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Dear Colleague:

Attached is the Information Services Market Analysis Program's latest report on the *Insurance Sector*. It provides a current assessment of the events and issues driving this marketplace, and offers INPUT's forecast of the market size for information services for the period 1993-1998.

This report should be filed with INPUT's other *U.S. Information Services Market Analysis Program* reports, behind the tab marked *Insurance*. Your INPUT program binders, together with the delivery mode reports, provide a total assessment of the United States market for information services.

Market Analysis Program industry and cross-industry sector reports are prepared annually, and may be in one of two forms. The expanded report, such as this *Insurance Sector Report*, contain a detailed industry analysis and supporting forecast data. It will typically be 40-50 pages in length. The forecast update will be a short report, providing a new forecast and summary data to support forecast assumptions. It will generally be 15-20 pages in length. Normally, for each industry and cross-industry market segment, full reports will be produced every other year, with summary reports prepared in the intervening years. The intent of this new format is to recognize the value of our clients' time, and provide concise statements of industry activity, supported by rigorous business, technical and competitive analysis, and a five-year industry forecast.

I am certain that you will find the *Insurance Sector* report to be both informative and useful, and welcome any comments that you have on this document, or any of INPUT's publications.

Sincerely,

Robert L. Goodwin
Manager
Information Services
Market Analysis Program

October, 1993

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Sincerely,

Bob Goodwin

Robert L. Goodwin
Manager, Information Services Market Analysis Program

Enc.

September 1993

Dear Colleague:

INPUT is re-releasing Federal Program Research Bulletins for the Department of Housing and Urban Development (II-6) and Department of Education (II-7).

Exhibit 3 in bulletin II-6 and 4 in bulletin II-7 inadvertently listed the columns showing the period fiscal years 1992-1997. The columns should have indicated fiscal years 1993-1998. The enclosed bulletins have been corrected.

The data in the reports are correct.

Sincerely,

Robert W. Deller
Manager, Federal Market Analysis Program

Enclosure

VERTICAL MARKET ANALYSIS

INSURANCE
1993-1998

U.S. Information Services
Market Analysis Program

SEPTEMBER 1993

INSURANCE

INFORMATION SERVICES OPPORTUNITIES & TRENDS

1993-1998

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Insurance

Information Services Opportunities & Trends 1993-1998

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Introduction

A

Purpose, Organization and Methodology

This section identifies the purpose and scope of this report, identifies key issues affecting information services expenditures in the insurance industry, notes how the document is organized, and explains INPUT's research methodology and the techniques used in the preparation of forecast data.

1. Purpose

The purpose of this Forecast Report is to identify key changes in the market for information services in the insurance industry and to provide the 1993 INPUT forecast for this market sector.

a. Sector Definition

The insurance sector, as defined by INPUT includes:

Property and Casualty Insurance - Property and Casualty (P&C) insurance includes two subsegments. Commercial P&C insures businesses, governments and other commercial and noncommercial organizations against financial loss from lawsuits or other casualties—generally relating to injuries to individuals or other organizations. Personal P&C insures individuals—especially homeowners and owners of automobiles—against property and casualty losses.

Life and Health Insurance - Life insurance includes traditional death payment insurance in both standard and innovative forms, as well as savings-and investment-related financial instruments such as annuities. The various forms of life insurance are generally sold directly to individuals, often to supplement minimal employer-provided benefits. Health insurance is most often provided in whole or in part by employers as a fringe benefit to employees, covering some or all of the costs of routine medical care, as well as providing some form of coverage for unusual

major or catastrophic medical care that most individuals could not pay for directly. State-by-state Blue Cross and/or Blue Shield organizations that provide only medical insurance on a nonprofit basis are included in the L&H segment.

Independent Agents or Brokers - Independent agents and brokerages (collectively referred to here as agents) serve as intermediaries between individuals or organizations seeking insurance and the insurance companies. Primarily, agents match the needs of the insured to the loss-coverage or other financial programs offered by one or more insurers, selling the insurance selected and collecting a sales commission. Secondarily, agents may service the insured's account over time, although often the main working relationship after sale is between the insured and the insurance company itself.

b. Key Issues

Key issues influencing the market for information services, whch are discussed in the report, include:

- The government's plans for overhauling the U.S. health care system, which are expected to have a major impact on insurers providing health care coverage
- The large number of catastrophes that have occurred in recent years, leading to record-breaking claims and a dramatic effect on the property/casualty segment
- Recovery from insolvency (resulting from the downturn in real estate) and risky investments, major concerns particularly in the life insurance segment

Technological issues that are having an impact on the insurance market, such as the use of client/server architecture and application, electronic imaging, and systems operations contracts, are also considered.

2. Organization

In addition to this introductory chapter, the report contains analyses of the information services market and competitive environment as described below:

Chapter II, *Trends, Events and Issues*, discusses changes, market issues and activities, and competitive factors in the insurance sector that can have an impact on the current and future use of information services.

Chapter III, *Information Systems*, provides an analysis of the current use of information systems by the insurance industry.

Chapter IV, *Information Services Market Forecast,* presents an analysis of the expenditures for information services, by delivery mode and submode, for the U.S. insurance market.

Appendix A, which contains the Forecast Data Base, presents a detailed forecast, by information services delivery mode and submode, for the insurance vertical market. A reconciliation to the previous forecast is also provided, together with a list of related reports of possible interest to the reader.

3. Methodology

Much of the data on which this report is based has been gathered during late 1992 and 1993 as part of INPUT's ongoing market analysis program. Trends, market sizes and growth rates are based upon INPUT research and in-depth interviews with users in the insurance industry and the IS vendors serving the industry. INPUT maintains ongoing relationships with, and a data base of, all users and vendors that it interviews. Interviewees for the research portion of this report were selected from this data base of contacts.

INPUT Library - Extensive use was made of INPUT's corporate library located in Mountain View, California. The resources in this library include on-line periodical data bases, subscriptions to a broad range of computer and general business periodicals, continually updated files on over 3,000 information services vendors, and the most up-to-date U.S. Department of Commerce publications on industry statistics.

Financial Data - It must be noted that vendors may be unwilling to provide detailed revenue breakouts by delivery mode or industry. Also, vendors often use different categories of industries and industry segments, or view their services as falling into different delivery modes from those used by INPUT. Thus, INPUT must estimate revenues for these categories on a best-effort basis. For this reason, the delivery mode and individual segment forecasts should be viewed as indicators of general patterns and trends rather than specific, detailed estimates for individual years.

Rounding - The values used in many of the exhibits contained in this report have been rounded for ease of reference. User expenditures for all information services categories are detailed, to the nearest million, in Appendix A, the Forecast Data Base.

B
General Business Trends

As noted in the Economic Assumptions section of the Department of Commerce's 1993 U.S. Industrial Outlook, U.S. economic growth in 1992 was somewhat less than was forecast in the prior year. The very slow recovery seen at the end of 1991 continued into 1992, with unemployment remaining at undesirably high levels—a condition fueled primarily by corporate restructuring and defense industry cutbacks.

In 1992, the major burden for implementing economic policy fell on the Federal Reserve System, a strategy which caused the Fed to steadily reduce the federal funds rate from 8% in June of 1990 to 3% in September of 1992, forcing a general reduction in all interest rates to the lowest levels in years.

The outlook for 1993 is cautiously optimistic, with many of the uncertainties tied to the new administration's attempts to both reduce the budget deficit while, at the same time, stimulating a still sluggish economy. At this time, messages remain mixed, with proposed corporate taxes favoring small businesses and those who make capital investments, and penalizing larger corporations through a 2% increase in the top corporate tax rate from 34% in 1992 to 36% in 1993. Personal income will be reduced by a proposed average increase in income taxes of 3% for middle income families and 5% for those in the highest income categories. All taxpayers, both business and individual, will also experience higher energy costs due to proposed new energy taxes. Many critics of the administration's proposals fear that the new taxes risk slowing the economy just when it has started to show some healthy growth—and there is a general wait-and-see attitude to determine how successfully the proposals survive the conflicting agendas of the congressional process.

INPUT uses the Blue Chip Consensus (economic) report, and various other sources (Federal Reserve, IMF), to identify anticipated economic growth trends and incorporate GDP assumptions in both industry and delivery mode financial forecasts. Economic growth in 1992 had a very slight upwards movement, but the 3% growth in GDP anticipated for that year is now forecast for 1993. This modest 3% growth is the logical result of the pressures placed upon the defense industry, tax uncertainties, a weak commercial real estate market, high federal debt, slow growth in the labor force, cautious financial institution lending policies and the growing economic interdependence of the industrialized nations, causing one country's economic problems to affect all. Balancing these growth inhibitors are the healthy gains in corporate profits noted in 1992 and a pattern of increased consumer spending.

In summary, U.S. economic fundamentals strengthened in 1992, establishing a foundation for the modest but steady 3% growth predicted for 1993.

Industry Trends, Events and Issues

A
Background/Industry Definition

The insurance industry relies on a complex system of risk analysis and investment to be successful. It must set up reserves for losses and determine premiums based on estimates of potential claims. While statistical analysis may show predictable trends and patterns, a series of unexpected catastrophes, including those which occurred in 1989 and 1992, can disturb the industry. In addition, insurers rely on their investment income to offset the cost of claims, and negative changes in the economy can seriously affect insurers' financial stability.

While property/casualty companies traditionally rely on shorter term investments (that are liquid) to pay out losses, the life insurance industry can focus more on long-term investments, since the time between the collection of premiums and payment of claims is typically a longer period. Life insurers assume more risk in hopes of a higher return on investment, particularly since this insurance segment is in competition with other financial services businesses.

Health insurers rely on employer-supported plans to cover premiums. As medical costs go up and employers are less willing to support these spiraling costs, they are turning to managed care options to reduce the ultimate costs of health care. On the horizon looms a proposed national health care system that most likely will dramatically change the structure of the health insurance industry.

B
Overview

Most prognosticators are cautiously optimistic about growth in the insurance industry in 1993 and beyond. Property/casualty insurers have suffered underwriting losses for a decade or more and low interest rates have affected investment income. Reinsurers have also been negatively affected by the large number of claims filed in the past few years. Life insurers must compete with financial services firms and have found that premium growth for most products has been minimal. Solvency problems in this segment have eroded public confidence. In fact, last year the number of life and health insurers that fell into major financial difficulties increased 38%. Health insurers have found competition resulting from the increasing trend toward managed care and at this point cannot accurately predict their future until a decision is made on a national health care plan.

On the plus side, however, an expected turnaround in the economy and real estate market should increase potential revenue income. Annuities continue to have healthy growth, thus supporting the life insurance segment. In addition, insurance companies are taking steps to insure improved profitability through dramatic changes in the way they operate their businesses, and information technology continues to offer the technical foundation to support positive change in the operation of this industry.

C
Trends and Events

The insurance industry is reeling from the effects of record-breaking claims from disasters in 1992—occurring at a time when the industry was still trying to recover from bad real estate investments and the junk bond crises. Add to that a national crisis in health care costs, along with low interest rates minimizing investment income, and it's no wonder that the insurance companies have been making dramatic changes in the way they operate in order to survive financially. This section first describes the external events and trends affecting each of the three segments of the insurance industry. Then internal trends within the industry, largely in response to these external impacts, are discussed. Finally, IS technology trends, as they affect the insurance industry, are presented.

1. External Trends and Events

a. Property Casualty Segment

According to the *1993 Fact Book*, produced by the *Insurance Information Institute*, there were 3,900 insurance companies in the U.S. writing property casualty insurance in 1991, with most being written by 900 companies operating in all 50 states. These companies managed assets of over $600 billion, with premium receipts of nearly $225 billion. However, that was before 1992, a year which saw claims activity that drove many companies to bankruptcy, and others to rethink their underwriting strategies.

Natural Disasters - 1992 was noted as the worst year on record for natural disasters, only three years after 1989 had that dubious distinction. With Hurricanes Andrew and Iniki, the L.A. Riots, flooding in the Chicago business district and a myriad of tornadoes, earthquakes and other disasters, claims payments topped $23 billion, as shown in Exhibit II-1.

EXHIBIT II-1

Insurance

1992 Catastrophic Events

Event	Insurance Claims (Dollars)
Hurricane Andrew	15.5 billion
Hurricane Iniki	1.6 bilion
Los Angeles riots	775 million
Hailstorms	1.4 billion
Wind/tornadoes	1.9 billion
Chicago flood	330 million
Other	1.5 billion

Source: Professional Agent

Hurricane Andrew alone resulted in claims payments of more than $15 billion. The Insurance Service Office and National Association of Independent Insurers reported that the property/casualty segment of the industry suffered an earnings reduction of 37% in 1992, resulting in earnings of only $9 billion. This couldn't have come at a worse time since low interest rates had eroded investment income. For the first time in close to a decade, available capital was reduced by more than 4.5% to $150 billion. Many of the smaller companies went into bankruptcy as a result, while

others were driven away from underwriting property/casualty insurance. Many, such as Allstate, have announced their intention to drop property insurance offerings along the eastern seaboard and areas hardest hit by weather-related catastrophes.

While the larger carriers had more capital to survive such a year, they were also the hardest hit with claims. State Farm Insurance paid out $3.4 billion in early 1992 with Allstate paying $2.2 billion in the same period. Hurricane Andrew resulted in 1,300 claims to Cigna, which alone cut its third quarter profits by $50 million. This was in addition to claims payments of $160 million for Hugo and the San Francisco earthquake and $39 million for the L.A. riots for Cigna.

Along with the unpredictable increase in natural disasters, the insurance industry must also face a growth in the occurrence of manmade disasters, such as the Los Angeles riots last year following the Rodney King verdict and the 1993 bombing of the world trade center.

