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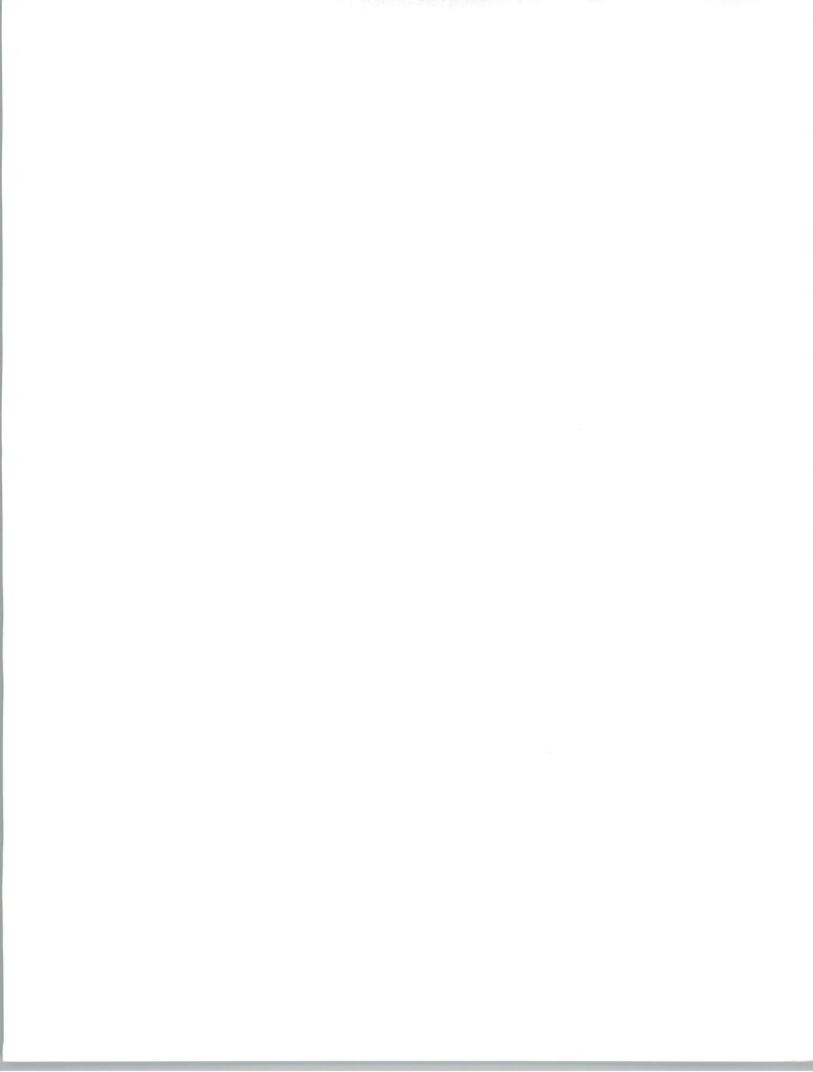
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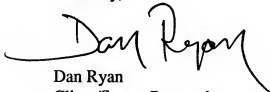
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This is provided through your participation in the *Client/Server Markets and Applications Program*.

Data for this report was provided by INPUT's continuing interview program which identifies targets of opportunity for clients as well as trends in the market.

Please call me if you have any comments or questions.

Sincerely,

A handwritten signature in black ink that reads "Dan Ryan". The signature is fluid and cursive, with a long horizontal stroke extending to the left.

Dan Ryan
Client/Server Research

Enc.



