• INVESTMENT ANALYSIS	X	XXX	XXX	-
	• PORTFOLIO VALUATION	X	XX	XX	XX
	• INVESTMENT ACCOUNTING	XXX	XX	-	X
	• CASH FLOW ANALYSIS	XX	X	X	XX
	• REGULATORY REPORTING	XXX	-	-	-

— = NOT USED X = LESS THAN 25% XX = BETWEEN 25% AND 75% XXX = MORE THAN 75%

- The impact of the life insurance industry's shift toward increased use of on-line operations is evident in Exhibit III-7, where both batch and on-line processing can be seen to be equally important in handling policy management applications.

- Increased use of data base management systems and new processors, such as the IBM 4300 Series, will accelerate the on-line operational trend.

- Active participation in the pension plan market by life insurance companies has expanded the use of newer on-line systems for proposal preparation and plan administration.

- An increase in investable funds from pension plans has resulted in both increased investment activity and a shift in the type of investment portfolio (increased equity and mortgage holdings), which has increased the use of on-line operations for both investment analysis and portfolio evaluation.

- There are other applicational areas where life insurance company respondents report the use of EDP and, more frequently, computer processing services vendors.

  - Corporate financial planning and management.

  - Actuarial.

  - Cash management.

  - Mass marketing.

  - Sales illustration.

  - Mortgage servicing.

2. USE OF COMPUTER SERVICES

- Life insurance companies were one of the earliest users of automation.

- Major mainframe vendors, particularly IBM, Burroughs, and Univac, all specialize in this industry.

- As shown in Exhibit III-8, the major portion (86%) of EDP in the insurance industry is done in-house.

- The growth in computer processing services is restrained by large companies taking RCS in-house and smaller companies turning to minicomputers for their daily operation.

- Life insurance companies are turning to on-line systems to combat rapidly escalating labor costs.

- Respondent preferences for in-house EDP operations are illustrated in Exhibit III-9.

- Respondents' average EDP expenditures for computer services by company size is shown in Exhibit III-10. The importance of software products coupled with professional analysis and programming services relative to computer processing services is apparent at all company size levels.

- Data processing has become so integral to daily operations that the DP/MIS manager has reached vice president status in very large and large life insurance companies.

- The DP executive is not the only point of contact for computer services opportunities. Some 41% of the respondents indicated that computer services were used by other departments. Exhibit III-11 indicates other company areas - the major ones are corporate/finance and marketing.

EXHIBIT III-8

DISTRIBUTION OF RESPONDENTS' EDP UTILIZATION IN LIFE/HEALTH INSURANCE COMPANIES BY SIZE

COMPANY SIZE	EDP UTILIZATION (PERCENT)		
	IN-HOUSE	COMPUTER SERVICES	TOTAL
VERY LARGE	94%	6%	100%
LARGE	92	8	100
MEDIUM	88	12	100
SMALL	66	34	100
AVERAGE	86%	14%	100%

EXHIBIT III-9

RESPONDENTS' COMMENTS ON ACCOMPLISHING EDP IN-HOUSE AS CONTRASTED TO USING COMPUTER SERVICES VENDORS FOR LIFE/HEALTH INSURANCE COMPANIES

- "More control over environment. People and equipment more responsive." (VL)
- "Have very low cost of capital, buy everything - a conservative organization."(L)
- "FM may have been useful five years ago, but today DP is integral with the way we do business - on-line a must." (L)
- "Due to nature of business, requirements on turn-around time are critical - (prefer in-house)." (L)
- "As far as processing goes, have better control of priority, turn-around time." (M)
- "We have been automated, in-house since day one, would consider RCS under specialized circumstances." (M)
- "100% economic decision. Volume and needs for completing deadlines on time are more cost efficient in-house."(M)
- "Cost efficient and knowledge of industry specialty with in-house." (S)
- "Never looked outside. Because of size, good turn-around time (in-house). With our budget, couldn't afford outside services." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

EXHIBIT III-10

RESPONDENTS' USE OF OUTSIDE COMPUTER SERVICES FOR LIFE/HEALTH INSURANCE COMPANIES IN 1978

COMPANY SIZE	AVERAGE EXPENDITURES ($000)	
	PROCESSING SERVICES	SOFTWARE PRODUCTS/ PROFESSIONAL SERVICES
VERY LARGE	$ 512	$ 1,140
LARGE	89	194
MEDIUM	67	91
SMALL	42	46

EXHIBIT III-11

RESPONDENTS' USE OF
COMPUTER SERVICES NOT UNDER CONTROL OF
LIFE/HEALTH INSURANCE COMPANY EDP ORGANIZATION

USING DEPARTMENT	PORTION* OF USING RESPONDENTS (PERCENT)
CORPORATE/FINANCE	43%
MARKETING	36
ACTUARIAL	21
OPERATIONS	7
PERSONNEL	7

* MORE THAN ONE USING DEPARTMENT FOR SOME RESPONDENTS

- Scarcity of in-house analysis and programming resources compels life insurance companies to make major expenditures for software products. The cost effectiveness of software packages stands highest among the respondents' decision-making factors. The importance of other key functions is shown in Exhibit III-12.

- The majority of life insurance companies involve the final user in vendor service and product selection through automation executive committee action. Committee members include the data processing vice president, senior division vice presidents, and the corporate actuary. Respondents' comments on what they look for in product and services selection are included in Exhibit III-13.

3. EXISTING PRODUCTS

- Respondents had considerably more to say about their satisfaction with software products than they did about computer services.

- Exhibit III-14 categorizes the respondents' level of satisfaction with existing products. Less than one-third of the respondents were fully satisfied with existing software products.

- Respondents were most satisfied with system packages. Most system packages were "off the shelf," easily installed, well developed, adequately documented, and performed as specified.

- Most respondents bought the most applicable application software packages they could find, primarily because they lacked internal resources to design and develop the applications in-house. Respondents then modified the package, frequently through professional consulting services (vendor or contract programming) to meet end user requirements. Finally, respondents spent considerable time (some up to one year) installing and debugging the application.

EXHIBIT III-12

KEY FACTORS IN PRODUCT/SERVICE
SELECTION AS REPORTED BY
LIFE/HEALTH INSURANCE COMPANY RESPONDENTS

FACTOR	PORTION OF RESPONDENTS (PERCENT)
MAINTENANCE	42%
SUPPORT	38
COST-EFFECTIVE	58
REPUTATION OF VENDOR	17
RELIABILITY	25
APPLICABILITY	21
SYSTEMS CAPACITY/RESPONSE	25
DOCUMENTATION	17

EXHIBIT III-13

RESPONDENTS' COMMENTS ON PRODUCT/SERVICE SELECTION
AS REPORTED BY LIFE/HEALTH INSURANCE COMPANIES

- "Documentation - reliable software, stability of software vendor, service for product enhancements." (L)
- "Service. The systems we need can be built and maintained only by specialized vendors." (L)
- "Cost effective. Does it pay? Service is important, also reputation of vendor."(L)
- "We design and develop our own systems. We buy some from the Blue Cross Association. Rarely do we by one on the open market." (M)
- "Ease of use, stability of company. We look at how long he's been in business, will he stay in business, what is his experience with other users. Would prefer to deal with larger vendors." (M)
- "Does it run? Sounds silly but some software packages they are selling do not run or do what they're supposed to. Is it documented so our staff can employ software and readily modify it?" (M)
- "Functionality is important. Compatible with available equipment. Documentation, language, contract agreements on maintenance." (M)
- "Quality of package and vendor service most important. Price number one. Complete package with maintenance and up to date." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

EXHIBIT III-14

RESPONDENTS' LEVEL OF SATISFACTION WITH SOFTWARE PRODUCTS DEVELOPED FOR LIFE/HEALTH INSURANCE COMPANIES

LEVEL OF SATISFACTION	PORTION OF RESPONDENTS (PERCENT)
FULFILLS ALL REQUIREMENTS	30%
MEETS MOST REQUIREMENTS	45
HAVE SERIOUS DIFFICULTIES	20
LACKS MEETING SIGNIFICANT REQUIREMENTS	5

- Typical respondent comments on software product satisfaction are listed in Exhibit III-15.

4. NEEDED PRODUCTS

- Respondents have plans for a wide variety of applications development (Exhibit III-16). They plan to accomplish development through a combination of in-house development and software package procurement. Some 43% of all respondents interviewed were looking to buy software packages, frequently coupled with professional services.

- As shown in Exhibit III-17, respondents are seeking complete individual life and group life insurance processing systems that operate in an on-line environment.

- Respondents are also looking for integrated accounting systems that include payroll, general ledger, and personnel subsystems. Life insurance companies are particularly sensitive to equal opportunity/affirmative action issues.

- The growth of group pension plans through annuity contracts increases life insurance company interest in both pension accounting and investment analysis and decision systems.

5. INDUSTRY ISSUES

a. Technology

- IBM's announcement of the 4300 Series system has had a significant impact on the life insurance computer market. Over 70% of the respondents interviewed stated that it was the most important announcement in the EDP area in 1979 (Exhibit III-18).