Economy - While the return to better economic times is hopefully "just around the corner", the expectations of the property casualty business are mixed. The year 1992 was the sixth year of a downturn cycle. Some industry watchers do not expect a turnaround in the property/casualty segment until after 1993. Overcapacity is an ongoing concern and interest rates are continuing at a low level, impacting investment income. However, some believe that this situation will reverse the trend of recent years and drive premium prices up, resulting in profits as high as $12 billion in 1993. Premiums for property casualty insurance increased less than 2% in the first half of 1992 compared with 1991. This is minimal when compared with the 20%-22% increases in 1985 and 1986. Rate competition has been an issue for more than five years, and the U.S. industrial outlook now expects new written premiums to go up by 4% in 1993 to $240 billion.

Another key industry issue is the belief that the industry is dealing with underwriting losses by underreserving. Estimates indicate that the industry is weakening reserves—with some estimates of reserve deficiencies at 12% to 15%—translating to total deficiency of $40-$50 billion, which is a sizable piece of the industry's surplus. In fact, the recent insolvency of Casualty Indemnity Exchange, which had an *A.M. Best* rating of A, was blamed on loss reserve deficiencies of $17 million.

Some estimates expect that the ratio of what is paid out in claims as compared with overhead per dollar of premium will soon begin to move in the right direction—from 113% in 1992 to 111% at year-end 1993.

While the bad investments of the 1980s are affecting the insurance industry as a whole, property/casualty insurers have been hit less hard than the life insurance segment, because life insurers need to maintain more liquidity in investments, which precluded many longer term, high-risk instru-

ments such as junk bonds. However, many of the largest insurers write life and health in addition to property and casualty insurance, and losses in one area have affected their overall business. In addition, the property/ casualty industry is becoming more dependent on investment income to offset underwriting losses.

Automobile Insurance Trends - Automobile insurance has traditionally been a drain on insurance providers due to a variety of factors, including unfavorable regulatory decisions by various states and the ongoing problem of fraud. However, despite those issues, consumers *are* changing their driving habits. Seat belt requirements in most states, along with consumer education regarding drinking and driving, are believed to be big contributors to the drop in the number of road fatalities from 49,000 in 1988 to 43,500 in 1991. Claims costs have only risen 5% in the past two years as compared with 8%-10% in the mid-1980s.

b. Life Insurance Segment

Premium receipts for life insurers in 1992 were more than $200 billion. Over 80% of all U.S. households have life insurance. Buyers buy term and whole-life policies to provide death benefits and for investment purposes. While whole-life policies have been the traditional business of life insurance companies, there was a trend in the past several decades towards term insurance, which offered more flexible investment opportunities. This trend has since shifted back towards whole-life products.

Life insurers also sell annuities that provide financial security for the future as buyers anticipate retirement. With pension plans less available than they have been in the past, along with a drop in job security, these investments are growing in popularity.

During the 1980s, the life insurance industry made significant changes in its investment portfolio by dedicating increasingly larger portions of their dollars to real estate and high yield securities. Unfortunately, the timing coincided with a major downturn in the economy leading to real estate delinquencies and junk bond debt. Life insurers are still trying to recover from their bad investments during that time.

The amount of assets in mortgages is down to an average of about 15%, as compared with 20% in 1990, but the expected turnaround in the real estate market has been slower than predicted. Given some of the catastrophic and widely publicized results of the industry's junk bond investments, the public confidence has been shaken and has affected dollars spent on various life insurance investments.

The result of these recent trends is that life insurers are selling policies at decreasing rates. However, annuities represent the greatest growth opportunity for the life insurance industry. Prognosticators say life insurance will have flat or minimal growth in 1993 and grow from 4%-6% in the coming years, while annuities are expected to grow by 8%-12%.

Because the life insurance business competes with banks and other financial institutions in selling investments to its customers, it needs to continually look at developing new products to remain competitive. In addition, existing products must be tailored to the buyer's needs.

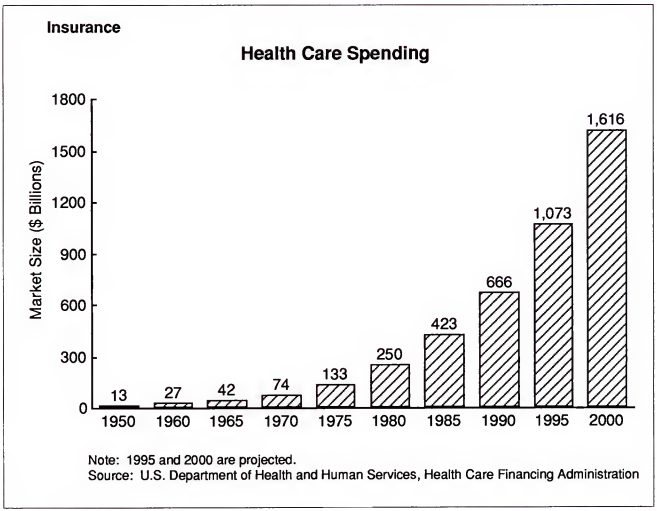
A Life and Health Industry CEO study conducted by the Life Office Management Association (LOMA) and Andersen Consulting in early 1993, showed continued industry consolidation, with more competition from banks and foreign companies. As with most other businesses, pressures to reduce costs will continue to be a factor.

c. Health Insurance—A National Health Care Crisis

There is nationwide recognition that health care in this country is a major concern. President Clinton made health care reform one of the key planks in his campaign platform and one of the first acts of his administration was to set up the Task Force on National Health Care Reform. Health care costs have been growing exponentially each year. In fact, they have grown faster than the economy for the past 30 years and in the past few years have represented more than 12% of the GNP. The Health Care Finance Administration estimates spending in 1992 at over $800 billion, roughly a 10% increase over 1991, and the trend shows little sign of stopping, with HCFA estimates that spending on health care will reach $1.6 trillion by the year 2000. As the baby boomers begin to join the ranks of the elderly, the problem will only get worse. The expenditures trend, as estimated by the FCFA, is diagrammed in Exhibit II-2.

One reason for spiraling costs is the medical industry's increasing reliance on technology. Expensive medical equipment is used for both diagnostic and treatment purposes. Many believe that spending on such technology is excessive, with physicians often ordering duplicate and at times unnecessary tests without giving thought to the cost. However, given the high number of malpractice cases, some believe that physicians sometimes order procedures as insurance for themselves in case of future litigation. When the costs for various medical services do increase, consumers have little incentive to "shop around" for the lowest price provider because they will not have to pay for it themselves, and costs are passed on to insurers and/or government programs such as Medicare.

EXHIBIT II-2



Note: 1995 and 2000 are projected.
Source: U.S. Department of Health and Human Services, Health Care Financing Administration

Yet despite all this spending on health care, over 13% of the population is not covered under any health plan at all. Since most Americans rely on employer-provided health plans, rising unemployment in the past few years has meant more people "falling through the cracks" and not being insured at all. The government generally ends up bearing the burden of these health care costs in the form of the Medicaid program, but even at that, only 40% of the population living below the poverty line is covered by Medicaid.

In the 1970s and the 1980s, the profits of health insurance companies rose along with the health care boom. However, rising cost issues led to the development of health maintenance organizations (HMO) and primary provider organizations (PPO) in an attempt to contain costs. These managed health care approaches are expected to be the foundation of the plans for the future. HMOs and PPOs both refer to organized networks of hospitals and doctors that negotiate discounts with groups such the employees of a large company. The employees are given incentives to use

such groups by having to pay more for alternative services. Large commercial insurance companies generally manage such networks, tracking use and monitoring quality. This shift has eroded the profits of traditional indemnity company offerings.

A move to a national health care system is inevitable and will most likely involve the use of managed care networks. In addition, preventive care needs to be offered. The $10 billion dollar question, however, is how will the system be organized and paid for? Will the government assume management responsibility, essentially driving insurers out of business, or will insurers play a role in the future similar to what they do today? And how about those smaller businesses that currently don't offer their employees health care benefits—will this market be a boon to insurers and agents? Talk of purchasing cooperatives also has agents concerned for their financial future. Until the specifics of the program are spelled out and approved, the consequences of these changes are an unknown.

While the insurance industry itself has historically been counted as opposing national health care plans, this position has recently changed. This may be a result of the realization that a national plan will become a reality and the insurance industry must lobby for its role as part of such a plan. The Health Insurance Association of America, for example, has proposed a plan for universal coverage. This proposal suggests that the government pay for medical costs for the poor through taxing benefits above a certain basic level. Private insurers and HMOs would provide managed care to the poor for preventive types of services. The Association of Health Insurance Agents voiced its support of this plan.

Insurance agents also have expressed concern regarding the proposed Health Insurance Purchasing Cooperatives that allow individuals to collectively purchase insurance. There is concern that this could dramatically erode the role of agents.

2. Internal Trends and Events

What are the insurance companies doing to deal with these critical changes affecting their industry? In general, they are responding through restructuring, streamlining and redirecting their attention to their primary business, and by an increased focus on the customer.

a. Restructuring

The insurance industry has used the recession and industry setbacks as an opportunity to re-evaluate how it does business. Nearly every insurance company has taken a hard look at its organization and focused its attention on how to better structure itself to be successful and competitive in today's market. This method has often resulted in mergers, acquisitions, streamlining and re-engineering of the business processes.

Merger and acquisition activity has been ongoing. Travelers Insurance Company sold a 27% interest to Primerica Corporation, while Kohlberg Kravis Roberts and Company, an investment bank, bought Aetna Life and Casualty Company's American Reinsurance Company subsidiary. Cost reduction has become the battle cry for many of the insurance giants who hope to streamline their business processes to be efficient, yet reduce costs in the process.

Attempts to streamline the business frequently lead to redesigning and re-engineering the business processes. In many cases, in fact, the IS organization has been the catalyst for this type of change. Efforts to reduce costs have led to many insurers rethinking their distribution system. Many are experimenting with direct mail as an alternative, and pressure at times is being put on agents to accept less commission or to increase prices. Information technology is seen as a cost-effective alternative to reducing costs and increasing the efficiency of underwriting, distribution, investment, claims, and administration activities.

As might be expected, staff cutbacks are the end result of many of these efforts with companies such as Travelers, who reduced their workforce by 10%—an action affecting almost 5,000 employees. Also, Kemper Corporation and Transamerica Corporation are leaving the property/casualty business, and in mid-1992, Aetna cut 4,800 positions, including 700 people in IS alone. Several insurers simply were not able to compete in this business environment, while others including Equitable, Aetna and Cigna have posted sizable losses.

b. Focus On Core Business

As part of its restructuring efforts, insurance providers are recognizing that they cannot be "all things to all people" and to be successful they need to decide what their business strengths are and focus their efforts in that direction. The trend is toward specialization and market segmentation. Companies are looking at their business and making decisions to focus on their most profitable products. This has resulted in both consolidations and divestures of less profitable businesses by multiline insurers.

As the insurance business becomes more global, specialization and segmenting the market will become even more critical. This emphasis will provide opportunities in the information technology area, as companies begin to turn to analysis tools to determine where and how to focus their efforts.

c. Emphasis on Service

Over the years, many insurance companies have become large bureaucratic organizations. The industry's image has been that of a conservative, stodgy business that requires time to respond to even the simplest of requests. However, the industry has come to realize that to be profitable, like any other business, it needs to be responsive to customer needs.

USAA, for example, realized several years ago that it had a chronic problem with managing customer records and responding quickly to needs. As a result, USAA made it a top priority to respond to customer needs in a timely manner.

Decisions to improve customer response generally lead to reliance on information systems tools to provide up-to-date data to improve response time to customer needs.

3. IS Trends

While IS has not been exempt from the cutbacks that have affected the industry, IS technologies are playing a crucial role in supporting current trends. Insurance companies are relying on IS capabilities to respond quickly to customer needs, target marketing efforts and conduct business processes with fewer people than has previously been the case. In short, information systems provide the tools to streamline business processes.

Cutting costs is clearly a high priority in the industry. In addition, there is a desire to move technology into the hands of the end user to allow agents to obtain needed data, marketing staff to analyze customer trends, and customer service staff to serve clients in a timely manner. As in other industries, these needs have led to a move towards the use of client/server technology and LANs.

Key trends impacting the insurance industry include linking technology to business strategy, cost reduction, re-engineering, a move to distributed systems and client/server technology, and EDI/electronic linkage.

a. Linking Technology to Business Strategies

As insurance providers undergo a restructuring process, they rely on Information Systems Departments to implement changes. For example, Travelers Insurance Company indicates that because information is actually their product, technology plays an integral role in their business. As they move forward (after the loss of 5,000 staff members) they are looking to information technology as a means of operating more efficiently with a limited staff. Simply stated, companies are looking to technology to support the streamlining of business processes. If insurers wish to react quickly to customer requests and complaints, they must use technology in order to facilitate action.

b. Cost Reduction

It comes as no surprise that cost reduction is a primary concern of insurance companies. Financial controls are as strong as they ever have been, with an emphasis on short term return on investment. Technology buyers are looking for cost-effective solutions to business problems that will have

a direct impact on the bottom line. In making IS decisions, critical questions will be, "Will investing in this technology reduce current costs?" and "Will investing in this particular technology present an opportunity to increase revenue in any way?" A vendor that can answer "yes" to these questions has a clear edge in selling his product/service to this industry.

c. Re-Engineering

The restructuring discussed earlier has led to re-engineering efforts, with companies analyzing business processes and evaluating alternative options. In the case of Blue Cross/Blue Shield of Virginia, for example, this has resulted in the movement of applications development off the mainframe to microcomputers using CASE tools.

d. Distributed Systems—Client/Server Technology

The focus on customer service is driving technology closer to the point of sale. Most insurers who for years have relied on centralized transaction processing are moving in the direction of distributed systems. While few have been so bold as to completely do away with the mainframe, they are recognizing the need for employees and agents to access data to support business decisions and respond to customer needs.

To reduce costs and remain competitive, companies are making decisions to consolidate data processing operations, reduce headcount and reduce hardware and software costs. Client/server architecture is becoming the technology of choice to address these concerns.

In 1992, Midland Mutual Life Insurance Co. replaced its host with a PC network using SystemPro file servers. Midland reports this allowed them to reduce staff from 55 to 22.

AMEX Life reports its implementation of LAN technology has yielded the multiple benefits of giving end users access to information, while reducing both operating and processing costs and increasing efficiency. Its strategy is to move away from host-based systems to hub-oriented enterprisewide networks.