VERTICAL MARKET ANALYSIS

Client/Server
Applications Trends

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**Client/Server Markets and
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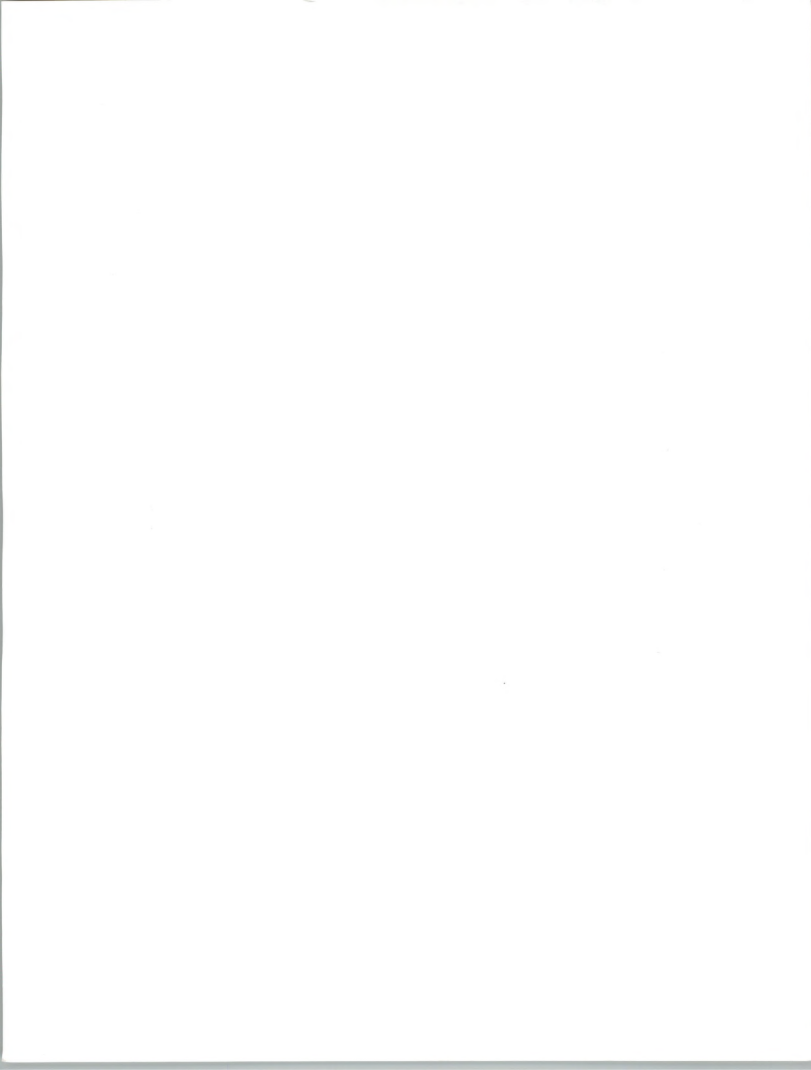
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CLIENT/SERVER
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INSURANCE

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**Client/Server Markets and Applications
Program (DSP)**

Client/Server Applications Trends—Insurance

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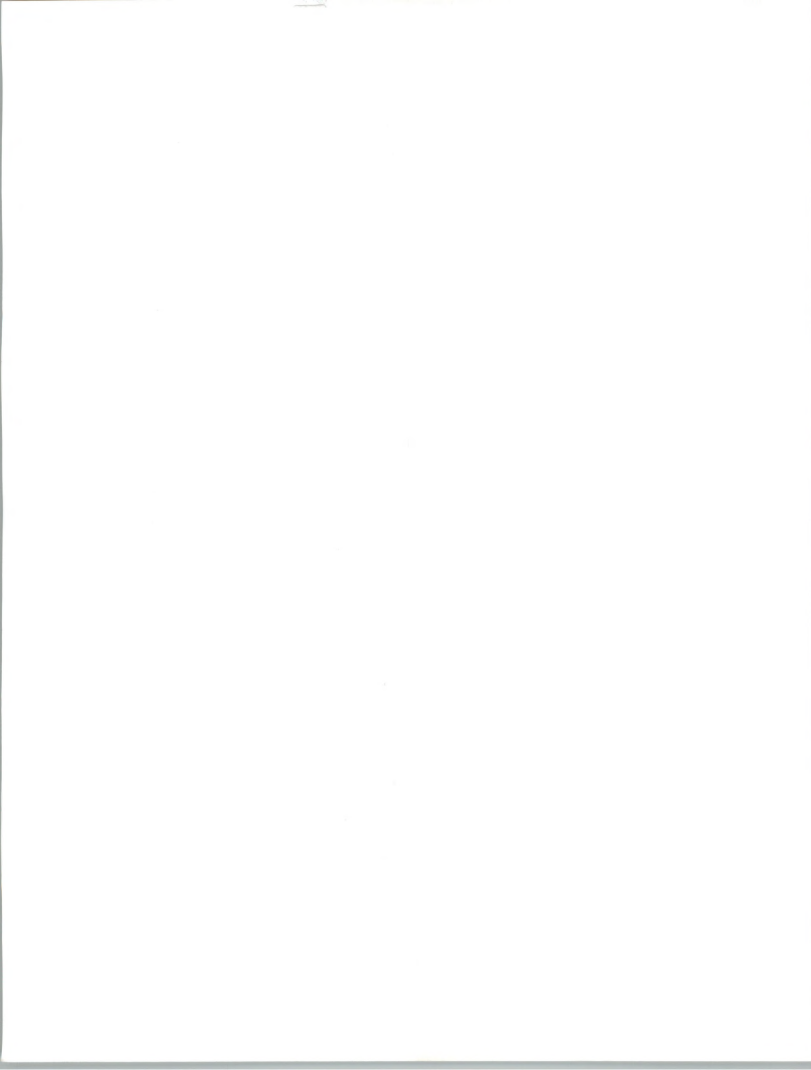