- Larger life insurance companies are looking toward the availability of high speed digital communications networks, such as Satellite Business Systems

EXHIBIT III-15

RESPONDENTS' COMMENTS ON SATISFACTION WITH SOFTWARE PRODUCTS FOR LIFE/HEALTH COMPANIES

- "Not much available for Burroughs systems. Take systems in COBOL and convert to Burroughs COBOL." (L)
- "We buy systems and utility software off the shelf. The General Business products need little modification. On industry applications we modify to meet our specific needs." (L)
- "Need to do major modifications to software packages in order to make them fit our way of doing business. But time and cost to do it ourselves is out of the question." (L)
- "When we buy a software product other than a systems product, we have to revise it to properly interface with our system."(M)
- "No general packages in industry. Buy for $500K and spend $500K to fit company needs. It's better than doing it all in-house." (M)
- "Would like to find better credit life packages." (M)
- "Have fourteen year old package. No good due to work volume too large, old language. Will be replacing it. Other packages will be replaced in five years for same reasons." (S)
- "New system is enhancement of what we've got (replace fifteen year old system)." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

EXHIBIT III-16

RESPONDENTS' PLANS FOR APPLICATIONS
DEVELOPMENT FOR LIFE/HEALTH INSURANCE COMPANIES

APPLICATIONS	PORTION OF RESPONDENTS (PERCENT)
CLAIMS SYSTEM	23%
AGENCY SYSTEM	23
ON-LINE INQUIRY - DATA ENTRY	23
GROUP L & H ADMINISTRATION	13
NEW BUSINESS DEVELOPMENT SYSTEM	13
CREDIT LIFE SYSTEM	10
MASTER FILES ON-LINE	10
INVESTMENT SYSTEM	10

EXHIBIT III-17

REQUIREMENT FOR NEW APPLICATION
SOFTWARE PACKAGES AS REPORTED BY
LIFE/HEALTH INSURANCE COMPANY RESPONDENTS

APPLICATIONS	NUMBER OF RESPONDENTS
ON-LINE INSURANCE SYSTEMS (CASUALTY, LIFE, GROUP)	6
ACCOUNTING SYSTEMS	5
PENSION SYSTEM	3
CLAIMS PROCESSING	2
INVESTMENT	2
AGENCY SYSTEMS	2
RATING	1

EXHIBIT III-18

RESPONDENTS' ASSESSMENT OF MOST IMPORTANT EDP ANNOUNCEMENT IN 1979 FOR LIFE/HEALTH INSURANCE COMPANIES

EVENT	PORTION OF RESPONDENTS (PERCENT)
IBM 4300 SYSTEM	71%
REDUCTION IN HARDWARE COSTS	10
MEMORY TECHNICAL ADVANCES	6
DDP DEVELOPMENTS	6

TOTAL RESPONSE = 93%

(SBS) or Bell's ACS, to handle the ever-increasing communications requirements between district and agent offices and the home office.

b. Distributed Data Processing (DDP)

- Although 56% of all respondents had not yet considered DDP, many of the larger companies had, or were considering, implementation (Exhibit III-19).

- The home office functions of life insurance are highly centralized. However, DDP does find an application in such specific areas as group life/health insurance and pension plan administration.

- Life insurance companies are placing minicomputers in district offices for local processing with a tie-in to the central host for data entry, inquiry, and batch transaction transmission.

- Typical respondents' comments concerning DDP are shown in Exhibit III-20.

c. Facilities Management (FM)

- Although 12% of respondents (medium and large size companies) had implemented FM, 44% had rejected the concept and 44% (mostly small companies) had not considered it (Exhibit III-21).

- Respondents generally felt that data processing had become such an integral part of the day-to-day operations of life insurance companies that it would not be feasible to go to an FM arrangement.

- Respondents felt that the industry shift to on-line operations makes FM arrangements (mostly batch oriented) less viable.

- Typical respondent comments on FM arrangements are shown in Exhibit III-22.

EXHIBIT III-19

RESPONDENTS' PLANS FOR IMPLEMENTING DISTRIBUTED DATA PROCESSING (DDP) IN LIFE/HEALTH INSURANCE COMPANIES

PLANS	PORTION OF RESPONDENTS (PERCENT)
HAVE NOT CONSIDERED DDP	56%
ARE CURRENTLY CONSIDERING DDP	16
HAVE IMPLEMENTED DDP	12
WILL BE IMPLEMENTING DDP IN FUTURE	16
TOTAL	100%

EXHIBIT III-20

RESPONDENTS' COMMENTS ON USE OF DISTRIBUTED DATA PROCESSING (DDP) IN LIFE/HEALTH INSURANCE COMPANIES

- "Demand for local processing increasing. Converting to IBM 8100 in district offices." (VL)
- "Not going into that area. Have been centralized in the past." (L)
- "Have H-P in Home Office with intelligent terminals in four group sales offices." (L)
- "Have Wang computers in managing agents office for sales illustration and for agency accounting. May tie them into home office and shift data entry there, entered at night to home office." (L)
- "We will be using Wang computers for sales prospect letters, sales illustrations, expense control, and later inquiry. Using a Sigma software package for word processing. In 1980 will add CRTs and printer. Will transmit to home office at night for batch processing and do inquiry during the day." (M)
- "After we install current system. Will first start with minis in claims tied into mainframe. DDP an unavoidable trend." (M)
- "Too many different definitions of DDP. General idea is good. Have mini in actuarial department. Generally, in our company we need a centralized system." (M)
- "Volume would have to be a lot larger at branch locations to utilize DDP. We are watching it and will prepare for it. Cheaper way to go, but more than 5 years away." (S)
- "Small company, no need for DDP." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

EXHIBIT III-21

RESPONDENTS' ATTITUDES TOWARD
FACILITY MANAGEMENT (FM) ARRANGEMENTS
FOR LIFE/HEALTH INSURANCE COMPANIES

ATTITUDES	PORTION OF RESPONDENTS (PERCENT)
HAVE NOT CONSIDERED FM	40%
ARE CONSIDERING FM	4
HAVE IMPLEMENTED FM	12
HAVE REJECTED FM	44
TOTAL	100%

EXHIBIT III-22

RESPONDENTS' COMMENTS ON FACILITIES MANAGEMENT
ARRANGEMENTS FOR LIFE/HEALTH INSURANCE COMPANIES

- "EDS has proposed it, but but we don't think it would be economic. Ten years ago we would have seriously considered it, but no longer. Computer technology is an integral part of service we offer." (L)
- "Considered it several years ago. Data processing such an integral part of our business that we would lose fine edge of expertise if we farmed it out to EDS. Control by top executives is also an issue." (L)
- "Have used the FM route for medical claims processing, worked well." (M)
- "We considered it. Know some firms that tried it and then backed away from FM. The loss of control is a big factor with management." (M)
- "Have FM for operations - works very well. For applications, can lose whole company if you aren't careful. Prefer not to have FM in applications areas." (M)
- "Wouldn't touch it. Control factor important. Don't like to relinquish control." (M)
- "Seven years ago tried it. Cost went up, nothing got done, work not completed. Lost a lot of money, learned the hard way." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

d. Minicomputers

- While less than 10% of very large and large companies have considered or installed user site minicomputers tied to RCS networks, 25% of all respondents had replaced one or more computer services applications by an in-house minicomputer (Exhibit III-23).

- Respondents were using minicomputers both at the home office, for specialized functions (such as actuary and pension applications), and at the field offices for data entry, inquiry, and local marketing operations. To the extent that the minis are network connected to the home office, they have potential use as RCS user site hardware systems.

- Other respondents' attitudes on the use of minicomputers are shown in Exhibit III-24.

e. Turnkey Systems

- Respondents appear to have had little exposure to the concept of turnkey systems. Only 16% of them have had the opportunity to consider the use of turnkey systems in specialized areas. Many felt that they would consider an appropriate system if appropriately presented.

- Respondents felt that the most likely place to introduce turnkey systems to life insurance companies was with the end user.

- Problems cited by former turnkey systems users were lack of system support (on both hardware and software once the system was installed), and the inability to make system (software) changes and improvements over time.

- Other respondents' attitudes on turnkey systems are shown in Exhibit III-25.

EXHIBIT III-23

REPLACEMENT OF RCS SERVICES BY
IN-HOUSE MINICOMPUTERS AS REPORTED BY
LIFE/HEALTH INSURANCE COMPANY RESPONDENTS

STATUS	PORTION OF RESPONDENTS (PERCENT)
ARE CONSIDERING REPLACEMENT	21%
HAVE REPLACED ONE OR MORE APPLICATIONS	25
NOT YET REPLACED OR CONSIDERED	54
TOTAL	100%

EXHIBIT III-24

RESPONDENTS' COMMENTS ON THE USE OF MINICOMPUTERS IN LIFE/HEALTH INSURANCE COMPANIES

- "Have two minis in actuary, one in sales, two in pensions. Content with them." (VL)
- "Have seventy agencies. Our agency info system has CRTs now. Planning to put Wang computer with CRTs to enter data, etc. to home office." (L)
- "Will implement an effort to put Wangs in district offices and Hewlett-Packard 3000s in regions." (L)
- "Use them in data entry, and (DEC) text processing system with photo composition. Will go on-line to host soon. Word processing will be considered in mini area." (L)
- "Have discussed their use in actuarial area." (L)
- "Have one mini; good for its use. Will advance this area to tie in with host unit." (M)
- "Keep pushing for minis in word processing. Can't talk management into implementing it." (M)
- "Might be good for actuary data." (M)
- "Use them in actuarial area (2). Considering replacing them with on-line to host computer." (M)
- "For marketing proposals and actuary problem solving - we are considering minis." (S)
- "Have one doing the job. Underwriting, actuary work. IBM 5110 in-house. Might hook up to CPU in future." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

EXHIBIT III-25

RESPONDENTS' COMMENTS CONCERNING TURNKEY SYSTEMS
FOR LIFE/HELATH INSURANCE COMPANIES

- "Would do so if situation came up." (L)
- "The use of the Sigma software with the Wang computer is as close as we came to a turnkey operation." (L)
- "We are not seeking it out, but conscious of its potential." (L)
- "Mini manufacturers need a broader perspective of field office marketplace." (L)
- "Would consider the right system for a specialized area if it comes along - no specific suggestions." (L)
- "Had a business turnkey system - didn't get maintenance after initial package." (M)
- "Problem is that after one year is up vendor dumps system into your lap and leaves modifications to your own systems people. No technical support." (M)
- "Might consider it if growth continues." (S)
- "We are going to evolve more and more into that area." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

D. COMPETITIVE ENVIRONMENT

1. COMPETITIVE STRUCTURE

- At present, there are over 80 vendors supplying computer services to life/health insurance companies. These vendors are composed of two types:

  - Insurance companies.

  - Computer services vendors.

- Larger life insurance companies fall into corporate groups - data processing for all corporate members is provided by either a management company of the leading company or by the major insurance company. Such arrangements are classified as "in-house" in this study.

- By and large, life companies have not found the offering of computer services a very profitable arrangement. As shown in Exhibit III-26, insurance companies that are offering processing services and computer software products currently represent less than 10% of the market. Life insurance companies prefer to spend their limited systems analyst and programmer resources on enhancing internal operations.

- Commercial processing and software products share equal billing, each with just 30% of the current market. These market segments are held by numerous competing vendors. No single vendor holds more than 28% of their particular market segment.

- Electronic Data Processing (EDS) dominates the FM area with 75% of the FM market segment.