Cigna has embraced the client/server architecture as a result of its restructuring activities and the redesign of several departmental operations. As a result, the IS group has been able to reduce costs by $30 million. Programmers are now refocused on developing solutions to business operations issues.

ITT Hartford is one company that made a decision to abolish its mainframe in favor of a cluster of DEC VAX machines linked to LANs in the field. ITT reports a 39% ROI on this change.

e. EDI/ Electronic Linkage

In INPUT's survey of 100 insurance providers, 53% indicated that electronic linkage was planned for at least one key application. In the insurance industry, such communications could also involve links between agents and their insurance companies. Northwestern Mutual Life Insurance Company, for example, announced that their agents would be using AT&T's InterSpan Info Access Service to share information with headquarters. Such a resource allows agents to access corporate applications and data bases at high speed and reasonable cost.

Government regulation and the adoption of EDI standards are also paving the way for the use of EDI for claims processing, as well as for other functions related to health insurance coverage and enrollment.

D
Issues

The major issues affecting the insurance industry are noted below.

1. Fraud

It has been estimated that property/casualty companies are defrauded of almost $18 billion per year. After tax evasion, insurance fraud is the second largest economic crime in the United States. Health care fraud totals more than $50 billion per year. The Insurance Research Council directed a research study regarding compensation and disability fraud that found that 14% of workers between the ages of 18 and 24 "saw nothing wrong" with filing false claims, and 17% condoned remaining off the job to collect benefits, even when they are able to return to work to collect benefits.

Yet despite these losses, there has been little concentrated effort or success in reducing insurance industry fraud. In 1992, however, the government formed the National Insurance Crime Bureau to deal with this issue, and in April of 1993 a group called, "The Coalition Against Insurance Fraud" was formed. It included insurers, regulators and consumer advocates to address this problem. Its plans are to use lobbying efforts and public education to deal with the problem.

2. Regulation

While insurance companies are regulated at the state level, the insolvencies and real estate delinquencies of recent years have led to a number of bills being introduced at the federal level to exert more national management over the industry, including such initiatives as solvency

standards. Many believe that, in these times, with insurance being a national and increasingly global business, insurance should be regulated at the federal level. Most notably, Rep. John Dingell, Chairman of the House Energy and Commerce Committee has proposed legislation in the form of HR 1290 to set solvency standards at the federal level. Representative Henry Gonzalez, Chairman of the House Banking Committee, has proposed similar legislation focused on redlining, a practice which can make insurance difficult to obtain in low-income areas. While organizations such as the National Association of Independent Insurers and Alliance of American Insurers have take position against federal regulation, the American Insurance Association and The National Association of Casualty and Surety Agents support modified version of Dingell's bill, which still has to be determined.

3. The Changing Buyer

Within insurance companies today, the buyer of IS products and services is often outside of the traditional IS department. One estimate showed that the average, non-MIS department in financial services industries on the whole spent more than $2 million on hardware, software, and outside services in 1992. In recognition of this trend, vendors need to develop relationships with the business units themselves, as they market their products and services to the insurance industry. These buyers expect the vendors with whom they do business to understand industry-oriented applications and be able to develop appropriate solutions.

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Information Systems

A

Organization and Use of Technology

The insurance industry has traditionally supported its systems requirements with centrally managed IS organizations that develop applications solutions in-house for the mainframe environment. Insurance companies see themselves as being in the information business. After all, they have no tangible products that they sell as in the case of a manufacturer. Their role is to analyze a variety of demographic and loss experience data and specific information about those that are insured and then generate policies to cover risks and make payments for claims. With no physical products, an insurance company's success is directly related to how it makes use of this information that is so important to its business. Information systems organizations assume roles of planning and implementing these important systems.

These long-standing traditions are beginning to change. Companies are now more interested in moving information into the hands of the individuals that will be using it and, therefore, the involvement of these users in applications planning is becoming more important. In order to make information more available throughout the organization, distributed systems and client/server architecture are both being considered.

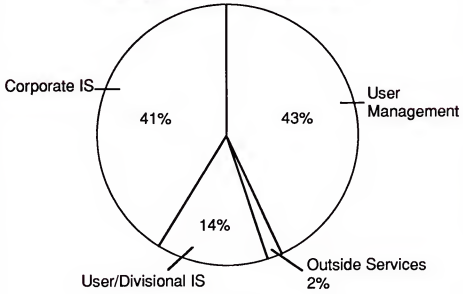
INPUT interviewed more than 100 insurance companies representing the property/casualty, life and health insurance segments of the industry, and found that the departments making use of the technology, the actual business units, are becoming increasingly involved in applications decision making. In fact, as seen in Exhibit III-1, nearly half the respondents reported the *user* will assume the primary management responsibility for applications changes being planned in the near future.

EXHIBIT III-1

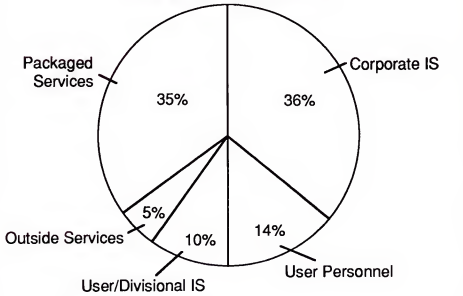
Insurance

Application Planning

Primary Management Responsibility for Planned Application Development*



Resources to be Used to Deliver New Applications*



* Percentage of those responding

An additional 14% reported that a combination of both the user department and divisional IS organizations will assume such responsibility. It seems that the responsibility for applications development is becoming more a shared responsibility between IS and user business units.

Packaged software is now becoming a more viable solution to meeting new applications needs, along with solutions developed by in-house programmers. In fact, as seen in Exhibit III-1, an equivalent number of respondents indicated usage of packaged software for new applications, as those indicating that corporate IS solutions were being used. User personnel and divisional IS organizations also play a role in implementing new applications.

As seen in Chapter 2, insurance companies have gone through a period of streamlining their organizations in response to market conditions. This has affected the IS organizations in these companies through budget cutbacks and staff reductions. At the same time, insurance companies are looking at information technology as an important tool for supporting many of their primary business goals—such as reducing cost, improving customer service and targeting marketing efforts. IS executives are often the leaders of re-engineering efforts, as companies review business process and make changes to their operations. In fact, a study by Taligent of top corporate executives in the financial services industry indicated that most were emphasizing a need to make IS a profit center.

Many of the companies that INPUT spoke with seem to believe that most of the organizational changes are behind them. A total of 54% indicated that no changes were anticipated while 26% expect changes related to decentralization and implementation of client/server architecture. Other types of changes mentioned included consolidation, cost reduction, implementation of relational data bases and an increase in training. Still others reported that changes were ongoing, but unpredictable.

1. Budgets

The insurance industry has gone through some hard times in recent years with insolvencies in the life insurance industry, record losses in 1992 in property/casualty insurance, and exponential cost increases in health care. As discussed earlier, this has been reflected in severe budget and staffing cutbacks.

One industry analyst reported that the average MIS budget in 1992 in the financial services industry as a whole, was $17 million, a 2.6% increase from the year before. Among the companies with whom INPUT spoke, 42%, as seen in Exhibit III-2, are planning to invest between $1 million and $5 million in applications changes in the next two years, exclusive of hardware. Another 16% expect to spend more than that. Of those responding, 20% indicated that plans call for spending between $100,000 and $500,000 on applications changes.

EXHIBIT III-2

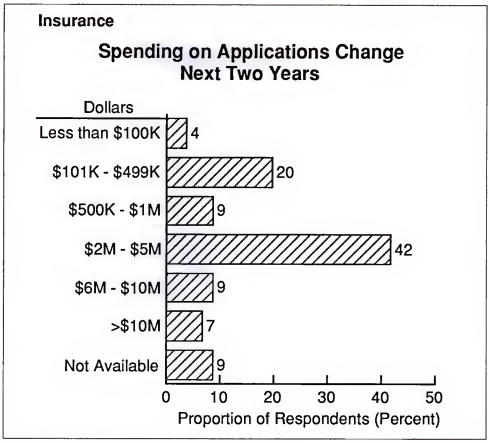
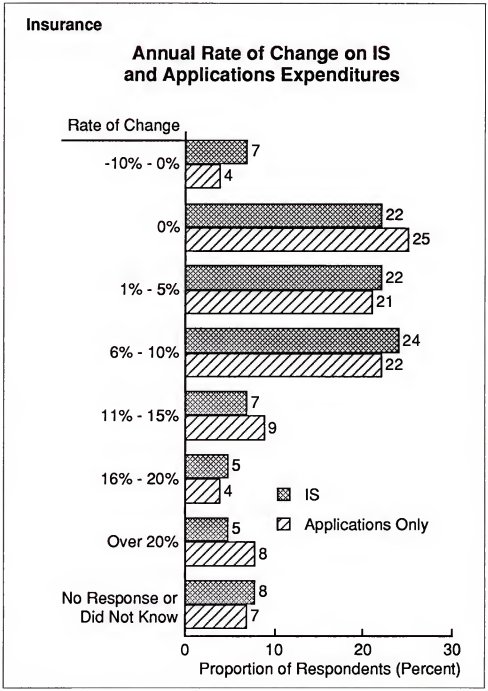


Exhibit III-3 shows the expected rate of budget change per year over the next two years by these companies. On average the IS budget is expected to increase by 7% per year, with 46% anticipating budget increases between 1% and 10% annually. No budget change at all is expected by 22% of the respondents. Estimated changes ranged from -15% to 50% for IS expenditures on the whole.

In looking only at expected applications expenditures over the next two years, as opposed to the total IS budget, the average annual increase projected was 9.5%. Forty-three percent expect changes of between 1% and 10% annually for applications, while 25% expect applications budgets to be flat. Twenty-one percent anticipate applications expenditures to increase by more than 10% annually over the next two years. Responses regarding expected changes on applications spending ranged from -5% to 50%.

EXHIBIT III-3



2. Hot Technologies

As insurance companies look to IS to be more responsive to their customers with less staff, a number of strategies and technologies are being evaluated, tested, and implemented. Insurers are looking for technologies that are relatively low cost and have the potential to increase revenue. These include client/server products, imaging, EDI/electronic linkage with business partners, relational data bases and laptop/notebook computers. On the horizon are pen-based systems.

Client/Server Products - As discussed in Chapter II, insurance companies, while far from abandoning their mainframes, are making some distinct moves in the direction of distributed processing. Of those surveyed by INPUT, 39% indicated that they expect to migrate to client/server platforms in the next two years. These companies that have previously relied on software and services focused on mainframe, transaction processing systems, are now looking at solutions implemented in a client/server environment. Of the new applications currently being planned by these companies, 40% will reside in a client/server environment.

Travelers Insurance Company has implemented several pilot projects focused on re-engineering some of its long-standing systems. Efforts focus on a strategy to move from a mainframe-based environment to a distributed system.

Imaging - Image processing refers to the electronic storage and retrieval of images of paper-based documents, rather than the paper itself. Thus, insurers process a huge volume of paper. Costs to store the paper are significant and delays and inability to find files are common. Innovative insurers are starting to electronically scan incoming and internal paperwork for storage on CD ROM or optical discs, making disc-based images accessible through systems networks to home office and field staffers who need access to the documents. Costs, while coming down, are still high, but innovators see image processing as both a cost-cutting measure (over time) and a boost in the effectiveness of their service to customers.

Hartford Insurance Group has been working for a number of years to upgrade its distributed claims system and, through working with Wang, has incorporated imaging to this system.

USAA, a leader in the innovative use of technology, decided to move to imaging as a means to improve business processes and quickly resolve records management difficulties. USAA makes use of IBM's MVS\ESA Image Plus products and has one of the largest imaging systems worldwide.

Connecticut Mutual Life Insurance Company has implemented imaging for scanning and dispatching mail along with a broad range of other in-house projects. One of these projects, while costing $6.5 million, has increased productivity by 35% , decreased the amount of paper used and, most importantly, resulted in improved quality and customer service.

Blue Cross has replaced the bulk of its microfilm claims system with Sigma Imaging Systems, Inc.'s OmniDesk document processing system. Benefits have included savings of as much as $1 million in one department, productivity improvements, and reduced costs—particularly in the area of document storage.

Chubb Services Corporation, a service for self-insurers, has implemented a paperless office. Their use of imaging for claims information and other documents makes needed data readily available to claims representatives.

Complete Health of Alabama has placed 100 gigabytes of health claims information on CD ROM for distribution to agents.

Those who have taken the step toward imaging tend to agree that a critical component to its success is the careful analysis and improvement of business processes prior to implementing the technology. Once a streamlined, efficient process is in place, imaging not only supports efficiency in operations, but can also stimulate the identification of innovative new ways to support the business goals of the organization.

EDI/Electronic Linkage - EDI is used extensively in industries such as transportation and manufacturing to provide direct, regularly scheduled computer-to-computer exchange of data—such as status of goods in shipment, electronic purchase orders, or notification of order fulfillment. In insurance, a parallel opportunity exists in claims submission and payment—especially between hospitals and large clinics, and the insurers responsible for payment.

Until recently, the costs for EDI have been sizable and use has been limited to those industries where its benefits are most obvious—such as grocery, retail and transportation. However, costs have now come down and the EDI vendors are beginning to focus on the next tier of possible users. For example, the health care and insurance industries are focusing efforts on electronic transmission of claims and other medical data. Some insurance companies now accept electronic claims and the Department of Health and Human Services has plans to automate claims processing by requiring health care professionals to file claims electronically. Agreement on EDI standards is needed to achieve growth is the penetration of EDI in this industry. With the whole health care system in the United States in a state of uncertainty pending the ultimate passage of health care reform, the timing for EDI penetration in this industry is still unclear.

Electronic linkage with agents is another area of potential benefit to insurers. As indicated in our report last year, over the last decade many insurers helped agents purchase agency automation systems with hopes of electronically tying such systems into insurers' networks for rapid approval and issuance of new policies. However, agents have typically used these systems to improve local record keeping, sales support and proposal preparation. In general, most interactions between insurance companies and agents have not evolved beyond paper-based communications with carriers— except to use fax instead of mail to send and receive paper. One factor limiting the use of such agency resident systems is the fact that insurers have not abided by consistent networking standards through which an agent can use a single local system to network with a number of different carriers.

INPUT is beginning to see changes in this area and an interest in increasing the use of electronic linkages. For example, Northwestern Mutual Life implemented easy dial-up access from 1500 PCs to a variety of applications. With one call, an agent can access both customer records and make changes to (or verify) various types of policy data. New York Life Insurance Company has implemented a project called NYL Express to allow up to 10,000 agents to send data from their PCs to company headquarters.

Over half (53%) of INPUT's survey respondents indicated that electronic linkages with customers or suppliers would be a component of applications being planned for implementation.

Relational Data bases - Insurance companies, like many other businesses, have evolved a wealth of information in their computer systems relating to such topics as demographics, claims statistics, customer purchases and a variety of other issues. Since insurance is something that most people or companies purchase for a variety of needs, the customer numbers are typically high. As agencies make greater use of systems to maintain their own records and files, more and more of this information will become available in digital form. Much of this data, however, is not readily available to the managers, employees and agents that need it to perform timely analyses and make appropriate business decisions.

A technical legacy of insurers' use of information systems is the fact that isolated information systems often were developed to serve only specific needs, resulting today in islands of data bases with little ability to connect or be integrated. This inhibits the company's ability to become a highly responsive data-driven organization, where knowledgeable workers can quickly access the right information from anywhere in the insurer's records to solve problems or satisfy customers' information or service requests.

Insurers have stated that improving customer service and responsiveness to customer needs are major business goals. This requires that agents have instant access to data to respond to requests. Information from a variety of systems is required for analysis to support more targeted marketing and market segmentation. As insurers make hard decisions regarding where to focus their more limited resources, automated tools are being relied on more and more. Companies need to be able to retrieve data from a variety of sources and analyze it different ways so as to make intelligent business choices and respond quickly to market concerns. Relational data bases, with their sophisticated information-retrieval capabilities, are viewed as one of the key ways to use technology to support business goals with lower staff numbers.

Many insurers are making use of relational data base technology as they upgrade their long-standing applications. This will permit the development of sophisticated customer profiles, allowing the insurance company to tailor products and marketing efforts to specific customer segments.

Laptop/Notebook - Due to their need to move around in the field and their sometimes remote locations, insurance agents and claims adjusters have been targeted as logical users of the lightweight portable technology that has been introduced in recent years. This technology is also valuable to peripatetic managers for use in their travels.

Wellington Insurance, for example, has provided its top managers with notebook computers and has plans to expand usage throughout the company. Electronic information systems are planned for use on these notebooks.

New York Life Insurance Co. is making use of notebook computers to support sales efforts. As of last year, most of its 9,000 agents were using them as a key component of a sales automation program. Estimates indicated that 30% or more of sales were generated with the use of the computer. Another large life insurer provides up-to-date information to its insurance agents through use of notebook computers.

Blue Cross has provided its sales force with notebook computers for convenience in tracking sales data as it moves towards a client/server environment, and Transamerica has announced testing of notebook computer applications for handling claims.

Pen-Based Systems - Pen-based systems offer a significant promise to those working "in the field" in areas that previously could not make use of computing tools. Insurance agents and adjusters function in such an environmnent, often doing business in clients' homes or offices. Pen-based computing can support the automation of claims. For instance, this technology was used to obtain basic claim information on-site following Hurricane Andrew. The Agency Company Organization for Research and Development (ACORD) has evaluated pen computing and believes it has great potential for use by sales agents and adjusters. It can simplify completion of the myriad of forms required in this industry. ACORD is planning to assist software developers in developing specific offerings for agencies. The biggest drawback to pen computing at this time is its limited ability to decipher handwriting.

B

Major Trends in the Use of Information Systems

IS organizations in the insurance industry are realizing that their role is changing radically. Gone are the days when IS was synonymous with "techies" separate from core business activities, with long applications development backlogs, and responsibility for producing a myriad of reports not necessarily related to each other. As in most industries today, IS management is made up of business-oriented people focused on closer alignment with the core business activities. Their goals are to provide more flexible user access to information and to develop solutions that allow the company to better use the information they have.

Today, MIS's primary responsibility is to operate the large data centers, while applications responsibility is being shifted more to business unit managers.

A major IS trend in the insurance industry is the move towards distributed systems, client/server solutions and downsizing. However, insurance companies are not giving up their mainframes. As shown in Exhibit III-4, INPUT's survey respondents indicated that 40% of their planned applications will reside on a mainframe platform. When specifically asked if the applications planned were being downsized, 71% of those surveyed responded "no." However, at the same time, there is movement towards a client/server environment, where the mainframe will fill the role of data repository or will continue to handle large, traditional applications such as general ledger, accounting, and payroll.

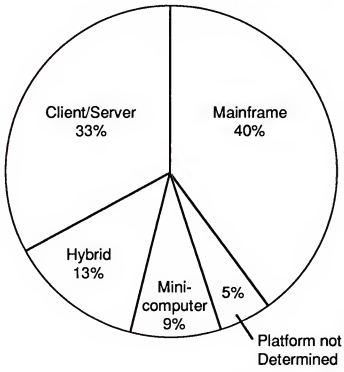
The need to bring data closer to the actual user of that information has accelerated the growth toward distributed systems and client/server architecture. Thirty-three percent of the applications planned by INPUT's survey respondents will make use of a client/server platform. While the minicomputer at 9% was the least popular platform, its usage may also be part of a client/server or hybrid solution.

When asked what platform changes companies are expecting to make in the next two years, 39% planned to migrate to a client/server environment, while 23% planned a general upgrade for their existing systems. The remaining respondents anticipated no changes at all, or indicated that increased standardization was the primary focus.

EXHIBIT III-4

Insurance

Platform for Planned Applications



Note: Percentages do not add to 100; percentages apply to respondents

1. User Needs/Concerns

User departments today are becoming heavily involved in systems decision making that affects their operation. They are seeking solutions that contribute to their ability to continue to operate effectively even in the face of severe budget cutbacks. They want to access user-friendly systems, easily manipulate the information, and perform the analyses necessary to their organizational activities.

Cost is a primary concern. With across-the-board budget cuts, users are looking for technology solutions with good, short-term returns on investment.

2. Use of Information Systems as Competitive Advantage

During the 1980s insurers' use of computers and information systems emphasized cost-cutting—for example, the replacement of accounting or clerical personnel with batch processing systems. Industry experts seem to agree that most of the available replacement-based benefits have now

been realized by the vast majority of insurers. For the 1990s, insurance information systems advances will focus more on achieving strategic competitive advantage by designing and implementing higher-level, more integrated information systems that will improve the efficiency and effectiveness of knowledge workers, so that companies can avoid errors, better serve customers, and work more efficiently.

There is some discussion about converting IS organizations to profit centers. Many IS groups that have weathered the learning curves of new technologies and implemented valuable insurance applications have much to offer outside their own domain. In some cases, IS groups have been spun off to create their own businesses to support other organizations with requirements for their services.

Insurance companies are increasingly looking to information technology as a way to increase their business. For example, Municipal General Insurance is making use of remote enquiry and processing systems that have significantly improved the company's sales to quotes ratio. These systems can make quotes available more quickly than competitor resources, giving Municipal General a competitive edge.

C
Key Applications

Although some applications used by insurers are common to other industries, many are unique to insurance. A brief summary of insurance industry-specific applications is noted below:

Rating systems - Makes use of formulas from insurance actuaries and applies risk profiles to provide underwriters with a base rate

Actuarial Support Systems - Provides mathematical and statistical number processing support for those who set standard rates

Policy Processing/Administration - Refers to systems that capture and process/administer insurance policies

Claims, Loss Payment - Data entry point for initial information regarding a claim and the administration of payments

Benefit/Pension - Tracks life/health benefits for company members and retirees

Reinsurance - Tracks reinsurance contracts

Accounting - Differs from other industries' accounting systems in its complexity, particularly as to financial transfers that reserve funds for future loss payments, complex tax treatments and regulatory reporting

Asset/Investment Management - Used to capitalize on the time between receipt of premium income and payment of resulting claims. These systems help insurance companies balance the allocation of financial assets to achieve company goals, while both meeting regulatory requirements and maximizing investment values.

As seen in Exhibit III-5, 54% of the applications being planned by INPUT survey respondents for implementation in the next two years were standard business systems for such uses as general ledger, payroll, finance, cash management and tax. Other applications being planned were for decision support, policy management, claims and billing activities. It is interesting to note that much of the emphasis is on generic applications rather than on industry-specific applications, such as policy management and claims processing. Major industry-specific applications are discussed in the following paragraphs.

EXHIBIT III-5

Insurance

Applications Planned for Implementation in the Next Two Years

* Includes accounting, finance, general ledger, payroll and administration

1. Sales Tracking

Insurers are finding that sales automation provides an important opportunity to apply technology to competitive advantage. Blue Cross of Philadelphia, for example, took a look at the fact that it maintained a large volume of customer data on the mainframe, but this information was difficult for sales representatives to access easily. The representatives needed up-to-date information to do competitive and "what if" kinds of analysis. In addition, they needed to have information regarding what products were being sold. The company believed that sales were being lost because of the time involved in sending paper back and forth to the home office. A decision was made to move to a client/server architecture to allow easier access to data, thus allowing timely analysis and better decision making.

2. Health Care Claims Processing

Today, over 300 million medical claims are handled through paper processing, and less than a third of Medicare claims are being filed electronically. In recognition of the need for improvement, there are many plans being developed for electronic claims processing by various governmental agencies and private insurance groups. However, at this writing, President Clinton's Task Force on Health Care Reform has yet to make its recommendations. Proposed changes toward a national health care system will dramatically affect the funding of health care and thus the issue of claims processing. The following are some of the current efforts under way to automate the claims process.

In 1992, the Health Care Financing Administration standardized the Medicare form for electronic submission. The Department of Health and Human Services has proposed a U.S. Health Claims processing network to automate health and medical insurance claims processing. Many insurance and health care representatives are supporting such efforts. Estimates have been made of savings of over $20 billion annually by the year 2000. The automated system would require the health care industry to file claims electronically and hospitals to automate their records systems. Medical offices would electronically submit insurance forms to Medicare and Medicaid via modem.

Private insurers are also moving towards greater automation. Transamerica Occidental Life Insurance Company has initiated a service called Dial-a-Claim, which allows doctors to file claims over the phone. Many believe that the use of EDI for claims processing is one of the next major implementations of EDI technology. In 1992, the X.12 committee of ANSI approved a standard for electronic claims processing via EDI. The National Electronic Information Corporation, the third party that processes claims for many of the largest insurers, supports this effort for standardization. Other advocates include the Health Care Financing Administration and Medicare.

An innovative implementation is Teknekron's fax service, where insurers and Medicare receive claims forms via fax, and the images are converted directly into computer records, thus eliminating time-consuming data entry.

3. Records Management

An important prerequisite for implementing electronic claims processing is automated record keeping. Today most patient records are not stored electronically. The Computer-Based Patient Record Institute is working toward implementation of a nationwide computer-based patient record network by 1998. The Institute of Medicine is also working toward automated patient records. Harvard Community Health Plan was one of the first HMOs to implement an automated medical records system, which includes both financial and patient information. By making use of a client/server platform, the goal was to make medical information available to the broad range of professionals that need to access it. It was felt that this approach would minimize existing problems of misplaced information or unnecessary tests. Prior analysis had indicated that lab results were unavailable more than 75% of the time, while patient charts could not be located for 30% of appointments. Automation would also allow management to better track how money was being spent.

4. Information Services

Harvard Community Health Plan also introduced a service to its members to provide information regarding minor health problems. With the ultimate goal of decreasing unnecessary medical appointments, information regarding common, nonemergency medical problems is provided.

The National Electronic Information Corporation, the clearinghouse which processes claims for a number of insurers, and PCS, Inc. both introduced an on-line service, Health Care Information Network, to provide medical workers with immediate information regarding patient eligibility for various services, along with financial information. It has been described as an important step toward lowering health costs and developing a medical data base on all those who are insured.

5. Medical Procedure Analysis

Given the high costs of health care, many insurers are beginning to look for software to help them track medical procedures and claims, so as to prevent payment for unnecessary or unauthorized procedures—or in some cases, overpayment. Statistics have shown that the great majority of inappropriate claims are filed by a relatively small number of physicians.

Both Metropolitan Life and Travelers, among others, have implemented or evaluated this type of software. These tools analyze bills, review tests and deny reimbursement for charges that are inappropriate. Specific procedures are reviewed to determine if they are warranted, based on the policy of the insured and the nature of the problem.

6. Expert Systems

Expert Systems have provided pioneering applications in underwriting, claims analysis, and fraud detection. Some of these applications have not yet moved beyond pilot stages, but many of them serve today as key aids to staff in a variety of insurance production functions. Last year Mortgage Guaranty Insurance Corp introduced a system referred to as ATLAS, which uses expert systems and client/server technology. The system was set up to automatically approve 20% of the applications processed, thus allowing underwriters to focus on more complex requests.

Central Life Insurance Company makes use of IBM/AI for cash management. The system applies the expertise of investment managers knowledgeable in this area. This AI system is used for standard requests and in situations where a manager is not available.

D

Use of Outside Products and Services

The insurance industry has been dominated by the largest of its members that handle the vast majority of policies written. In addition, the economic woes of the last few years have resulted in more consolidations. These large insurers tend to have IS organizations that are used to being self-reliant—developing and managing their own applications.

While the desire to handle things internally appears to remain quite strong, the emerging involvement of business units in IS decisions and the shrinking IS headcount could lead to more reliance on outside products and services. As the industry's legacy systems need to be upgraded, IS will, in many cases, need to seek outside expertise to support efforts to resolve many of the complex issues that will be faced. Third-party providers, however, need to be able to demonstrate their knowledge of insurance business applications.