- No attempt was made to allocate professional services related to commercial processing and software products among vendors.

EXHIBIT III-26

COMPUTER SERVICES VENDORS' SHARE OF
LIFE/HEALTH INSURANCE MARKET IN 1978

VENDOR TYPE	REVENUES ($ MILLION)	MARKET SHARE (PERCENT)
• INSURANCE COMPANIES		
INA, SAFECO, OTHERS	$ 15.0	9%
• COMMERCIAL PROCESSING		
NCSS	6.0	
ADP	4.0	
GEIS	6.0	
SBC	8.0	
INFORMATICS	4.0	
TCC INC.	2.5	
COMSHARE	2.0	
OTHERS	17.5	
SUBTOTAL	50.0	29
• FACILITIES MANAGEMENT (FM)		
EDS	12.0	
OTHERS	4.0	
SUBTOTAL	16.0	9
• SOFTWARE PRODUCTS		
EDS	3.0	
CYBERTEK	8.0	
LYCOR INC.	6.0	
TCC INC.	2.0	
INFORMATICS	6.0	
OTHERS	25.0	
SUBTOTAL	50.0	29
• PROFESSIONAL SERVICES	41.0	24
TOTAL	$ 172.0	100%

2. COMPUTER SERVICES VENDORS

- Automatic Data Processing (ADP) has revenues from life insurance companies estimated at $4 million. The revenues are not related to mainline applications but result from offering financial information services for investment analysis and planning, corporate planning service, payroll and accounting services, and management information systems (MIS).

- General Electric Information Systems (GEIS), with estimated revenues from life insurance companies of $6 million, supplies specialized financial and corporate planning, actuarial, and network services.

- Comshare focuses on investment analysis, pension planning, pension accounting systems, and human resource services to life insurance companies. Estimated related revenues in 1978 were $2 million.

- National CSS (NCSS) has placed at least two user site hardware systems with insurance-related firms involved in actuarial analysis and in pension planning and administration. Also included in the estimated 1978 revenues of $6 million from this source are investment and portfolio analysis and evaluation, management reporting, and financial and corporate planning services.

- Service Burueau Company (SBC), the largest commercial processing vendor with estimated 1978 revenues of $8 million from the life insurance subsector, provides both mainline application RCS services, using the TCC life/70 package, and specialty services for marketing, financial and corporate planning, and investment management.

- Informatics specializes in services to life insurance companies. The firm obtains revenues of over $10 million from offering the Life-Comm insurance administration system, both as an in-house installed and maintained software package and as an RCS service, to some 25 insurance companies. Informatics also offers financial and corporate investment planning services.

- TCC, Inc., another insurance company specialist, offers its Life/70 system both on an RCS basis and as an in-house installed and maintained software package. TCS also offers financial and corporate planning, investment management, and pension planning and administration software products and services. TCC's reported 1978 revenues approached $5 million.

- There are a number of specialty vendors and local service bureaus that service life companies. Examples are:

  - Datair Systems Corporation provides specialized pension and estate planning services.

  - Information Resources, Inc. provides a specialized system for processing credit life insurance.

- EDS services some 14 life insurance companies with FM. Part of EDS's over $27 million revenues from life insurance companies is derived from supplying processing services to, and installing and maintaining its life administration system in, another 12 life insurance companies.

- Cybertek, Inc. markets a full set of mainline software products under the CYPROS trademark. The products cover all phases of individual life insurance lines for medium to large companies. With over 80 installations, Cybertek's revenues are estimated at over $8 million.

- Another software specialist for life insurance companies is LYCOR, Inc. LYCOR markets the Personalized Life Management System (PALM), the Management and Administration of Group Insurance Claims (MAGIC), and the Management and Administration of Credit (Life) System (MACS). This firm's reported revenues of between $5 million and $10 million come from installation and maintenance of their products in over 40 companies.

E. PRODUCT AND MARKETING ISSUES

1. PRODUCT STRATEGIES

- Target products to operate in an on-line environment. Offerings that are labor saving are in high demand.

- Deliver specialized systems that operate on minicomputers, such as:

  - Group pensions.

  - Actuarial packages.

  - Group health and accident claims.

- Develop financial budgeting and planning models oriented to life insurance company operations.

- Develop investment management systems oriented toward the changing asset structure of life insurance companies:

  - Pension and retirement plans.

  - Mortgage placement and servicing.

  - Secondary mortgage market.

  - Cash flow.

  - Trust-related services.

- Plan to support larger life insurance companies' mainline applications on a distributed basis, using IBM Series 4300 systems.

- RCS vendors should target user site hardware systems to larger life insurance companies and to corporate holding groups for corporate MIS.

- Offer financial management systems to larger companies, such as:

  - Cash management.

  - Money market funds management.

- Modularize product offerings to facilitate customization to meet end user requirements.

- Track national health insurance progress to uncover opportunities for new product and service development, such as the use of credit authorization technology to determine eligibility.

2. MARKETING STRATEGIES

- Since many larger life/health insurance companies are also involved in property/casualty insurance, the market should be approached as an entire industry.

- The advent of national health insurance will cause a major impact on both government-funded and private health insurance markets. Therefore, include government-funded programs (Medicare, Medicaid) in marketing plans.

- Look for specialized areas, rather than mainline applications, for offering new products and services.

- Acquire insurance specialty firms to expand offerings over RCS vendors' national networks.

- Negotiate with software product vendors to expand the market by offering the service over RCS vendors' national networks.

- Enter or expand mainline offerings by purchasing local service bureaus that are not able to adequately invest enough capital to allow them to shift to on-line operation.

- Apply those products and services offered in banking and finance markets to life insurance companies, such as:

  - Trust-related services, such as portfolio management and security movement and control.

  - Pension plan participant accounting.

IV COMPUTER SERVICES MARKETS IN PROPERTY/CASUALTY INSURANCE

IV COMPUTER SERVICES MARKETS IN PROPERTY/CASUALTY INSURANCE

A. SUMMARY AND RECOMMENDATIONS

1. SUMMARY

- Approximately 800 well-automated corporate property/casualty insurance company groups spend over 1.0% of net premium revenues on EDP.

- Property/casualty insurance companies spent the major portion (84%) of their total EDP expenditures of over $780 million in 1978 for in-house operations.

- Computer services expenditures ($122 million in 1978) will rise to $228 million in 1984, resulting in an 11% AAGR. Computer services growth, which is less than total property/casualty EDP growth (14%), is related to the strong tendency on the part of EDP managers to go in-house and to the increasing use of minicomputers.

- Software products and professional services to property/casualty insurance companies is a major market area. Combined 1978 revenues of $68 million represents nearly 56% of the total computer services marketplace.

- General business applications (accounting, MIS, corporate planning), with a 14% AAGR, is the largest RCS growth area.

- FM, with 22% of total processing, will remain an important market segment.

- Batch processing, on the decline, will drop to less than 27% of total processing by 1984.

- Inflation is the major factor affecting the property/casualty insurance company's current business. Rapidly inflated casualty losses make personal lines unaffordable. Escalating labor costs accelerate the shift to on-line systems. Uncertainty reduces the time span of coverage, increasing reissue costs. Pressures on investment yield mount as investment income is required to offset expenses and losses.

- Packaging commercial lines into comprehensive plans both extends potential market coverage and increases the opportunity for computer services vendors to develop specialized products that are "value-added."

- Property/casualty insurance companies spend 72% of their total software budget on mainline applications:

  - Personal property/casualty.
  - Commercial lines.
  - Risk/rating.
  - Claims.
  - Billing/premium collection.
  - Corporate accounting.
  - Investment.

- Computer services vendors process mainline applications for property/casualty insurance companies. They also supply processing services to such specialized areas as:

  - Corporate and financial planning.

  - Cash management.

  - Marketing.

- Property/casualty insurance company systems and programming personnel are in short supply. EDP managers seek help in application development, both in software packages and in professional analysis and programming services.

- Property/casualty insurance companies are interested in any product or service-oriented on-line system that will reduce labor cost. They have a particularly high interest in commercial lines.

- Property/casualty insurance company EDP managers plan to replace much existing equipment with the IBM System 4300 series hardware in the near future. Software products that support the 4300 will be in high demand.

- Property/casualty insurance companies have only moderate interest in distributed processing - less than 25% of the respondents use or were considering the use of DDP. Distributed data processing was being used in district/regional offices for data entry, inquiry and batch transmission to the home office host, and for local claims processing.

- None of the respondents had considered or installed RCS vendor user site hardware systems.

- None of the respondents had replaced RCS applications with a minicomputer. However, 31% were actively considering minicomputers for that role.

- The market for computer services to property/casualty insurance companies is widely held among more than 70 vendors. Most of the vendors provide software products or professional services, are local service bureaus, or supply specialty systems on minicomputers.

- Computer services companies that are part of property/casualty insurance corporate groups provide services primarily to member companies. Such services are counted as "in-house." Computer services provided to the industry at large comprise just 8% of the total market.

- EDS is the leading FM vendor. Besides supplying FM services to eight companies, EDS supplies processing services and, in some cases, installs and maintains its insurance management system as a software product to another eight companies.

- CSC offers FM services and is in a joint venture with Seibels, Bruce & Company to market the Policy Management System (PMS) on an RCS basis.

- Insurance Systems of America, the leading vendor specializing in carrier insurance, provides both software products and RCS services to property/casualty insurance companies. Jointly owned by 15 insurance companies, ISA supports over 60 installations.

- The other major vendor of software products and RCS services to property/casualty insurance companies: PolicyManagement Systems (PMS), a subsidiary of Seibels, Bruce, supports over 100 installations of its software products.

2. RECOMMENDATIONS

- Develop highly modularized systems and offer professional services to customize products to meet end user requirements.

- Develop products that operate in an on-line mode.

- Offer specialized products that operate on standalone minicomputers or on RCS vendor-supplied user site hardware systems (USHS).

- Develop new products using DBMS that will support property/casualty mainline operations on IBM Series 4300 systems.

- Counter the trend towards moving timesharing in-house by targeting USHS to larger property/casualty insurance companies and corporate groups.

- Acquire the rights to market specialty software over RCS vendor networks.

- For market entry, concentrate on such specialized areas as:

  - Portfolio management.