A recent study of financial services MIS executives by the Business Research Group (BRG) found that 24% of respondents reported that they use outside services for such activities as application development, system integration, facilities management, and training. Twelve percent plan to increase their use of third parties for application development.

INPUT's survey of insurance companies found that only 2% were making use of outside services for new applications development while 5% were using third parties for implementation of such applications.

The insurance industry has exhibited much resistance to outsourcing,as compared with other industries. Since many of the systems were internally developed, the belief persists that they can only be managed in-house. Yet with the budget cutbacks in the industry and the need to replace outdated systems, practical issues may force some movement to outsourcing. For instance, Jackson National Life Insurance Company has just extended its 10-year outsourcing contract with EDS, thus allowing them to keep costs down while needed upgrades are made.

One of the largest health insurance outsourcing contracts was recently negotiated, with Blue Cross/Blue Shield of Massachusetts awarding a 10-year contract to EDS to manage its communication network and data center. This innovative venture will involve shared application development and management between Blue Cross and EDS.

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Information Services Market

This chapter discusses the expenditures for information services in the insurance market place. User expenditure forecasts are provided by delivery mode, and the assumptions driving the forecasts are presented. Note that these forecasts do not include functional, general-purpose information services, such as those which support human resources, accounting or generic planning and analysis activities. The markets for these types of information services are presented in INPUT's series of cross-industry Market Analysis Program reports, rather than in the industry-specific reports.

Note that the numbers used in the exhibits are rounded. Precise values are used in both the text and Appendix A, the Forecast Data Base.

Section A, *Overview* notes the overall size and growth rate of the insurance market's expenditures for information services. Section B, *Delivery Mode Analysis*, segments the data into INPUT's seven standard delivery modes.

Section C, *Industry Segment Analysis*, discusses the forecast in terms of the major market segments within the insurance industry. These segments are:

- Property and Casualty carriers (P&C)
- Life and health carriers, including the nonprofit, state-based Blue Cross/ Blue Shield organizations (L&H)
- Independent Agents and Brokerages (Agents)

A
Overview

A number of business and technical forces are impacting the insurance industry's use of information services in 1992 and beyond. This section summarizes the driving and inhibiting forces and notes INPUT's overall information services expenditures forecast for the insurance sector market.

1. Driving Forces

Emphasis on Customer Service - Responsiveness to the customer is a critical goal for insurers as they attempt to survive in these uncertain economic times and differentiate their products and services from those of their competitors. In order to be responsive to customer inquiries and react quickly to requests for quotes and other information, insurers are moving away from traditional mainframe-based operations to an environment that puts information into the hands of those who work closest with the customer. This is a considered reaction to the competitive reality that agents, claims personnel, underwriters and others need to have up-to-date information in order to be responsive to the customer. Management needs to be able to review data in a timely manner for effective decision making. It is this emphasis on customer service that is driving the move toward a distributed environment and spurring interest in client/server technology.

Technologies that are driven by the desire to improve customer service include RDBMSs and networked information systems. These network systems speed data access for executives and managers who monitor and respond to competitors and improve response times for all levels of insurance company employees that serve customers.

Strategic information systems that support improved competitive positioning, such as faster or higher quality service or responsiveness to customers and prospective customers are critical today in this industry. Agents selling in people's homes, for example, are finding that the laptop computer hardware and software permit instant development of a firm price quotation and can lead to closing a sale on the first visit.

Restructuring/Cost-cutting - As insurance companies have found it necessary to restructure their organizations to focus on only their most successful products (and in many cases redesign business processes), information technology is starting to play a dominant role. Insurers are looking to information technology to support more streamlined operations that can react faster in addressing problems. Software tools are needed for insurers to perform the ongoing analysis needed to support market segmentation. Agents need to constantly evaluate profitability and monitor sales of various products. Information systems are what makes much of this

possible. As re-engineering efforts proceed, the IS organizations are leading efforts to redesign processes for better efficiency. Also, companies that have had to significantly downsize their organizations are looking to information technology to allow smooth operations with fewer people.

The need to cut costs and the limited availability of capital during these difficult times are making outsourcing an option that insurers believe they need to consider. While there is still general resistance to the idea of handing over control of key resources to someone else, the realities of today's business are forcing many companies to consider this alternative.

Agent Networking - Electronic networking of insurance policy data between carriers and independent agents finally appears ready for implementation in the 1990s, based on new electronic standards promoted by industry standards groups. There are requirements for building an infrastructure to support agents in the field by giving them a sales support system and by networking with and between offices. In addition, artificial intelligence and expert systems are expected to play an increasingly important role in applications such as underwriting, risk management, investment planning, policy customization, and health services review analysis.

Aging of Legacy Systems - Over the years insurers have invested in large-scale mainframe systems to support their operations. These systems, however, are getting old and the structure of the business is changing. This is driving insurers to evaluate new systems to support their traditional business requirements and, given the need to put information closest to the user, to assess client/server technology.

Insurers are now moving from reliance on central mainframes toward a more highly networked environment with more distributed intelligence. In most cases, the mainframe will be retained as a central data base system. Systems networking will be a key for access to data bases and for use by PCs, workstations and file servers as part of new client/server architectures for re-engineered information systems.

Government Legislation - Insurers are regulated at the state level and requirements changes are ongoing constantly, affecting reporting needs for insurers. In addition, the federal government is considering legislation such as the proposed Dingell Bill, which will lead to more regulatory requirements. The ultimate outcome of the health care reform planned by the federal government will have major impact on how insurers make use of information systems. As an example, in the past several years, agencies such as Health and Human Services have supported efforts to require on-line electronic claims processing that will have an inevitable impact on the use of EDI and processing services.

Availability of Industry-Focused Services - The insurance industry is one that is much sought after by information services vendors who are increasingly tailoring IS solutions to address needs unique to this business area. Major IS vendors such as ISSC and EDS have targeted insurance as a key market for outsourcing services. ISSC and Continuum Company, Inc. recently negotiated an agreement to offer outsourcing services to the insurance market, taking advantage of ISSC's systems operations expertise and Continuum's knowledge of insurance applications. Alicomp, formerly part of the IS organization at Amalgamated Insurance, offers outsourcing to insurers. The availability of these services, tailored to the industry's unique needs, will drive the increased use of such services.

2. Inhibiting Forces

Economy - The long expected and hoped for economic recovery still remains elusive and not many have felt this uncertainty more than the insurance industry. With its record-breaking claims payments, low returns on investments and the aftermath of the junk bonds scandal, insurance companies have had to make some hard decisions— including budget cuts, layoffs and re-evaluation of property underwriting in areas where hurricanes (and other natural disasters) are a fact of life.

Insurers are looking to reduce IS costs, not increase them. This emphasis on cost cutting makes it more difficult to get new projects approved and delays decision making on the acquisition of information services.

Health Care Reform - Plans to revamp the health care industry in this country have all parties involved with health care, including insurers, in a state of confusion over how the reimbursement process for health care will be handled in the future. It is unclear what the role of insurers will be in the future, and, therefore, companies are reluctant to make decisions related to technology (or anything else) until this situation is resolved.

In-House Operations - As one IS vendor put it, its biggest competitor is internal data processing operations. Insurers have a long-standing tradition of developing and maintaining their information systems internally. While circumstances may drive them to increased use of outside services, many insurers are concerned about giving up control over systems that drive their business and are therefore resistant to the use of outside services.

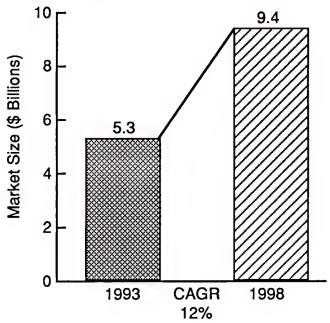
3. Information Services Market

Based on these driving and inhibiting forces, INPUT projects the 1993 and 1998 information services market for the insurance industry to be as shown in Exhibit IV-1.

EXHIBIT IV-1

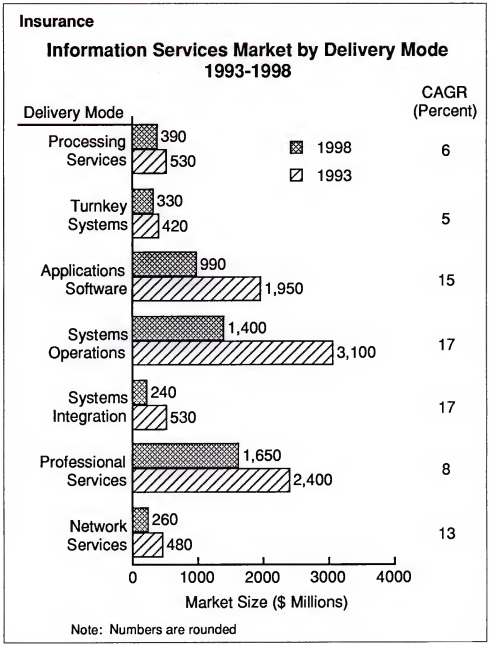
Insurance

Information Services Market, 1993-1998



Year-by-year detail is shown in the forecast data base (Appendix A). INPUT estimates that 1993 expenditures will be 9% more than those in 1992 with a compound annual growth rate (CAGR) of 12% from 1993 to 1998. This represents expenditures of $4.8 billion in 1992 growing to $9.4 billion in 1998. This growth is driven primarily by the systems operations, applications software, systems integration and network services delivery modes as seen in Exhibit IV-2.

EXHIBIT IV-2



B

Delivery Mode Analysis

1. Processing Services

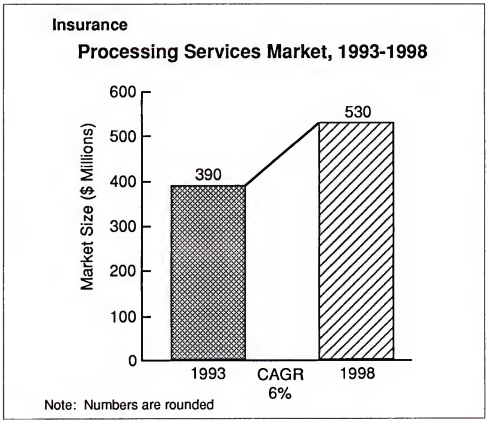
Processing services refer to the use of remote mainframe-based data centers for administrative and policy/claims processing. Such services charge customers based on the usage of the system. Insurance companies, particularly those in the small and mid-sized range, have made use of such

services over the years. Many of these companies were not in a position, in the past, to invest in the large-scale systems that dominated the industry and, therefore, processing services presented a cost-effective processing alternative. Larger companies also have made use of such services for special applications.

A significant amount of the processing services business comes from Medicare/Medicaid processing, generally contracted for through the Blue Cross organizations and through state governments. These organizations tend to outsource processing to larger organizations such as EDS.

However, the use of processing services across industries has declined in recent years as the availability and affordability of PCs and associated software and networking has made it effective for companies to invest in internal systems. While insurers will continue to make use of processing services, its rate of growth is anticipated at a modest 3% in 1993 growing from $381 million in 1992 to more than $390 million in 1993. As seen in Exhibit IV-3, the CAGR for the period 1993 to 1998 is expected to be 6% with expenditures increasing to almost $530 million in 1998.

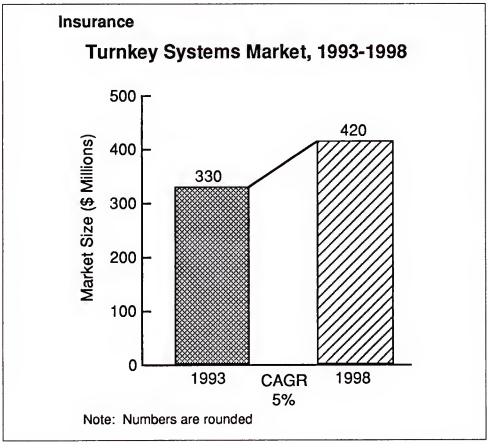
EXHIBIT IV-3



2. Turnkey Systems

Turnkey systems refer to bundled hardware and software solutions. Historically, turnkey systems have been based on minicomputer hardware platforms and have been most frequently used by smaller firms, as has been the case with processing services. Once again, however, the increased availability of affordable PC hardware and software has made it a more appropriate business decision to purchase hardware and software separately. With a turnkey system, the buyer is limited in his options to the extent of the capabilities of the hardware provided and is generally tied into a proprietary solution. While turnkey solutions will continue to be the best solutions to some specialized requirements, the rate of growth of these systems is also expected to be modest. Expenditures for 1993 are expected to be slightly more than $330 million, a 5% increase from 1992. The CAGR from 1993 to 1998 is projected at 5%, with expenditures totaling almost $420 million in 1998, as diagrammed in Exhibit IV-4.

EXHIBIT IV-4



3. Applications Software Products

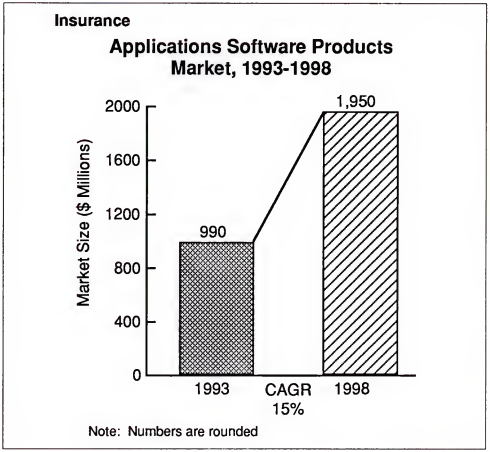
Applications software, unlike processing services and turnkey systems, is expected to enjoy a healthier rate of growth in the coming years, particularly on workstation platforms. As mentioned earlier, many insurance companies have long-standing legacy systems developed to meet the business requirements of earlier decades. However, the business operations and the direction of technology have changed, and insurers now find themselves needing to upgrade and replace these systems to meet today's requirements. While there is a well-documented tendency in the insurance industry for IS organizations to develop their own software, these companies are increasingly looking at the ability of packaged solutions to meet their needs. In INPUT's survey of 100 insurance companies, 35% of the respondents were planning to use packaged software solutions for new applications. With budget cutbacks, many companies simply cannot afford the high cost of maintaining a large in-house programming staffs. At the same time, vendors are tailoring their software solutions to the unique requirements within the insurance industry, and the availability of software is increasing. Many vendors are hiring individuals that have worked in the insurance industry to support their marketing efforts. However, despite the strides in this market, applications software vendors are likely to still meet resistance from these insurers that want to handle things internally.

The need for software is also fueled by the increasing need to make data more available to agents and employees who are using PCs and are purchasing laptops requiring PC-based software to analyze the information provided by the company data bases.

Agencies rarely develop their own software, as they are typically small to mid-sized businesses that cannot support an internal technical staff. As agents make more use of technology, they will look to outside vendors for applications software needed.

As seen in Exhibit IV-5, expenditures on applications software products in 1993 are projected to be slightly more than $990 million, an 11% increase over 1992. By 1998, these expenditures are expected to grow to close to $1.95 billion at a CAGR of 15%.

EXHIBIT IV-5



Due to advances in the functionality and affordability of PCs and workstations, along with the increased penetration of LANs and client/server architecture, the major growth in applications software will be for PC-based products. Expenditures for 1993 are projected at $515 million, an 18% increase over 1992's $437 million. The CAGR for 1993 to 1998 is anticipated at 21%, growing to $1.3 billion in 1998.

While client/server technology is driving growth at the PC level, expenditures on mainframe systems are also expected to grow as companies continue to make use of these systems as part of their overall architecture. In INPUT's survey, 40% of the companies planned to implement new applications on the mainframe. Expenditures for 1993 are expected to be $350 million, a 6% increase over the $329 million spent in 1992. The CAGR for the period 1992 to 1998 is projected at 7%, with expenditures growing to $495 million in 1998.

The minicomputer platform shows the smallest rate of applications software growth with expenditures for 1993 at $128 million, an increase of only 2% over the $125 million spent in 1992. Over the next five years, the CAGR will be only 3%, with expenditures totaling $148 million in 1998.

4. Systems Operations

Systems operations represents the greatest opportunity for information services growth in the insurance industry. This opportunity exists despite the general resistance that this industry has traditionally had to outsourcing. Insurers are reluctant to hand over management of the complex, internally developed systems upon which the business depends to outside parties. However, at the same time, this industry has a strong need to cut costs. Many of its systems need to be replaced at a time when companies are trying to keep capital expenditures at a minimum. Company downsizing has resulted in fewer staff to develop and manage systems. As a result, many insurers, while slow to implement this approach, are seriously looking at outsourcing, and industry watchers believe a strong movement towards this alternative is close. Other industries, such as banking, that have faced problems similar to those encountered by the insurance industry, have embraced outsourcing.

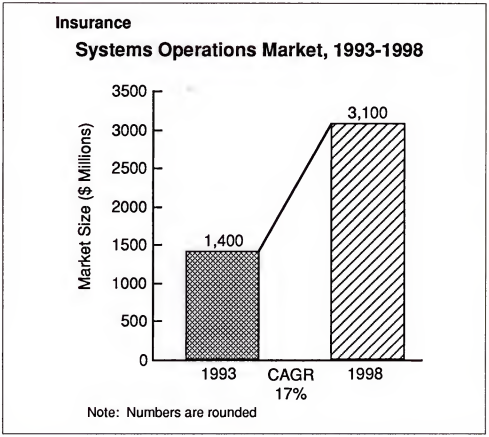
In addition, vendors are developing outsourcing services geared specifically to insurers. EDS supports many Blue Cross organizations, as well as Jackson National Life Insurance Company. Alicomp and CBS have undertaken an outsourcing venture capitalizing on Alicomp's first-hand insurance knowledge, obtained as part of Amalgamated Life Insurance Company. ISSC and Continuum have announced an agreement to provide outsourcing services to life insurers, and it is expected that health insurers will spearhead additional outsourcing activities.

Spending for systems operations services in the insurance industry for 1993 are projected at $1.4 billion, a 16% increase over 1992's expenditures of $1.2 billion. As noted in Exhibit IV-6, by 1998, expenditures are expected to grow to nearly $3.1 billion, at a CAGR of 17%.

This healthy growth rate is based on two factors. First, many outsourcing agreements involve such sizable expenditures that even one company's decision to outsource can have a significant effect on the market. Second, as the economic viability of this alternative becomes more obvious and as insurers embrace the outsourcing concept, the growth is expected to be substantial.

Platform and application operations represent the largest segments of the systems operations delivery mode with CAGRs of 14% and 15% respectively. Desktop systems and network management, while representing a small percentage of expenditures in this category, are expected to have CAGRs of 19% and 26% respectively.

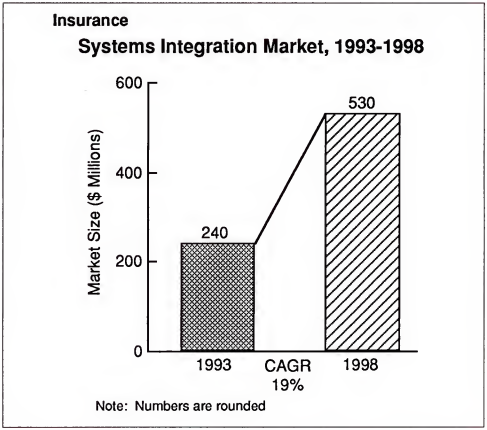
EXHIBIT IV-6



5. Systems Integration

On a systems project, systems integrators act in a role similar to that of a general contractor. In this capacity, they assume project management responsibility and generally bear some financial risk for the success of the project. Despite the reluctance of insurers to rely on outside expertise as they plan new systems, the complexities of today's information services technology are expected to drive insurers towards increased dependence on such services. In addition, as insurance companies move toward implementing new technologies and applications with fewer IS staff on-board, the use of a system integrator to develop the best solution to their specific needs becomes more attractive. The market for systems integration services is expected to increase by 9% in 1993, raising expenditures from $219 million in 1992 to almost $240 million in 1993. The CAGR for the 1993-1998 period is projected at 17%, resulting in expenditures of $530 million in 1998. Systems integration growth is diagrammed in Exhibit IV-7.

EXHIBIT IV-7



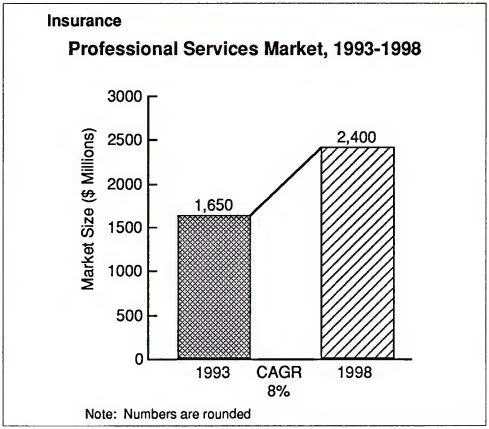
6. Professional Services

As insurers move toward updating legacy systems and evaluating newer technology options such as imaging, EDI and client/server options, professional services companies will play a role in helping to define objectives and implement IS projects. Such expertise will be needed for a number of reasons. Insurers are operating with fewer staff and, therefore, have fewer resources to assign to evaluate alternatives. Agents and brokers do not typically have in-house resources to direct them. In many cases, in-house staff will have limited, if any, experience with these newer technology options. Professional services firms, particularly those that specialize in planning and implementing these systems for insurers, have an opportunity to provide services to fill such gaps.

While it is anticipated that professional services growth in 1993 will be only 5%, reflecting the troubled state of the industry in recent years, expenditures for these services will have a CAGR from 1993 to 1998 of 8%. This represents a growth in expenditures from almost $1.65 billion in 1993 to $2.4 billion in 1998. While software development has traditionally represented the largest submode, with expenditures of $964 million in 1992, growth is expected to slow to 2% in 1993, and have a CAGR of only 6% from the period 1993 to 1998. This new growth rate is attributed

to the reduction in large-scale mainframe development projects, which involved professional services consultants in the past. Today, the submode of professional services with the largest growth rate is expected to be education and training with expenditures in 1993 increasing by 13% to $244 million and a 1993-1994 CAGR of 11%. IS Consulting is also projected to have a CAGR of 11% for the same period. The profesional services market growth is summarized in Exhibit IV-8.

EXHIBIT IV-8



7. Network Services

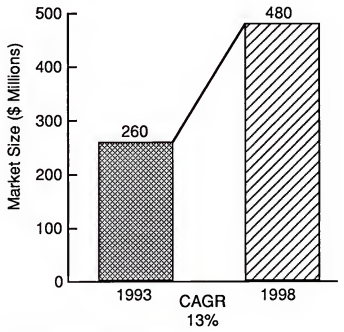
Despite the historical limited use of general purpose value-added packet network services, the insurance industry is looking towards network services as a means to support several of their key business goals, such as improved customer services and increased operational efficiency. As companies strive to be responsive to customers, the need to put information in the hands of the person closest to the customer is becoming more important. Agents need to have up-to-date information from the insurer's customer data base. Agents in the field are using laptops to develop quotes and close deals on the spot. These activities are best served through the use of communications networks. Expenditures on network services in 1993 are projected to be nearly $260 million, an 8% increase over 1992. By 1998, expenditures in this category are expected to be $480 million, growing at a CAGR of 13%.

Insurers have made advances in providing agents with easy access to data through dial-up services using a standard number, regardless of location. Efforts are continually being made to improve the ease and availability of information to those out in the field. As a result, expenditures on electronic information services are expected to grow (by 8%) to $182 million in 1993 and $328 million in 1998—a CAGR of 11%. Network services, five-year growth is summarized in Exhibit IV-9.

EXHIBIT IV-9

Insurance

Network Services Market, 1993-1998



Note: Numbers are rounded

Due to both the need to operate efficiently and comply with government requirements, the use of EDI technology for claims processing, along with qualifying and signing new members to health programs, seems well on its way to becoming a reality within the next five years. Expenditures on network applications will grow by 10% in 1993 to $64 million, increasing to $158 million in 1998 at a CAGR of 19%.

C
Industry Segment Analysis

The life/health segment is responsible for the largest percentage of projected expenditures, generating $2.8 billion in 1992 increasing to $3.1 billion in 1993, and nearly growing to $5.5 billion in 1998. This trend is due to both the size of this segment and the expected increases in the use of technology—particularly in the health care segment. Federal requirements for on-line claims processing, along with plans for a national health care program, are expected to have dramatic effects on the use of technology within this market segment.

The property/casualty segment is the next largest with expenditures of $1.6 billion projected for 1993, growing to $2.9 billion in 1998.

Agent broker expenditures is the smallest segment, reflecting the size of these businesses, limited use of technology and the dependence on the large insurers to provide technology solutions. However, expenditures in this category are still expected to reach $1 billion by 1998.

Vendor Competition

A
Introduction

This chapter presents a description of information services vendors serving the insurance sector. The chapter is divided into the following sections:

- Competitive Climate
- Competitive Positioning
- Leading Vendor Profiles

INPUT conducts extensive analyses of vendor revenues. In order to present useful and accurate information for the insurance sector, U.S. revenues were subtracted from worldwide revenues.

B
Competitive Climate

The competitive climate in insurance is influenced by changes in technology and a dramatic shift in insurance company operational focus. Insurance companies are making customer service their primary focus with an eye toward reduction of costs. This shift is affecting all aspects of the insurance business.

Technology shifts in the insurance sector have driven increasing acceptance of external information system products and services. There also has been a growing acceptance of client/server technology as insurance companies migrate from legacy mainframe systems. One key area for client/server implementations has been agent interaction with company headquarters.

According to an INPUT survey of end users, 30% of companies surveyed are moving to a client/server models, especially in the area of field agent interactions. This client/server opportunity requires information system vendors who exhibit expertise with networks, mobile computing, the use of notebooks and distributed data bases, and pen-based computing.

Insurance companies are now also assessing the competitive importance of moving away form legacy systems. The migration from legacy systems presents a huge opportunity for vendors offering software solutions. This migration poses an opportunity not only in systems migration but also business process re-engineering and training. Some areas that show opportunities include executive information system applications, decision support systems, and data access tools.

All signs indicate that outsourcing in the insurance industry is growing. In the insurance sector, profits are under pressure from the prolonged recession, there have been increased policy settlements from natural disasters, increased competition, and increased acquisitions.

Finally, information systems and services vendors participating in the insurance sector need to understand that the systems purchase decisions are shifting to the departmental or end-user level, away from the more traditional single point of contact in the information systems staff. Consequently, purchasing patterns are shifting, and it is increasingly important that information system vendors demonstrate industry knowledge.

C
Competitive Positioning

Participating vendors in the insurance segment report that the competitive climate is characterized by increased competition, especially for claims processing, though the competitive landscape is still dominated by a small number of information services vendors of software, systems and services. As technologies and architectures shift in the industry, many vendors are facing a steep investment when they consider the migration of their product sets away from the mainframe environment.

Experienced personnel also are becoming crucial for competitive positioning, as clients ask vendors for demonstrable industry and technical expertise in new technologies like imaging, mobile computing, and client/server architectures.

Competitive trends and areas of opportunity in specific delivery modes include:

1. Processing Services

Increased competition and market uncertainty concerning health insurance legislation are the key trends for vendors in processing services. In addition, industry consortia are participating in the processing services delivery mode. Processing services vendors are also noting increased interest by the regional bell operating companies (RBOCs).

One area of opportunity in claims processing is workers compensation, one of the last health claims areas to come under cost containment scrutiny. Legislation that essentially "deregulates" workers compensation companies has recently been enacted in California, with several other states soon to follow. This poses a significant opportunity for vendors, as competition increases and customer service becomes crucial to differentiating insurance product offerings.

2. Application Software

Changes in application platforms and the importance of system integration and professional services bundled with these applications, intensifies competition in this segment.