  - Cash and money market instrument management.

  - Reinsurance.

- Acquire local service bureaus that lack capitol for product and services expansion.

- Track development of the agent/broker network under development by the Institute for Insurance Research (IIR). Bid to implement or manage the network.

- Track development of the SBS and AT&T ACS networks. Look for opportunities to interface with end users for new corporate services.

B. MARKET ANALYSIS AND FORECAST

1. MARKET STRUCTURE

- There are about 1,400 property/casualty insurance companies in the United States. Their number has held fairly steady in the past 20 years.

- The 1,400 individual companies fall into some 800 corporate groups. Distribution by revenues (net premiums) is shown in Exhibit IV-1.

- Total 1978 assets of nearly $151 billion are rising at an AAGR of over 11%. Very large companies (or groups) comprise 2% of the total number of companies and hold 53% of total assets.

- Total 1978 revenues (net premiums) of nearly $82 billion are growing at an AAGR of 13% and will reach over $170 billion in 1984.

- Net premium revenues, which indicate the level of service activity, appear to be the best means of determining EDP expenditures.

- The top 56 companies or corporate groups, representing 7% of the total companies in the industry, garner 76% of the total revenues.

2. MARKET FORECAST

- Respondent data indicates that property/casualty insurance companies, on the average and depending on size, spent between 0.7% and 1.4% of net premium revenues on EDP in 1978 (Exhibit IV-2). Average EDP expenditures were 1.0% of total net premium revenues.

- EDP expenditures were predominantly (84%) for in-house operations.

EXHIBIT IV-1

MARKET STRUCTURE OF PROPERTY/CASUALTY INSURANCE SUBSECTOR BY SIZE IN 1978

COMPANY/ GROUP SIZE	SIZE REVENUES (NET PREMIUMS)	NUMBER	ASSETS ($ BILLION)	AAGR (PERCENT)	REVENUES (NET PREMIUMS) ($ BILLION)	AAGR (PERCENT)
VERY LARGE	>$1 BILLION	18	$ 79.7	12.0%	$ 41.7	13.2%
LARGE	$250 MILLION -$1 BILLION	38	42.1	13.3	20.2	14.3
MEDIUM	$100-250 MILLION	54	13.5	11.2	8.1	13.6
SMALL	<$100 MILLION	690	15.2	10.2	11.8	11.0
TOTAL	-	800	$ 150.5	11.4%	$ 81.8	13.0%

EXHIBIT IV-2

AVERAGE 1978 EDP EXPENDITURES FOR PROPERTY/CASUALTY INSURANCE COMPANIES AS REPORTED BY RESPONDENTS

COMPANY SIZE	REVENUES (NET PREMIUM INCOME) ($ MILLION)	ANNUAL EDP EXPENDITURES ($ MILLION)				PORTION OF REVENUES (PERCENT)	AVERAGE FIVE YEAR GROWTH (PERCENT/ YEAR)
		IN-HOUSE	COMPUTER PROCESSING SERVICES	SOFTWARE PRODUCTS/ PROFESSIONAL SERVICES	TOTAL		
VERY LARGE	$ 2,500	$ 15.8	$ 0.4	$ 0.7	$ 16.9	0.7%	16.8%
LARGE	513	4.1	0.1	0.3	4.5	.9	16.0
MEDIUM	132	1.3	.05	.15	1.5	1.1	7.5
SMALL	22	.2	.05	.05	.3	1.4	7.5

- Computer processing services expenditures ranged from 3% to 17%, or an average of 7% of total 1978 EDP expenditures.

- Software products and professional services revenues ranged from 4% to 17%, for an average of 9% of the total.

- Respondent data were applied to the total population to derive the following forecasts.

- Total annualized EDP expenditures (over $780 million in 1978) will rise to nearly $1.7 billion in 1984, almost 14% per year (Exhibit IV-3).

- Computer services expenditures were $122 million, or 16% of the total 1978 EDP expenditures (Exhibit IV-4).

  - $54 million were spent on processing services.

  - $68 million were spent on software products/professional services.

- Computer services expenditures, rising at an AAGR of over 11%, will reach $228 million by 1984 (Exhibit IV-5). Growth will be somewhat less than for total EDP expenditures due to the move to in-house RCS and the growth of minicomputer use.

- RCS for general business applications (corporate, marketing, financial) and system software products show the greatest growth at a 14% AAGR (Exhibit IV-6).

- Batch services with a 5% AAGR is a fading marketplace as companies shift to on-line and minis.

- Software products coupled with professional programming and consulting services is a major market area - 56% of the total 1978 computer services market.

EXHIBIT IV-3

TOTAL EDP EXPENDITURES FOR
PROPERTY CASUALTY INSURANCE COMPANIES BY SIZE,
1978-1984

COMPANY SIZE	EDP EXPENDITURES ($ MILLION)			
	1978	1979	1984	AAGR 1978-1984 (PERCENT)
VERY LARGE	$ 304	$ 355	$ 772	16.8%
LARGE	191	222	466	16.0
MEDIUM	81	87	125	7.5
SMALL	207	223	320	7.5
TOTAL	$ 783	$ 887	$ 1,683	13.7%

EXHIBIT IV-4

DISTRIBUTION OF EDP EXPENDITURES FOR PROPERTY/CASUALTY INSURANCE COMPANIES BY SIZE IN 1978

COMPANY SIZE	EDP EXPENDITURES ($ MILLION)			
	IN HOUSE	COMPUTER PROCESSING SERVICES	SOFTWARE PRODUCTS/ PROFESSIONAL SERVICES	TOTAL
VERY LARGE	$ 282	$ 10	$ 12	$ 304
LARGE	172	6	13	191
MEDIUM	70	3	8	81
SMALL	137	35	35	207
TOTAL	$ 661	$ 54	$ 68	$ 783

EXHIBIT IV-5

FORECAST OF COMPUTER SERVICES EXPENDITURES FOR PROPERTY/CASUALTY INSURANCE COMPANIES BY SIZE, 1978-1984

COMPANY SIZE	EDP EXPENDITURES ($ MILLION)			
	1978	1979	1984	AAGR 1978-1984 (PERCENT)
VERY LARGE	$ 22	$ 26	$ 57	16.8%
LARGE	19	22	46	16.0
MEDIUM	11	12	17	7.5
SMALL	70	75	108	7.5
TOTAL	$ 122	$ 135	$ 228	11.1%

EXHIBIT IV-6

FORECAST OF COMPUTER SERVICES EXPENDITURES
FOR PROPERTY/CASUALTY INSURANCE COMPANIES
BY SERVICE MODE, 1978-1984

COMPUTER SERVICE		USER EXPENDITURES ($ MILLION)			
MODE	TYPE	1978	1979	1984	AAGR 1978-1984 (PERCENT)
REMOTE COMPUTING SERVICES	GENERAL BUSINESS	$ 12	$ 13	$ 27	14%
	INDUSTRY SPECIFIC	8	9	14	11
	UTILITY	3	3	4	6
	TOTAL	23	24	45	12
FACILITIES MANAGEMENT	GENERAL BUSINESS	–	–	–	–
	INDUSTRY SPECIFIC	12	14	24	12
	UTILITY	–	–	–	–
	TOTAL	12	14	24	12
BATCH	GENERAL BUSINESS	3	3	4	5
	INDUSTRY SPECIFIC	14	15	18	5
	UTILITY	2	2	3	5
	TOTAL	19	20	25	5
TOTAL PROCESSING	GENERAL BUSINESS	15	16	31	13
	INDUSTRY SPECIFIC	34	38	56	9
	UTILITY	5	5	7	6
	TOTAL	54	59	94	10
SOFTWARE PRODUCTS	SYSTEM	12	13	26	14
	APPLICATION	31	35	64	13
	TOTAL	43	48	90	13
PROFESSIONAL SERVICES		25	28	44	10
GRAND TOTAL		$ 122	$ 135	$ 228	11%

3. INFLUENCING FACTORS

a. Government

- Consumer and public interest groups are attacking the validity of casualty insurance company rating classification systems. They are actively opposing rate increases by bringing pressure to bear on state legislators.

- Consumer groups and the Federal Trade Commission contend that anti-trust exclusion results in inadequate to non-uniform price competition. They are also campaigning to the congressional level for national standards for state no-fault insurance laws. The net result is increased EDP expenditures for analysis and government reporting.

- In addition, casualty insurance companies are using computer services as aids in forecasting the impact of rate increases on profitability under various scenarios.

b. Economics

- Inflation is the major factor influencing the way property/casualty insurance companies do business, according to most respondents.

- Property/casualty insurance companies are emphasizing on-line systems to help contain rapidly escalating personnel costs.

- Property/casualty insurance companies are shifting to commercial lines as offering personal lines at an affordable price becomes increasingly more difficult.

- The need to obtain greater investment yield to offset underwriting losses has prompted property/casualty insurance companies to use more complex techniques and increased computer services to manage their securities portfolios.

- Uncertain economic conditions have forced property/casualty insurance companies to shorten the time period of coverage, frequently dropping it from three years to as low as six months. Data processing requirements to handle these accounts over the same time frame have been increased.

- The capital and tax structure of property/casualty insurance companies favors the purchase or lease of EDP hardware for internal use. However, the scarcity and high cost of analysts and programmers constrains in-house software development, even for major applications. The trend is toward applications packages for daily operations and using computer services for all specialized applications.

c. Competition

- Property/casualty insurance companies are concentrating on offering comprehensive plans to both personal and commercial accounts. Combining lines reduces overall administrative costs, increases coverage potential, and results in increased and more complex data processing.

- Property/casualty insurance companies are committed to the American Agency System as a primary distribution system for these products. Reponsibility for record keeping and agent backup, formerly handled by the home office, is shifting to independent agents and brokers, again increasing the opportunities for computer services.

- Jointly sponsored by The Independent Insurance Agents of America and major property/casualty companies, the Insurance Institue for Research (IIR) is planning the development of a telecommunication system between agents and companies. The network will interface with Satellite Business Systems (SBS) or the AT&T ACS and will offer major opportunities for computer services vendors.

- Property/casualty offerings tend to be even more varied and complex in comparison with life insurance offerings. The use of EDP to support

property/casualty insurance operations means increased opportunity for computer services vendors to develop specialized products and services on a "value added" basis.