3. Professional Services and Outsourcing

Outsourcing and professional services in the insurance industry are poised for growth. Growth in professional services contracts and outsourcing has been driven by data center consolidation, a subsequent reduction in information services budgets, and projected reductions in hardware and software costs. Many signs indicate that outsourcing in the insurance industry will continue to grow. These signs include an industry where profits are under pressure from the prolonged recession, increased policy settlements from natural disasters, and increased international competition.

4. Re-engineering

Re-engineering of business processes has become increasingly important as insurance companies reorganize to address the market challenges and face painful cost reductions. Insurance companies are reorganizing to become "customer-focused" organizations.

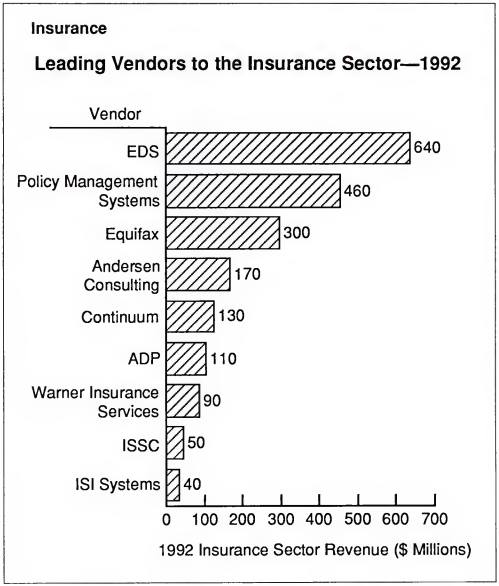
5. Systems integration

System integration services offered to the insurance market are characterized by increased competition and high return. The systems integration market is growing rapidly. Key factors for vendors are: knowledge of the key business issues for the industry, experience in implementing solutions in the industry, and the ability to deliver distributed open solutions in a complex networked environment.

D
Participating Vendors

The following exhibit presents the leading information services vendors in the insurance sector. The vendors in the professional services market are diverse and include Big 6 firms, subsidiaries of industrial firms, computer hardware firms and vendors devoted to professional services.

EXHIBIT V-1



E
Vendor Profiles

The profiles offered in this section provide company background, strategy, products and services and key issues data for three of the largest vendors to the insurance market.

1. Electronic Data Systems Corporation

7171 Forest Lane
Dallas, TX 75230
Phone: (214) 604-6000
Fax: (214) 604-6545
Chairman & CEO: Lester M. Alberthal, Jr.
Status: Wholly Owned Subsidiary
Parent: General Motors Corporation
Non-GM Revenue: $4,806,700,000

a. Company Background

EDS, founded in 1962, is a world leader in the application of information technology (IT), providing information processing, systems management, systems integration, systems development, consulting, software products, and process management services to customers worldwide. EDS serves public and private organizations in banking and finance, communications, energy, government, health care, insurance, manufacturing, retail, and transportation.

b. Strategy

- EDS addresses the insurance market by providing comprehensive product and service offerings. These products are offered through three different business units in EDS—insurance, state and local government, and health care.

- EDS is focusing on offering companies providing health, life and property, and casualty insurance—a service designed to examine their business practices as well as design and plan information systems. This reengineering focus provides an overall framework.

- EDS has announced the establishment of a technology service center in Urbandale (IA) that will provide insurance companies with document processing technology on a shared basis.

c. Products & Services

State Operations Divisions - EDS's State Operations Division, headquartered in Herndon (VA) with 4,700 employees, provides consulting, systems development, systems integration, systems management, and process management services to various state government agencies in 27 states and the District of Columbia and has more than 100 local government customers nationwide. EDS supports a range of areas, from health care and human services, to transportation, justice, education, and the environment.

EDS currently provides Medicaid claims processing services for 18 states and processes more than two-thirds of all Medicaid claims submitted in the U.S. EDS also supports states' managed-care initiatives. Medicaid customers include Alabama, Arkansas, Delaware, California, Connecticut, Delaware, Georgia, Idaho, Indiana, Kansas, Kentucky, New Hampshire, North Carolina, Pennsylvania, Rhode Island, Texas, Vermont, Wisconsin, and Wyoming.

Insurance and Health Care - EDS provides a range of services to commercial insurance companies, Blue Cross and Blue Shield organizations, and managed care groups. During 1992, EDS processed 545 million health care claims covering 60.4 million individuals. There are over 170 customers, including 66 Blue plans in NASCO, representing almost 30% of the insured U.S. population. EDS offers a complete set of products and services to companies and state and local governments providing health care insurance and benefits processing. In addition to the Total Plan System (TPS) product line for private insurers, EDS also offers a managed care alternative called TOPPS.

Contract awards include the following:

During 1991, EDS extended its 22-year association with Blue Shield of California with an agreement to install advanced membership and claims systems and a management data base information reporting system. EDS also unveiled a new, integrated medical information system for HMOs and large group practices. The system was designed by InterPractice Systems, a joint venture between EDS and the Harvard Community Health Plan of Brookline (MA).

During 1992, EDS was awarded its largest contract ever in the health-and-benefits area (extending a two-year relationship) and the second-largest commercial contract in company history—by Blue Cross and Blue Shield of Massachusetts. Under the 10-year, systems management agreement, EDS assumed responsibility for all information technloogy services.

Also in 1992, under an expanded 1991 contract, EDS signed an agreement with Fremont Pacific Insurance Group, one of the top 20 providers of workers' compensation insurance in the U.S.

In early 1993, EDS was awarded a three-year contract with Blue Cross and Blue Shield of Texas to install and upgrade its Medicare claims processing system and provide ongoing consulting and maintenance.

Also in 1993, EDS will provide an imaging and intelligent character recognition (ICR) system for Sanus Corp. Health System, a managed care company. This is the first imaging and ICR agreement EDS has signed with an HMO and builds on EDS's existing imaging and ICR installations at several Blue Cross and Blue Shield Plans.

d. Key Issues

- Re-engineering is new framework for EDS products and services.
- EDS is well-positioned to address the changing demands of the health care market EDS's flexible system design is positioned for the transition in the health-and-care sector to managed care.
- In 1992, EDS signed an agreement with The Freedom Group (TFG), a provider of insurance industry software systems and services. This alliance combines TFG's property and casualty software products and third-party administration experience with EDS' consulting, systems integration, and systems management expertise.

2. Policy Management Systems Corporation

P.O. Box Ten
Columbia, SC 29202
Phone: (803) 735-4000
Chairman, President,
and CEO: G. Larry Wilson
Status: Public
Total Employees: 4,300
Total Revenue: $497,000,000
Fiscal Year End: 12/31/92

a. Company Background

Policy Management Systems Corporation (PMSC) provides processing and electronic information services, applications software products, and associated support services to the insurance industry.

PMSC was formed in 1974 as the PMS Division of Seibels, Bruce & Company. Data processing and related services were provided to Seibels on the basis of actual cost, which did not include a profit factor. Currently, Seibels' holdings represent less than 1% of the outstanding common stock of the company.

Prior to 1989, PMSC and IBM had worked together under various agreements. In 1989, this relationship was strengthened through IBM's acquisition of a 19.8% minority equity interest in PMSC for $116.8 million.

IBM is entitled to increase its ownership interest up to a maximum of 30% by purchasing PMSC common stock in the open market. IBM's ownership interest in PMSC was 16.5% as of December 31, 1991.

b. Strategy

- As part of IBM's purchase of PMSC stock, IBM and PMSC agreed to work closely together to develop and market automated solutions for the insurance industry, collaborating on sales and marketing programs and systems development in the U.S. and Europe.

- PMSC's strategy is to build a larger base of recurring systems licensing and services revenues. As a result, initial software license charges have continually declined, representing only 7.5% of total revenues in 1991, compared to 16.4% in 1985.

- PMSC's target market for its products and services is the over 3,200 property and casualty insurance companies, over 6,000 group life and health providers, and independent agents and adjusters in the U.S. and Canada. PMSC also offers its software products and related automation support services in 21 foreign countries.

c. Products and Services

PMSC currently offers over 100 primary products and services, including more than 70 software products.

PMSC's primary software products run on medium and large-scale IBM and compatible computers. In addition, certain products run on microcomputers and intelligent workstations.

- Series III is an integrated family of products targeted at large companies that will fully automate the insurance process, from the initial application for insurance to annual statement preparation.

  - Series III is being developed around IBM's SAA, which allows for cooperative processing, systems portability, expert systems, intelligent workstations, and relational data bases.

  - Series III WorkNet systems will automate information gathering and decision support functions such as sales and marketing, underwriting, and claims review and settlement.

- Series III I-Base systems will store and manage data and automate scheduled activities, such as billing and collection and statutory and management reporting.

- PMSC has commitments from 20 insurance companies to use various Series III components and assist in defining system requirements.

PMSC customers may use software licensed from the company on a remote processing basis through PMSC's data and remote service centers located in Columbia (SC), Toronto, Chicago, Dallas, Boston, and Lawrenceville (NJ).

PMSC also offers specialty processing services to its customers for unique, highly regulated business, such as Massachusetts automobile, Texas personal lines, and automobile-assigned risk plans.

PMSC also offers complete outsourcing solutions for clients' MIS requirements, including systems management, processing, administrative support, policyholder services, and claims support.

PMSC provides third-party administration, including complete processing and full clerical and policyholder services support for private passenger and commercial automobile assigned risk and similar types of business.

d. Key Issues

- During the first quarter of 1992, PMSC and IBM's services subsidiary, Integrated Systems Solutions Corporation, announced an agreement to jointly provide outsourcing services to the entire insurance industry—property and casualty, life, and health.

- PMSC continues to work with the Market Transition Facility, formerly the New Jersey Automobile Full Insurance Underwriting Association.

- PMSC entered into a definitive pact to purchase Cybertek Corporation, an insurance software company in Dallas in June 1993. It is estimated that PMSC paid $60 million for Cybertek.

- PMSC's line of Series II products is currently positioned as a client/server product line, complementing the PMSC outsourcing product line called Total Policy Management (TPM) services.

3. ISSC

560 White Plains Road
Tarrytown, NY 10591
Phone: (914) 333-3030
President & CEO: Dennie M. Welsh
Status: Subsidiary
Parent: IBM Corporation
Total Employees: 10, 274*
Total Noncaptive Revenue: $657,000,000
FYE: 12/31/92

*Includes 3,070 Advantis employees

a. Company Description

ISSC holds the majority interest in Advantis, the networking services joint venture formed in December 1992 between IBM and Sears, Roebuck and Company, and provides networking support. Advantis' operations will be consolidated in IBM and ISSC's financial statements for 1993.

ISSC's parent, IBM, headquartered in Armonk (NY), had worldwide revenues of $64.5 billion for 1992.

b. Strategy

- Integrated Systems Solutions Corporation (ISSC) was formed as a wholly owned subsidiary of IBM to establish IBM market leadership as a world-class supplier of systems operations services to both external and internal customers.

- ISSC is resolved to grow well beyond conventional outsourcing into custom-tailored alliances across a range of vertical industry niches. In early 1993, ISSC expanded its vertical market focus from 11 to 16 sectors. The insurance industry is one of those sectors.

- Together with Policy Management Systems Corporation, ISSC plans to provide extensive electronic links between health care providers, payers, and patients.

c. Products and Services

Systems Operations—IBM's systems operations agreements are long-term in nature, typically five to ten years.

ISSC provides day-to-day management for significant portions, if not all, of the client's IS infrastructure, including operations, production control, end-user support, maintenance, as well as application development and maintenance.

ISSC may also work with clients to design a new IS environment, then develop and manage the total implementation. The implementation may include consolidation of multiple data centers, voice, and data networks, standardization of platforms, application convergence, and systems management.

Systems operations services are available from ISSC as follows:

- Remote Systems Operations: ISSC remotely manages the client's current systems from its Boulder (CO) facility.
- Onsite Operations: ISSC assumes on-site operational responsibility, which may involve the consolidation and restructuring of existing facilities.
- Shared Host Environment: The customer's processing requirements are brought into an existing ISSC facility.

Major ISSC facilities are located in Atlanta (GA), Bethesda (MD), Boulder (CO), Chicago (IL), Lexington (KY), Southbury (CT), and Sterling Forest (NY). There are over 15 additional sites where ISSC is operating previously client-owned data centers, and two other sites at which ISSC operates large-system Business Recovery Centers.

ISSC also provides traditional service bureau services where it assumes processing responsibility for a particular application.

Professional Services—ISSC provides management, function, and information technology consulting services generally in the areas of data center and network operations, and linking business strategies to technology.

ISSC also can assume ongoing responsibility for a client's application development process and staff, including the design, programming, and implementation of new applications and for ongoing application program maintenance.

Systems Integration Services—ISSC may act as the prime contractor for an IS project. ISSC's integration services generally are shorter in duration than its systems operations contracts.

Business Recovery Services—ISSC's business recovery services include planning, testing, and, in the event of a disaster, use of an IBM Business Recovery Center. Two classes of services are offered—one targeted to large systems environment and one targeted toward midrange systems.

ISSC has large-system Business Recovery Centers in Tampa (FL) and Franklin Lakes (NJ). These two centers have multiple, large-system processors and peripherals, and both IBM and non-IBM networks. The Franklin Lakes operations will be moved to Sterling Forest (NY) in September 1993. A third large-system center, supporting the System/88, is located in Gaithersburg (MD). ISSC also offers Remote Customer Sites in Chicago, Los Angeles, Minneapolis, Oakland, Dallas, Seattle, and Atlanta to remotely access the centers in Tampa and Franklin Lakes.

Business recovery services for the midrange environment are currently provided through regional Business Recovery Centers in Atlanta, Detroit, Philadelphia, Los Angeles, Washington D.C., Tampa, Dallas, Chicago, Seattle, and Franklin Lakes. These centers house either IBM System/36, System/38, and/or AS/400 systems.

Business recovery services are priced on a subscription-fee base. Subscriptions are available for one, three, or five-year terms.

d. Key Issues

- ISSC has agreed to jointly sell outsourcing services to the insurance industry with software provider, The Continuum Company.