C. USER APPLICATIONS

1. APPLICATIONS

- Respondents report seven major applicational areas where EDP is used, either in-house or through computer services:
  - Personal property/casualty.
  - Commercial lines.
  - Risk/rating.
  - Claims.
  - Billing/premium collection.
  - Corporate accounting.
  - Investment.
- The major functions accomplished within each of the seven applications are shown in Exhibit IV-7. For each function, estimates are provided of:
  - The portion of the function that is accomplished in the batch mode.
  - The portion of the time the on-line (interactive) mode is used for:

EXHIBIT IV-7

EDP UTILIZATION FOR PROPERTY/CASUALTY INSURANCE APPLICATIONS

APPLICATION	APPLICATION FUNCTIONS	EDP UTILIZATION MODE OF SERVICE DELIVERY			
			ON-LINE		
		BATCH	DATA ENTRY	INQUIRY	FILE UPDATE
PERSONAL PROPERTY/ CASUALTY MANAGE- MENT SYSTEM	• POLICY ISSUE/ENDORSEMENT	XX	XXX	XX	XX
	• POLICY ADMINISTRATION -AUTO -PROPERTY -HOME	XX	XXX	XX	XX
	• AGENT COMPENSATION	XX	XX	XX	XX
	• MANAGEMENT REPORTING	XXX	-	XX	-
COMMER- CIAL LINES MANAGE- MENT SYSTEM	• MARINE	XXX	XX	XX	X
	• WORKMEN'S COMPENSATION	XX	XXX	XX	XX
	• COMMERCIAL VEHICLES	XXX	XX	XX	XX
	• GENERAL LIABILITY	XXX	XX	XX	X
	• MULTI PERIL	XXX	XX	XX	X
RISK/ RATING SYSTEM	• RATING/QUOTATION	XXX	XXX	XX	X
	• REINSURANCE	XX	XX	XX	X
	• ASSIGNED RISK	XX	XX	XX	X

– = NOT USED X= LESS THAN 25% XX = BETWEEN 25% AND 75% XXX = MORE THAN 75%

EXHIBIT IV-7 (CONTD)

EDP UTILIZATION FOR PROPERTY/CASUALTY INSURANCE COMPANIES

APPLICATION	APPLICATION FUNCTIONS	EDP UTILIZATION MODE OF SERVICE DELIVERY			
			ON-LINE		
		BATCH	DATA ENTRY	INQUIRY	FILE UPDATE
CLAIMS MANAGEMENT SYSTEM	• CLAIM/AGENT VERIFICATION	XX	XXX	XX	X
	• CLAIM ADJUDICATION/PAYMENT	XXX	XX	XX	X
	• CLAIMS HISTORY	XXX	X	XX	X
	• BUREAU REPORTING	XXX	X	X	-
	• LOSS ACCOUNTING	XXX	XX	XX	-
BILLING/ PREMIUM COLLECTION ACCOUNTING	• AGENT/DIRECT BILLING	XXX	XXX	XX	-
	• ACCOUNTS RECEIVABLE	XX	XX	XX	XX
	• AUTOMATED PAYMENTS	XXX	-	-	-
CORPORATE ACCOUNTING	• FINANCIAL REPORTING	XX	XXX	XX	XX
	• GENERAL LEDGER	XX	XX	X	X
	• PAYROLL/PERSONNEL	XXX	XX	X	X
	• BUDGETING	XX	XX	XX	X
INVESTMENT MANAGEMENT SYSTEM	• SECURITIES ANALYSIS	X	XXX	XXX	-
	• SECURITIES VALUATION	X	XX	XX	XX
	• INVESTMENT ACCOUNTING	XXX	XX	-	X
	• REGULATORY REPORTING	XXX	-	-	-

— = NOT USED X = LESS THAN 25% XX = BETWEEN 25% AND 75% XXX = MORE THAN 75%

- Data entry.

- Inquiry.

- Real-time file update.

- Exhibit IV-7 indicates that the commercial lines application uses batch processing to a much greater extent than the personal property/casualty area. Commercial lines are complex and, with the exception of workmen's compensation, have been difficult to implement even in the batch mode.

- Workmens compensation uses the batch mode between 25% and 75% of the time (this frequently depends upon company size). Data entry is done on-line more than 75% of the time, whereas inquiry and file update are done on-line between 25% and 75% of the time.

- Property/casualty companies insure for uncertain risks for short term periods. Companies in this field may have sudden and large requirements for cash, hence they have a different investment portfolio than do life companies. The investment portfolios of casualty companies concentrate on near term, near cash securities, those most affected by instability in short term interest rates. Investment management processing systems which utilize highly interactive securities analysis and evaluation systems are frequently supplied by computer services vendors.

- There are other applicational areas in which property/casualty insurance company respondents report use of EDP and the frequent services of computer processing vendors:

  - Corporate financial and management planning.

  - Cash management.

  - Marketing proposals.

2. USE OF COMPUTER SERVICES

- Property/casualty insurance companies closely followed life insurance companies in the early use of in-house automation.

- Major mainframe vendors specialize in this industry. However, IBM, Burroughs, and Univac have not provided application software packages to support property/casualty insurers to the same extent as they have to support the life insurance companies.

- As shown in Exhibit IV-8, 84% of EDP for property/casualty insurers is done in-house. This fits a similar pattern as for life insurance companies.

- Most EDP efforts in this industry concentrate on bringing processing in-house and utilizing on-line systems with remote locations.

- Respondents' stated preferences for in-house EDP are listed in Exhibit IV-9.

- Respondents' average EDP expenditures for computer services by company size are shown in Exhibit IV-10. In all but the "small" category, average expenditures for software are two to three times larger than the expenditures for processing services. This proportion is significantly greater than that found in life insurance companies.

- The DP department is not the only point of contact for computer services opportunities. About 29% of the respondents indicated that computer services are used by other departments within the company. As shown in Exhibit IV-11, corporate and personnel areas were mentioned as using computer services.

- Large and medium size companies are willing to make sizable expenditures for software products and then modify them to fit their specific in-house needs. Hence, respondents ranked both cost-effectiveness and applicability of software packages as high in their decision making criteria. These and other factors are shown in Exhibit IV-12.

EXHIBIT IV-8

DISTRIBUTION OF RESPONDENTS'
EDP UTILIZATION IN PROPERTY/CASUALTY
INSURANCE COMPANIES BY SIZE

COMPANY SIZE	EDP UTILIZATION (PERCENT)		
	IN-HOUSE	COMPUTER SERVICES	TOTAL
VERY LARGE	93%	7%	100%
LARGE	91	9	100
MEDIUM	86	14	100
SMALL	66	34	100
AVERAGE	84%	16%	100%

EXHIBIT IV-9

RESPONDENTS' COMMENTS ON ACCOMPLISHING EDP IN-HOUSE AS CONTRASTED TO USING COMPUTER SERVICES VENDORS FOR PROPERTY/CASUALTY INSURANCE COMPANIES

- "Goal is to do everything in-house. Will buy the right software products. DP so integral to our business, can't see turning it over to another party." (VL)
- "Commited 100% in-house. Better control. Used to have ouside for life policies - problems in coordination/communications." (L)
- "More control in-house." (L)
- "Don't have resources to do everything in-house, so go outside only when necessary." (L)
- "Were using a service bureau. Management control and applications systems processing now better with in-house." (M)
- "Insurance companies have the cash to buy equipment. Easier to write software to suit own needs." (M)
- "No objection to outside as long as it is cost justified." (M)
- "Prefer outside at present, if bigger company might consider inside. Turn-around time is satisfactory." (M)
- "Prefer outside services at all costs. Let them handle everything." (S)
- "Want own computer, get people familiar with own system and specifics of company activity and user departments. More control." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

EXHIBIT IV-12

KEY FACTORS IN PRODUCT/SERVICE
SELECTION AS REPORTED BY
PROPERTY/CASUALTY INSURANCE COMPANY RESPONDENTS

FACTOR	PORTION OF RESPONDENTS (PERCENT)
MAINTENANCE	17%
SUPPORT	17
COST-EFFECTIVE	42
REPUTATION OF VENDOR	4
RELIABILITY	8
APPLICABILITY	33
SYSTEMS CAPACITY/RESPONSE	25
DOCUMENTATION	8

- Very large and large property/casualty insurance firms involve the end user, DP vice presidents, and project managers in vendor service/product selection. The decision maker is usually a financial executive with input from appropriate DP specialists. Respondents' comments on what they look for in product and service selection are shown in Exhibit IV-13.

3. EXISTING PRODUCTS

- As with life insurance companies, property/casualty insurance company respondents had more comments about software products than about computer services.

- Exhibit IV-14 categorizes the respondents' level of satisfaction with existing software products. Only one-third of the respondents were fully satisfied with what they had.

- Most of the very large and large companies purchase a software package and then modify it to meet their specific needs. Lacking internal resources, respondents justify this route as being the most cost effective. Only a handful of respondents would consider modifying their existing business methods to fit existing software packages.

- Typical respondent comments on software product satisfaction are listed in Exhibit IV-15.

4. NEEDED PRODUCTS

- Respondents' plans for future application development are listed in Exhibit IV-16. Respondents are considering both in-house development of applications (e.g., on-line billing) and software package procurement. Approximately 53% of all respondents are interested in buying software packages.

EXHIBIT IV-13

RESPONDENTS' COMMENTS ON PRODUCT/SERVICE SELECTION
AS REPORTED BY PROPERTY/CASUALTY INSURANCE COMPANIES

- "Service/selection on basis of technical capability and ability to support product in field." (VL)
- "Cost benefit. Buy a package and tailor it to our needs instead of re-inventing existing packages." (L)
- "We look at only already developed software. We want to understand the package well enough to maintain and enhance it in-house." (L)
- "Service for products. We can't hire good professionals and industry lacks adequate training." (L)
- "Can legal requirements be met. Will vendor allow us to look at source coding if necessary to make adjustments. Can system be updated?" (L)
- "Meeting needs of company is most important. Have always used IBM equipment and will continue to do so. Servicing is important too (maintenance and updating)." (M)
- "Function - does it need to be modified? Cost justification vs. doing it ourselves (which is cheaper)." (M)
- "Performance - user response." (M)
- "Performance and price are major. Must fulfill specifications of user." (M)
- "We handle our business differently than other insurance companies so any software we get would have to be modified. It would be great if all insurance companies did their business the same." (S)
- "Must understand insurance business needs. Stability of vendor, good maintenance package. Don't have IBM equipment. Hard to find good software." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

EXHIBIT IV-14

RESPONDENTS' LEVEL OF SATISFACTION WITH SOFTWARE PRODUCTS DEVELOPED FOR PROPERTY/CASUALTY INSURANCE COMPANIES

LEVEL OF SATISFACTION	PORTION OF RESPONDENTS (PERCENT)
FULFILLS ALL REQUIREMENTS	33%
MEETS MOST REQUIREMENTS	44
HAVE SERIOUS DIFFICULTIES	11
LACKS MEETING SIGNIFICANT REQUIREMENTS	11

EXHIBIT IV-15

RESPONDENTS' COMMENTS ON SATISFACTION WITH SOFTWARE PRODUCTS FOR PROPERTY/CASUALTY INSURANCE COMPANIES

- "Can't really use applications packages as purchased. Some of them don't work as advertised. The systems packages are better. It's a step function. The software is better than IBM's for a while, but then falls behind." (VL)
- "We buy a package and spend an equal amount modifying the package to match our needs." (VL)
- "We try not to make major modifications to packages we buy - we change our way of doing business if necessary." (L)
- "We have to put equal amount of time in modifying purchased products to meet our specific needs. Our greatest problem is lack of qualified personnel both in-house and from CS vendors." (M)
- "Worth it to go outside." (S)
- "Are purchasing Siebels, Bruce software that we have been using outside for in-house operations." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

EXHIBIT IV-16

RESPONDENTS' PLANS FOR APPLICATIONS DEVELOPMENT FOR PROPERTY/CASUALTY INSURANCE COMPANIES

APPLICATIONS	PORTION OF RESPONDENTS (PERCENT)
AUTOMATIC RATING SYSTEMS	35%
AUTOMATION OF LIFE INSURANCE BUSINESS	29
CLAIM SYSTEM - POLICY MANAGEMENT	29
ACCOUNTING	24
DATA BASE	18

- Exhibit IV-17 shows that respondents are considering a wide range of software products from on-line systems to automatic cash disbursement, indicating a trend toward office automation.

- Respondents are supporting plans for a national agent network and the software to implement it. Improved data communications between agents and the home office is also a topic of major concern.

5. INDUSTRY ISSUES

a. Technology

- Some 57% of respondents of property/casualty insurance companies stated that IBM's announcement of the 4300 Series was the single most important event in the industry in 1979 (Exhibit IV-18).

- Respondents also indicated that reduced costs in memory storage and hardware would significantly contribute to increased use of distributed processing.

- Like life insurance firms, the property/casualty insurers were expecting future developments in satellite communications which would facilitate agent-home office interaction.

b. Distributed Data Processing (DDP)

- Over 50% of all respondents have not yet considered DDP, the remainder are either implementing or considering DDP for the future (Exhibit IV-19).

- The larger companies have more immediate plans, whereas the smaller firms are either not considering a decentralized system or have a "wait and see" attitude.

EXHIBIT IV-17

REQUIREMENTS FOR NEW APPLICATION SOFTWARE PACKAGES AS REPORTED BY PROPERTY/CASUALTY INSURANCE COMPANY RESPONDENTS

APPLICATIONS	NUMBER OF RESPONDENTS
ON-LINE INSURANCE SYSTEMS	10
BILLING-RATING SYSTEMS	4
PAYROLL	2
DATA BASE MANAGEMENT SYSTEMS	2
OFFICE AUTOMATION SYSTEMS	2
AGENT ACCOUNTING SYSTEMS	1
AUTOMATED CASH DISBURSEMENT	1

EXHIBIT IV-18

RESPONDENTS' ASSESSMENT OF MOST IMPORTANT EDP ANNOUNCEMENT IN 1979 FOR PROPERTY/CASUALTY INSURANCE COMPANIES

EVENT	PORTION OF RESPONDENTS (PERCENT)
IBM 4300 SYSTEM	57%
REDUCED COST OF STORAGE/ HARDWARE	36
SATELLITE COMMUNICATIONS	14

EXHIBIT IV-19

RESPONDENTS' PLANS FOR IMPLEMENTING DISTRIBUTED DATA PROCESSING (DDP) IN PROPERTY/CASUALTY INSURANCE COMPANIES

PLANS	PORTION OF RESPONDENTS (PERCENT)
HAVE NOT CONSIDERED DDP	52%
ARE CURRENTLY CONSIDERING DDP	24
HAVE IMPLEMENTED DDP	12
WILL BE IMPLEMENTING DDP IN FUTURE	12
TOTAL	100%

- As with life insurers, large property/casualty insurance companies are finding DDP useful in specialized applications. Data entry, as well as policy issue (hand copy) and claims processing, can be done at district offices.

- Typical respondents' comments on the use of DDP are shown in Exhibit IV-20.

c. Facilities Management (FM)

- None of the respondents have implemented FM. Forty-eight percent have considered and then rejected it, and 44% (mostly small companies) have not considered it (Exhibit IV-21).

- Most respondents from the large companies feel that utilization of FM is precluded by the fact that DP is so integral to their day-to-day operations. FM, they feel, is no longer a viable alternative.

- Typical respondents' comments on FM are shown in Exhibit IV-22.

d. Minicomputers

- Although there are no companies that have considered or installed user site minicomputers tied to RCS networks, 31% of the respondents in the property/casualty subsector are considering replacing one or more computer services by in-house minicomputers (Exhibit IV-23).

- Respondents indicated that minis have been employed at the home office in the areas of actuary and accounting and at field offices for data entry, inquiry, rating, and payment processing. Their expanded use in agents' and brokers' offices in the future was frequently mentioned.

- Respondents' attitudes on the use of minicomputers are recorded in Exhibit IV-24.

EXHIBIT IV-20

RESPONDENTS' COMMENTS ON USE OF DISTRIBUTED DATA PROCESSING (DDP) IN PROPERTY/CASUALTY INSURANCE COMPANIES

- "Put in new mini (IBM 8100 under consideration) in branches to combine inquiry and data transmission networks and do branch loss entry, policy issue and claims processing." (VL)
- "Moving in that direction. Some things need DDP - in branches to help with work load. Transmit daily to host. Some information should be centralized." (L)
- "Using IBM 8100 for local processing. Shift all paper entry from home office to source." (L)
- "Not impressed with it at all. Wait and see. Want to make sure it is not a fad before we get involved with it." (M)
- "Brand new field. Have branches all over California so we are considering that area." (M)
- "Major concern is to keep things going as they are." (S)
- "Wanted to be centralized. No interest in DDP." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

EXHIBIT IV-21

RESPONDENTS' ATTITUDES TOWARD FACILITY MANAGEMENT (FM) ARRANGEMENTS FOR PROPERTY/CASUALTY INSURANCE COMPANIES

ATTITUDE	PORTION OF RESPONDENTS (PERCENT)
HAVE NOT CONSIDERED FM	44%
ARE CONSIDERING FM	8
HAVE IMPLEMENTED FM	0
HAVE REJECTED FM	48
TOTAL	100%

EXHIBIT IV-22

RESPONDENTS' COMMENTS ON FACILITIES MANAGEMENT ARRANGEMENTS FOR PROPERTY/CASUALTY INSURANCE COMPANIES

- "We were under a form of FM in 1974. The day to day involvement in company's business precludes FM today." (VL)
- "Much antagonism between in-house and FM people. Doesn't work. Not interested in it." (L)
- "EDS type firms no longer the way to go. The on-line nature of the networks involves every aspect of the company's business." (L)
- "No chance. Other attempts locally have failed. We can do it better than anyone else can." (M)
- "There are some excellent people in these areas. However, we have no plans in FM now." (S)
- "We don't have plans for it. Like flexibility and decisions made by our own management." (S)
- "Might do it in more metropolitan areas, not here." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

EXHIBIT IV-23

REPLACEMENT OF RCS SERVICES BY
IN-HOUSE MINICOMPUTERS AS REPORTED BY
PROPERTY/CASUALTY INSURANCE COMPANY RESPONDENTS

STATUS	PORTION OF RESPONDENTS (PERCENT)
ARE CONSIDERING REPLACEMENT	31%
HAVE REPLACED ONE OR MORE APPLICATIONS	0
NOT YET REPLACED OR CONSIDERED	69
TOTAL	100%

EXHIBIT IV-24

RESPONDENTS' COMMENTS ON THE USE OF MINICOMPUTERS IN PROPERTY/CASUALTY INSURANCE COMPANIES

- "No need for them in our business. May be a real opportunity for agents and brokers." (VL)
- "In process of installing 39 minis at branches across the U.S. will transmit information daily to host computer." (L)
- "Use minis in payroll, personnel, actuarial, financial, inventory, telephone and environmental control." (L)
- "Using minis in actuarial area and data entry payment processing." (M)
- "Use them in insurance rating, inquiry to data base, and limited applications." (M)
- "Can handle all operations with System 38." (S)
- "Definitely useful, but not for our situation. Need bigger computer for our volume of processing." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

e. Turnkey Systems

- More than 80% of the respondents had not yet considered turnkey systems, illustrating the lack of turnkey system "exposure" in this area. The remainder had rejected turnkey systems because they had not found a system suited to their needs. Most respondents stated that they would consider such a system if they ever came across one that was really "turnkey" and could perform specialized industry functions.

- Other respondents' attitudes concerning turnkey systems are listed in Exhibit IV-25.

D. COMPETITIVE ENVIRONMENT

1. COMPETITIVE STRUCTURE

- Currently, over 70 vendors of computer services compete in the property/casualty market. With no single vendor dominating the market, they fall into two types:

  - Insurance companies.

  - Computer services vendors.

- Data processing that is captive within corporate property/casualty groups is considered "in-house" and not counted under insurance company vendor computer services.

- Property/casualty insurance companies are not heavily involved in offering computer and software products. They, like commercial banks, need critical systems and programming personnel to maintain in-house operations. Exhibit IV-26 indicates that insurance companies provide services to only 8% of the market.