- In early 1992, IBM, ISSC, and Policy Management Systems formed Inserv, a venture focused on providing outsourcing services to the life, health, property, and casualty insurance sector. Both ISSC and Policy Management Systems are free to market their respective services independently under this nonexclusive pact.

- In August 1992, ISSC entered into a $32 million, five-year technology development agreement with Blue Cross/Blue Shield of New Jersey. Scheduled development projects include an extensive Blue Cross and Provider data base; a claims network; image-based electronic claims processing; sales automation; integrated multiparty office and administrative automation; automated enrollment, reporting, and auditing; and on-line user access to enrollment data.

- In January 1993, Dennie M. Welsh was promoted from President to Chairman and CEO. ISSC also named Sam Palmisano, a top executive of IBM's Asia/Pacific operations, as ISSC President, possibly indicating a strengthening of ISSC's international role.

- ISSC continues to operate without its own sales staff. ISSC's marketing team meets with customers only after IBM sales staff have first identified prospects while selling other IBM products.

Conclusions and Recommendations

A
Industry and IS Market Conclusions

This is an industry accustomed to stability, with somewhat predictable patterns of profitability and growth, that has had to cope with both instability and unpredictable events in the recent past. With hopes of competing effectively in the financial marketplace, life insurers made investments that, in many cases, ultimately resulted in their own insolvency. The number of claims filed as a result of hurricanes, floods, tornadoes and riots has wreaked havoc with the reserves of property/casualty insurers. The industry is uncertain as to the effects of government plans for national health care and possible federal regulation. This is an industry that is reacting to a series of unfortunate eventsand trying to position itself in an economy that is still not firmly on the road to recovery.

For information services vendors there is both good and bad news related to these industry issues. First, the bad news—insurers are cutting costs, looking more carefully at expenditures and looking most favorably at projects with a clear short-term return on investment. This is not a time for investing in technology for its own sake because it looks like it might be of value. This is a time for selecting information services that will support insurance companies' strategic efforts to streamline the business, operate more efficiently, and most importantly better serve the needs of its customers. The good news is that information services have the capability to offer solutions to the critical business problems that the industry is facing today.

Insurers require huge volumes of data to operate their businesses. This data typically reside on large mainframe systems that were installed some time ago. As companies strive to serve their customers better by putting data into the hands of the individuals helping them—and as they try to run their business more efficiently, typically with far fewer people than they had a few years ago—they must look at making changes to information systems. For many companies, this means migrating to a client/server environment to make information more available to those who need it.

Implementing relational data base management systems (RDBMS) is a critical component for managing the data that these companies already maintain but cannot easily access, and imaging systems or services are being evaluated to support efforts to efficiently and quickly respond to customer issues. Agents are making use of laptops to gain competitive advantage by linking into appropriate data bases to provide on-the-spot quotes. Electronic claims processing is moving toward industry standardization.

For some companies, budget cutbacks will mean taking a more serious look at outsourcing some or all of the data processing operations. Others that decide to continue in-house management will need to rely on professional consultants and systems integrators, as they proceed through the decision-making process inherent in major IS changes. On the whole, the net effect of changes facing the insurance industry today is likely positive for IS vendors, particularly with regard to applications software products, systems operations, networking and the use of consultants and systems integrators.

As a result of its analysis, INPUT has developed two sets of recommendations. The first is focused on the insurers themselves and provides guidelines for the information services decision process. The second set of recommendations is for vendors that sell information services to the insurance industry. These recommendations are focused on specific strategies that will be useful to vendors in their dealings with buyers in the insurance industry.

B
Insurance Industry Recommendations

1. Align Technology Direction with Business Strategies

As insurers reorganize and rethink their strategies, IS organizations have an opportunity to support these efforts and gain high departmental visibility during considerations for implementing key changes. Insurers see their business as managing information. Information systems allow that information to be managed efficiently. There is concern with providing better service to the customer. PC software and client/server solutions provide the easy accessibility to data that is needed. Imaging systems make information available more easily and eliminate the problems of lost or misplaced records. Insurance company IS organizations have the opportunity to demonstrate that information systems solutions are needed to support their critical business objectives.

2. Rethink Systems Architecture

With PC and PC LANs becoming commonplace within the insurance as well as other industries, companies need to think about maximizing the value of their investments in PCs. At the same time, many of the legacy systems need to be updated and users are demanding more information that resides in these systems. As companies look at upgrading systems, they need to look at the overall architecture that makes sense within their company. For many, downsizing may be the answer, as smaller systems can handle processing more cost effectively and make data more accessible. For others, the mainframe will always be a key resource, yet a strategy needs to be developed to make the information on that mainframe available on a timely basis to those who need it. Consideration should be given to RDBMS and the application of re-engineering tools. Client/server architecture is growing in popularity and must be considered as a serious alternative for insurers.

3. Continue Cooperative Planning Between IS and Business Units

While IS organizations are the most knowledgeable regarding the complex systems that have been developed over the years, the end users will increasingly be the organizations that drive applications directions. In order to support the overall company goals, IS organizations will need to maintain ongoing working relationships with users in business units to both insure that technology solutions meet their needs and to make sure that technology choices made by business units fit the companies' overall technology strategy and architecture.

4. Analyze Business Processes

Quite often, automating an existing process only serves to take an already inappropriate approach and add additional levels of complexity. A process that worked quite well with one technology might be completely inappropriate when new resources are acquired. Particularly in the area of imaging, it is important to review the business approach prior to selecting a technology solution and, if needed, modify that business process to reap the maximum benefit from the new technology implementation.

C
Information Services Vendor Recommendations

Vendors selling to the insurance industry face both opportunities and challenges. They have the opportunity to demonstrate to insurers and agents that information services can support their business efforts. Convincing buyers of this capability, however, requires an understanding of

the concerns facing the insurance industry. Vendors need to demonstrate that they can provide a needed solution and that the customer's investment will result in tangible benefits in the near term. Specific recommendations to information services vendors include the following:

1. Establish Relationships with Business Unit Managers

INPUT research shows that the business unit managers are becoming increasingly involved in information services decision making. In fact, for some products and services, the business manager *is* the buyer, with significant sums being allocated for such purchases within individual departments. Vendors can no longer rely solely on their relationships with the IS organizations. They must branch out to make contact with specific business units. This can require a different marketing and sales approach than may have been used in the past. Today's buyers are looking for solutions to business problems and are interested in products and services with direct, immediate business applicability. In addition, budget restraints motivate these managers to seek direct evidence of payback on the investment.

2. Demonstrate Industry Knowledge

As vendors develop relationships with the business units, they need to demonstrate their understanding of specific insurance company applications. In fact, vendors can benefit from hiring business people who have worked within the insurance industry, people who can provide pragmatic direction and can offer an understanding of the issues. For instance, professional service organizations serving this industry need to have specialized units focused solely on the insurance industry or certain segments of the industry. Applications software vendors selling to this industry must develop products that address the unique aspects of specific insurance applications. Outsourcers need to demonstrate a total understanding of the industry so as to convince insurers to transfer management of their systems to an outside organization.

3. Focus Marketing Efforts

Vendors who have industry knowledge will be better equipped to focus their marketing efforts in a way that aligns their products and services with an insurer's business strategies. Products can be marketed in a manner that demonstrates how they better support customer service and can result in improved customer retention and increased sales. As the industry faces a record number of disasters, tools that provide improved analysis and modeling and facilitate enhanced customer services, especially in times of crisis, will be perceived as beneficial.

4. Quantify Return on Investment

This is an industry that has always required extensive cost justification analysis prior to any investment in information technology. Today, with the financial pressures facing the industry, insurance companies are looking at the paybackside of investments even more carefully. This whole acquisition process has become more challenging as today's investments cannot be as easily justified as in the past. When companies were acquiring technology to replace manual systems, benefits were more clearcut as specific cost categories were visibly eliminated by technology. As companies invest in the next generation of solutions, quantifying the return on investment becomes more challenging. Vendors need to work closely with their customers to analyze the potential impact of new investments on the organization. In many cases, today's investment will result in broad benefits such as better decision making, more timely response to customers, and targeted marketing efforts. Quantifying these benefits, on the other hand, may require some creativity on the part of the vendor. However, the closer the benefits align with the business goals of the company, the more obvious will be the benefits to the buyer.

5. Focus on Client/Server Solutions

The need to reduce costs and make data more available to employees and agents working directly with the customer is moving the insurance industry in the direction of client/server architecture. As many insurance companies feel the need to upgrade their legacy systems, they are looking seriously at the benefits that client/server technology can offer. Vendors need to develop client/server solutions and provide the industry with a migration path from the centralized mainframe world. In most cases, the mainframe will continue to play an important role as an IS resource. For some companies the role of the mainframe will be that of a data repository. For others, core applications will continue to reside on the mainframe, but solutions will be needed that allow users to access and modify information residing in those applications. Successful vendors will have the flexibility to support both existing systems and client/server options.

6. Support Standards

Large-scale investment by the insurance industry in newer technology solutions will benefit from the use of standards. For example, it is only within the last year that standards have been addressed for EDI—an important step in the move toward electronic claims processing. As standards are developed *and* embraced by vendors, insurance companies will find it easier to identify the benefits of making technology investments.

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Forecast Data Base and Reconciliation

A
Forecast

Exhibit A-1 presents the detailed 1992-1998 forecast for the insurance sector.

B
Reconciliation

The reconciliation of the figures for the 1992 and 1997 markets is shown in Exhibit A-2.

1992 Market - Actual expenditures for 1992 were 6% greater than projected in INPUT's forecast in INPUT's prior report. This is mainly due to an increase of 26% in expenditures on systems operations as compared with forecasted figures. As noted earlier, systems operations contracts involve such significant expenditures that even a few companies deciding to outsource can dramatically affect expenditures.

1997 Market - Overall information services expenditures for 1997 are expected to be 7% greater than projected in the prior report once again due to the expected growth in the systems operations area. Expenditures for systems operations are expected to be $2.6 billion, as compared with INPUT's projections of $1.9 billion for systems operations in the prior report. The applications software delivery mode, while still enjoying a healthy CAGR of 15%, has projected expenditures that are 8% less than forecast last year due mainly to cumulative budget restrainst and implementation delays while awaiting clarification of federal health care reforms. Expenditures for network services in 1997 are 9% more than projected in last year's report primarily due to the expected increased use of EDI.

EXHIBIT A-1

Insurance Sector
Market Size by Delivery Mode, 1992-1998

Delivery Modes	1992 ($M)	Growth 92-93 (%)	1993 ($M)	1994 ($M)	1995 ($M)	1996 ($M)	1997 ($M)	1998 ($M)	CAGR 93-98 (%)
Sector Total	4,828	9	5,275	5,956	6,673	7,452	8,375	9,414	12
Processing Services	381	3	393	434	459	482	506	528	6
- Transaction Processing	381	3	393	434	459	482	506	528	6
Turnkey Systems	316	5	331	344	358	374	396	415	5
- Equipment	142	3	146	148	147	150	158	161	2
- Software Products	120	4	125	134	141	150	159	169	6
- Applications Software	104	5	109	118	124	132	140	148	6
- Systems Software	16	0	16	16	17	18	19	20	5
- Professional Services	54	11	60	62	70	74	79	85	7
Applications Software	891	11	993	1,118	1,270	1,448	1,681	1,966	15
- Mainframe	329	6	350	368	394	421	455	495	7
- Minicomputer	125	2	128	132	135	138	142	148	3
- Workstation/PC	437	18	515	618	741	889	1,084	1,323	21
Systems Operations	1,225	16	1,420	1,660	1,950	2,313	2,642	3,083	17
- Platform Operations	500	14	570	650	748	855	975	1,115	14
- Applications Operations	455	15	525	615	712	825	902	1,075	15
- Desktop Services	150	17	175	208	253	328	375	423	19
- Network Management	120	25	150	187	237	305	390	470	26
Systems Integration	219	9	239	269	309	361	474	527	17
- Equipment	35	9	38	45	54	63	74	85	17
- Software Products	18	17	21	25	29	35	41	47	17
- Applications Software	13	15	15	17	19	22	25	29	14
- Systems Software	5	20	6	8	10	13	16	18	25
- Professional Services	162	8	175	193	219	255	350	385	17
- Other	4	25	5	6	7	8	9	10	15
Professional Services	1,560	5	1,643	1,833	1,980	2,093	2,245	2,417	8
- IS Consulting	381	10	418	480	536	582	642	712	11
- Education & Training	215	13	244	275	301	338	364	404	11
- Software Development	964	2	981	1,078	1,143	1,173	1,239	1,301	6
Network Services	236	8	256	298	347	381	431	478	13
- Electronic Info. Svcs.	178	8	192	228	260	282	306	328	11
- Network Applications	58	10	64	70	87	99	125	150	19

EXHIBIT A-2

Insurance Sector
1993 MAP Data Base Reconciliation

Delivery Modes	1992 Market				1997 Market				92-97 CAGR per data 92 Rpt (%)	92-97 CAGR per data 93 Rpt (%)
	1992 Report (Fcst) ($M)	1993 Report (Actual) ($M)	Variance from 1992 Report ($M)	Variance from 1992 Report (%)	1992 Report (Fcst) ($M)	1993 Report (Fcst) ($M)	Variance from 1992 Report ($M)	Variance from 1992 Report (%)		
Total	4,575	4,828	253	6	7,822	8,375	553	7	11	12
Processing Services	381	381	0	0	506	506	0	0	6	6
Turnkey Systems	316	316	0	0	396	396	0	0	5	5
Applications Software	891	891	0	0	1,819	1,681	-138	-8	15	15
Systems Operations	970	1,225	255	26	1,935	2,642	707	37	15	17
Systems Integration	221	219	-2	0	524	474	-50	-10	19	17
Professional Services	1,560	1,560	0	0	2,245	2,245	0	0	8	8
Network Services	236	236	0	0	397	431	34	9	11	11

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- **Acquisition targets**

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- **Market opportunities**
- **Systems plans**
- **Peer position**

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