EXHIBIT IV-25

RESPONDENTS' COMMENTS CONCERNING TURNKEY SYSTEMS
FOR PROPERTY/CASUALTY INSURANCE COMPANIES

- "Haven't seen any that fit our needs as yet. If user groups come into contact with them we will consider their use." (VL)
- "Where they fit well we will use them. Product has to be useful across the board for our companies in the same line of business." (VL)
- "Never found one that is really turnkey. Have looked at them and it always seems that the system needs to be modified for each user." (L)
- "Would use turnkey approach anywhere we can use free standing minis." (L)
- "Have turnkey system for travel reservations in district offices and have turnkey rate quotations system in district offices." (L)
- "Can't find suitable ones to fulfill our needs." (L)
- "If the specifications could be met it would be easier operating for everyone." (M)
- "Looked into it, didn't find anything of interest." (S)
- "Would be better for branch, user oriented operation." (S)

NOTE: (VL) = VERY LARGE, (L) = LARGE, (M) = MEDIUM, (S) = SMALL SIZE COMPANIES

EXHIBIT IV-26

COMPUTER SERVICES VENDORS' SHARE OF
PROPERTY/CASUALTY INSURANCE MARKET IN 1978

VENDOR TYPE	REVENUES ($ MILLION)	MARKET SHARE (PERCENT)
• INSURANCE COMPANIES:		
SEIBELS, BRUCE, SAFECO, NN, OTHERS	$ 10.0	8%
• COMMERCIAL PROCESSING		
CSC	2.0	
ADP	4.0	
GEIS	5.0	
SBC	7.0	
RAND INSURANCE SYSTEMS	4.0	
ISA	2.0	
OTHERS	8.0	
SUBTOTAL	32.0	27
• FACILITIES MANAGEMENT (FM)		
EDS	8.0	
CSC	2.5	
OTHERS	1.5	
SUBTOTAL	12.0	10
• SOFTWARE PRODUCTS		
INSURANCE SYSTEMS OF AMERICA (ISA)	11.0	
POLICY MANAGEMENT SYSTEMS (PMS)	9.0	
RAND INSURANCE SYSTEMS	2.0	
OTHERS	21.0	
SUBTOTAL	43.0	35
• PROFESSIONAL SERVICES	25.0	20
TOTAL	$ 122.0	100%

- Software products vendors provide the greatest share (35%) of users' computer services requirements. Coupled with professional services related to application programming and maintenance, software products vendors approach 50% of total market share.

- With a 75% market share, EDS dominates the FM segment.

- Professional services directly related to customizing vendor software products and specialty RCS applications was not subdivided among vendors.

2. COMPUTER SERVICES VENDORS

- Automatic Data Processing (ADP) provides property/casualty insurance companies with computer services for corporate and financial planning, payroll and accounting, and management information systems. Estimated revenues obtained from this area are $4 million in 1978.

- Computer Sciences Corporation (CSC) has selected the insurance marketplace as an area of specialization. CSC provides both facilities management to large property/casualty insurers and also markets RCS services jointly with Seibels, Bruce & Company, using their Policy Management System (PMS). Related 1978 revenues approached $5 million.

- Service Bureau Company (SBC) targets both daily processing and specialized services to property/casualty insurance companies. Specialty RCS services are for marketing, financial and corporate planning, and investment management. SBC's related revenues are estimated to be $6 million.

- General Electric Information Systems (GEIS) supplies specialized financial and corporate planning and management services. GEIS' estimated 1978 related revenues were $5 million.

- Rand Information Systems specializes in selling both RCS services and software products to property/casualty firms. Besides servicing agents and

brokers, Rand provides services to property/casualty insurance companies in the areas of reinsurance, bureau reporting, and accounting. Rand's reported revenues from the property/casualty insurance companies exceeded $6 million in 1978.

- A number of specialized vendors and local service bureaus provided services to property/casualty insurers. Some examples are:

  - ASDC, Inc. (RI) provides automobile rating, writing, and direct billing services for assigned risk and no-fault cases.

  - Interstate Business Services (OH) provides bureau reporting and general accounting services to property/casualty insurance companies in the Ohio/Indiana area.

- EDS provides FM services to eight property/casualty insurance companies. Part of EDS' $13 million in revenues from this industry is obtained from supplying processing services and installing and maintaining its insurance administration systems in another eight property/casualty companies.

- Insurance Systems of America markets a full range of software products for both individual and commercial property/casualty lines. Jointly owned by 15 insurance companies, ISA has installed its Casualty Information System in over 60 companies. Part of ISA's 1978 revenues of nearly $13 million came from RCS services.

- Policy Management Systems (PMS), a subsidiary of Seibel, Bruce & Company, a casualty insurance company, has installed its PMS system in over 100 companies. Reported 1978 related revenues were $9 million, which includes some processing services.

E. PRODUCT AND MARKETING ISSUES

1. PRODUCT STRATEGIES

- Develop highly modularized systems that can be customized to meet end user requirements.

- Develop specialized systems that operate on minicomputers, such as:

  - Rating systems.

  - Reinsurance.

  - Investment administration.

- Integrate data base management systems in new mainline product development, such as:

  - On-line inquiry.

  - On-line data entry.

  - On-line file update.

- Develop financial, budgeting, and planning systems oriented towards property/casualty insurance companies.

- Plan to support larger property/casualty insurance companies' mainline applications on a distributed basis, using the IBM 4300 Series or 8100 Information System.

- To counter the trend towards moving timesharing in-house, RCS vendors should target user site hardware systems to larger property/casualty insurers and to corporate holding company groups.

- Target the larger property/casualty insurance companies with such financial management systems as:

  - Cash management.

  - Money market instruments.

2. MARKETING STRATEGIES

- Property/casualty insurance companies are frequently part of corporate groups that include life insurance companies, necessitating marketing coverage in both areas.

- Marketing thrust should be towards specialized areas rather than at mainline operations for market entry.

- Acquire specialty firms and expand offerings over RCS vendor national networks.

- Seek agreements with software products vendors to market systems over RCS networks. Leverage software product vendors' expertise.

- Enter or expand primary applications processing by the purchase of local service bureaus that are not able to adequately invest enough capital to move to on-line operations.

- Use RCS networks to interconnect agents and brokers to home offices for more responsive services, such as in the areas of:

  - Rating.

  - Quotation.

- Track development of the independent agent/broker network presently being formed by IIR. Bid to implement or manage network.

- Track development of SBS and the AT&T ACS networks. Capitalize on opportunities to interface with end users for new RCS services.

APPENDIX A: USER INTERVIEW PROGRAM

APPENDIX A

USER INTERVIEW PROGRAM

TYPE OF INTERVIEW	LIFE/HEALTH	PROPERTY/ CASUALTY	TOTAL
ON-SITE	5	5	10
PHONE	20	20	40
USER PANEL	33	17	50
TOTAL	58	42	100

APPENDIX B: STANDARD INDUSTRIAL CLASSIFICATION (SIC) INDUSTRIES INCLUDED IN INSURANCE SUBSECTORS

APPENDIX B

STANDARD INDUSTRIAL CLASSIFICATION (SIC) INDUSTRIES INCLUDED IN INSURANCE SUBSECTORS

STANDARD INDUSTRIAL CLASSIFICATION			INSURANCE SUBSECTORS				
GROUP NUMBER	INDUSTRY NUMBER	INDUSTRY NAME	LIFE/HEALTH	PROPERTY/ CASUALTY	GOVERNMENT FUNDED HEALTH INSURANCE	OTHER	AGENTS AND BROKERS
631	6311	LIFE INSURANCE	X				
632	6321	ACCIDENT AND HEALTH INSURANCE	X				
	6324	PRIVATE HOSPITAL AND MEDICAL SERVICE PLANS				X	
633	6331	FIRE, MARINE AND CASUALTY INSURANCE		X			
635	6351	SURETY INSURANCE		X			
636	6361	TITLE INSURANCE		X			
637	6371	PENSION, HEALTH AND WELFARE FUNDS				X	
639	6399	MISCELLANEOUS INSURANCE CARRIERS				X	
641	6411	INSURANCE AGENTS AND BROKERS					X
–	–	GOVERNMENT FUNDED HEALTH AND WELFARE INSURANCE			X		

APPENDIX C: DEFINITIONS

APPENDIX C: 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 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 the vendors' site(s) 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 "Resource Management" or "Systems Management.") The management of all or 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 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 and maintain 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 systems, 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 for accounting and inventory control, and special purpose packages, such as personal trust, airline scheduling, and demand deposit accounting.

- **PROCESSING SERVICES**

Processing services encompass 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 AND ENGINEERING 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.

- INDUSTRY SPECIALTY services provides 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 industry specialty applications are: seismic data processing, numerically-controlled machine tool software 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.

• DISTRIBUTED DATA PROCESSING (DDP)

- INPUT was unable to find a consensus among both users and vendors as to a definition of DDP. It appears to be a concept that is uniquely structured to satisfy individual vendor and user requirements.

- Nonetheless, as a result of extensive work in this area, INPUT offers the following hybrid definition:

  "Distributed processing is the deployment of programmable intelligence in order to perform data processing functions where they can be accomplished most effectively, through the electronic interconnection of computers and terminals, arranged in a telecommunications network adapted to the user's characteristics."

- **AN END USER** may buy a system from the hardware supplier(s) and do his own programming, interfacing and installation. Alternately, he may buy a turnkey system from a manufacturer, systems house or hardware integrator.

- **FINANCIAL MANAGEMENT AND PLANNING SYSTEMS (FMPS)** are software packages that are used to model all or part of a company's financial planning activities. FMPS software is used to create end user solutions to financial planning problems, either directly or through the generation of end user computer programs that in turn are executed to forecast the desired financial or planning data.

- **A MINICOMPUTER** is usually a 12 to 16 bit computer which is provided with limited applications software and support and represents a portion of a complete larger system.

APPENDIX D: RELATED INPUT REPORTS

APPENDIX D

RELATED INPUT REPORTS

TITLE	INDUSTRY REPORT NUMBER	PUBLICATION DATE
COMPUTER SERVICES INDUSTRY 1978 ANNUAL REPORT	-	NOVEMBER 1978
COMPUTER SERVICES INDUSTRY 1979 ANNUAL REPORT	-	DECEMBER 1979

CONTACT MR. WALTER SMITH, VICE PRESIDENT, MARKETING (415-493-1600)

APPENDIX E: SURVEY QUESTIONNAIRES

CATALOG NO. M I N S _ _ _

USER QUESTIONNAIRE

INSURANCE

☐ Life Insurance
☐ Private Health Insurance
☐ Fire, Marine, and Casualty Insurance

1. Do you use computer automation for any of your company's operations?

   ☐ Yes ☐ No

   If yes, go to Question 3.
   If no, go to Question 2.

2. Do you intend/plan to automate your operations within the next 2 years?

   ☐ Yes Go to Question 18.
   ☐ No Thank you - END OF INTERVIEW.

3. How do you do your processing now?

   ☐ In-house _____ %
   ☐ Computer Services _____ %

4. What are the five (5) most important applications you currently have automated? (in order of importance)

Order of Importance	Application	In-House	Uses Purchased Software Products	Uses Outside Processing Services
1.	_____	☐	☐	☐
2.	_____	☐	☐	☐
3.	_____	☐	☐	☐
4.	_____	☐	☐	☐
5.	_____	☐	☐	☐

5. Are there any other applications that use outside computer services?

Application	Computer Services Expenditures ☐ $/Mo ☐ $/Yr	Growth (%)
1. _____		
2. _____		
3. _____		

6. How much were your total EDP expenditures in 1978? How much do you estimate you will spend in 1979?

☐ Don't Know

	1978		1979	
In-House	$ _____	☐ Mo. ☐ Yr.	$ _____	☐ Mo. ☐ Yr.
Outside Services	$ _____	☐ Mo. ☐ Yr.	$ _____	☐ Mo. ☐ Yr.
Software Products	$ _____	☐ Mo. ☐ Yr.	$ _____	☐ Mo. ☐ Yr.

7. a) What growth do you expect over the next 5 years (1980-1984)?

☐ Don't Know

In-House _____ %/Yr.

(or split)

Outside Services _____ %/Yr.

Software Products _____ %/Yr.

b) What are the three (3) most important reasons for this growth?

1. _____

_____

2. _____

_____

3. _____

_____

8. Please estimate the portion of your outside processing services that is/will be accomplished in the following modes in 1979, 1980 and 1984:

☐ Don't Know

Mode	% 1979	% 1980	% 1984
Interactive			
Remote Batch			
Batch			
Total	100%	100%	100%

9. Who are the computer services vendors you currently use?

	Service Type: Computer Services	Software Products	Professional Services
1. _____	☐	☐	☐
2. _____	☐	☐	☐
3. _____	☐	☐	☐
4. _____	☐	☐	☐
5. _____	☐	☐	☐

10. What is your attitude on doing EDP work in-house vs. using outside services?

- ☐ Prefer in-house
- ☐ Prefer Computer Services
- ☐ Would consider outside computer services vendor
- ☐ Other _____

Comments: _____

_____

_____

11. When you use an outside services/software product vendor,

- ☐ Who is the point of contact?

Comments: _____

_____

- ☐ Who selects the vendor/product?

Comments: _____

_____

12. What are the key factors in product/service selection?

- ☐ Geographic location of vendor
- ☐ Vendor's hardware/software
- ☐ Technical support/training
- ☐ Availability of national network
- ☐ Systems capacity/response
- ☐ Price
- ☐ Other _____

Comments: _____

_____

_____

13. What is your level of satisfaction with your current products/services?

☐ Services ☐ Not Applicable

☐ Fulfill all requirements

☐ Lack meeting significant requirements

☐ Meet most requirements

☐ Have serious difficulties

☐ Other _____
(specify)

Comments: _____

_____

_____

_____

☐ Software Products ☐ Not Applicable

☐ Fulfill all requirements

☐ Lack meeting significant requirements

☐ Meet most requirements

☐ Have serious difficulties

☐ Other _____
(specify)

Comments: _____

_____

_____

_____

14. What changes, if any, do you expect to be making in the way of outside computer services/products in the next 2-3 years?

☐ None

Comments: _____

_____

_____

_____

_____

15. What are the other applications you would like to see accomplished by either computer services or software product vendors in the next 2-3 years (in order of importance)?

☐ None

Order of Importance	Application	Service Type: Processing Services	Service Type: Software Products
1.	_____	☐	☐
2.	_____	☐	☐
3.	_____	☐	☐
4.	_____	☐	☐

16. Are there any factors which would significantly increase your use of outside computer services or software products in the next 3-5 years?

- ☐ None
- ☐ Government
- ☐ Turnkey Systems
- ☐ On-Line Systems
- ☐ Minicomputers
- ☐ Market Changes
- ☐ Other

Comments: _____

_____

_____

_____

_____

17. What is your attitude/plan with regard to distributed processing?

- ☐ Have not considered DDP
- ☐ Are considering DDP
- ☐ Have implemented DDP
- ☐ Will be implementing DDP in the future

Comments: _____

_____

_____

_____

_____

18. What is your attitude/plan with respect to Facilities Management?

☐ Have not considered FM

☐ Are considering FM

☐ Have implemented FM

☐ Have rejected FM

Comments: _____

_____

_____

_____

_____

19. What is your attitude/plan for on-site minicomputers?

☐ Have not considered on-site

☐ Are considering on-site

☐ Have implemented on-site

☐ Have rejected on-site

Comments: _____

_____

_____

_____

_____

20. What is your attitude/plan for the use of turnkey systems?

☐ Have not considered turnkey systems

☐ Are considering turnkey systems

☐ Have implemented one or more turnkey systems

☐ Have rejected turnkey systems

Comments: _____

_____

_____

_____

_____

END OF INTERVIEW

21. What applications/services are you/will you be considering?

☐ In-house ☐ RCS Vendor

	Application	Vendor	Type of Service: Software Products	Computer Services	Mini-Computer
1.			☐	☐	☐
2.			☐	☐	☐
3.			☐	☐	☐
4.			☐	☐	☐
5.			☐	☐	☐

Comments: _____

_____

_____

_____

22. What are your planned/estimated EDP expenditures?

	1979		1980		Growth
In-House	$ _____	Mo. ☐ Yr. ☐	$ _____	Mo. ☐ Yr. ☐	_____%
Outside Services	$ _____	Mo. ☐ Yr. ☐	$ _____	Mo. ☐ Yr. ☐	_____%

23. What are the key factors in product/service selection?

☐ Geographic location of vendor

☐ Vendor's hardware/software

☐ Technical support/training

☐ Availability of national network

☐ System capacity/response

☐ Price

☐ Other _____

Comments: _____

_____

_____

24. What is your attitude on doing EDP work in-house vs. using outside services?

☐ Prefer in-house

☐ Prefer computer services

☐ Would consider outside computer services vendor

☐ Other _____

Comments: _____

_____

_____

25. When you use an outside services/software product vendor,

☐ Who is the point of comtact?

Comments: _____

_____

_____

☐ Who selects the vendor/product?

Comments: _____

_____

_____

26. What is your attitude/plan with regard to distributed processing?

☐ Have not considered DDP

☐ Are considering DDP

☐ Will be implementing DDP in the future

Comments: _____

_____

_____

_____

_____

27. What is your attitude/plan with respect to Facilities Management?

☐ Have not considered FM

☐ Are considering FM

☐ Have rejected FM

Comments: _____

_____

_____

_____

_____

28. What is your attitude/plan for on-site minicomputers?

☐ Have not considered on-site

☐ Are considering on-site

☐ Have rejected on-site

Comments: _____

_____

_____

_____

_____

29. What is your attitude/plan for the use of turnkey systems?

☐ Have not considered turnkey systems

☐ Are considering turnkey systems

☐ Have rejected turnkey systems

Comments: _____

_____

_____

_____

_____

END OF INTERVIEW

VENDOR QUESTIONNAIRE

COMPUTER SERVICES AND SOFTWARE MARKETS IN INSURANCE

1. Do you offer computer services/software products to the following organizations?

	Computer Services	Software Products
✓ Life Insurance (LI)	☐	☐
Private Health Insurance (PH)	☐	☐
X Fire, Marine, and Casualty Insurance (CI)	☐	☐
Government-Funded Health Insurance (GF)	☐	☐

2. What is your best estimate of the size and your share of your market segments (i.e., life, private health, etc.?)

Market Segment Name	Market Size		Market Share (Revenues)	
	Services Companies ($M)	Software Products Companies ($M)	Computer Services (%)	Software Products (%)
1. Life Insurance				
2. Private Health Insurance				
3. Fire, Marine and Casualty Insurance				
4. Government-Funded Health Insurance				

3. What growth in market share do you expect by:

	AAGR 1979 (%)	AAGR 1984 (%)
X Life Insurance (LI)		
Private Health Insurance (PH)		
X Fire, Marine, and Casualty Insurance (CI)		
Government-Funded Health Insurance (GF)		

4. Please describe your major product offerings. (List up to 5)

Market Segment	Offering Name	Description	Delivery Mode (check those that apply)				
			RCS	Batch	FM	Mini	Software Pkg.

5. Within each market segment, who are your competitors?

Market Segment	Competitor Name	Relative Share (%)
1.	1. 2. 3.	
2.	1. 2. 3.	
3.	1. 2. 3.	
4.	1. 2. 3.	

6. What are the major factors you see impacting the market for computer services over the next 3-5 years?

Market Segment	Factors

7. Do you offer or are you planning to offer:

☐ User site minicomputers? ☐ Yes ☐ No

Number of installations _____

Portion of revenues from user site _____ %

☐ Turnkey systems? ☐ Yes ☐ No

Number of installations _____

Portion of revenues from turnkey _____ %

☐ Facilities management? ☐ Yes ☐ No

Number of installations _____

Portion of revenues from FM _____ %

Comments: _____

_____

_____

_____

8. Are there any factors which would significantly impact your offering of computer services/software products over the next 3-5 years?

☐ No

☐ Market Segment ☐ Life ☐ Private Health ☐ Casualty ☐ Government Health

☐ Government ☐ Turnkey ☐ On-line ☐ Minis

☐ Other

Comments: _____

_____

_____

_____

9. What is your latest offering in each market subsector?

Subsector	Offering
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

10. Please send product literature on offerings in Insurance.

☐ Yes ☐ No

END OF INTERVIEW