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Introduction

This is the fourth in a series of reports analyzing trends in client/server (C/S) applications by vertical industry. These reports are produced as part of INPUT's *Client/Server Markets and Applications* subscription service. Each report focuses on a single industry. Additional reports compare industries in their approach to C/S.

A

Objectives

This report addresses the following issues with regard to the insurance industry sector:

- To what degree is the industry as a whole migrating to client/server architectures?
- Which applications are likely to be targeted for implementation over the next two years, and which are headed for a downsized client/server environment?
- Who is managing various aspects of the implementation or conversion of these applications? The central information systems function (IS), end-user management, its local IS function, or third parties?
- To what degree are industry participants looking to outside vendors for products and services?



B**Scope**

The scope of this analysis is limited to the insurance industry sector within the United States. Specifically, INPUT defines this sector as including those industries containing the two-digit SIC (Standard Industrial Classification) codes shown in Exhibit I-1.

EXHIBIT I-1**Insurance Industry Sector Definitions**

Code	Description
63xx	Insurance carriers
64xx	Insurance agents, brokers and services

This particular study focused on carriers, with 95% of the respondents coming from firms in the 63XX category, broken down as follows:

- 6311 - Life insurance
- 6321 - Accident and health insurance
- 6324 - Hospital and medical service plans
- 6331 - Fire, marine and casualty insurance
- 6351 - Surety insurance
- 6399 - Insurance carriers not otherwise classified

C**Methodology**

Data for this analysis were taken from INPUT's applications data base. This data base is built from a continuous telephone interview program to gather information about companies' applications plans. The field interviewing process was initiated in January 1993. Over 1,600 interviews have been completed to date.

In some instances more than one interview was conducted per institution. This was particularly true for extremely large firms such as Prudential and Metropolitan Life, where interviews were conducted with multiple operating units. The number of companies in the insurance sample was 80. The total number of interviews was 115.



These 115 interviews were the primary source of data for this report. They provided information on 169 different applications that will be implemented in the next two years.

Respondents identified the applications or projects they would be implementing over the next two years using their own terminology, rather than being required to categorize applications by some predetermined set of definitions. Once the survey was completed, INPUT analyzed the 169 project descriptions and coded them into 39 application types. The 39 types were then further grouped into 8 application categories for purposes of this analysis. Exhibit I-2 describes the applications by category.

Detailed descriptions of each application type are contained in Appendix A.

EXHIBIT I-2

Definition of Insurance Application Categories

Application Category	Application Type
Financial	Financial Reporting General Ledger Accounts Payable/Receivable Billing Fixed Assets Budgeting Cost Accounting
General Infrastructure	Imaging Systems Data Base Conversion - Relational/Dist. Platform Migration - C/S Data Conversion Data Base Conversion - General Platform Migration - General OS - Upgrades/Conversions
Human Resources	Payroll Benefits Administration Human Resource Info. Systems
Insurance Operations	Claims Loss History & Payment Policy Processing Customer Records Reinsurance Administration Agency Automation Actuarial Support Agency Interface Commission



EXHIBIT I-2 (CONTINUED)

**Definition of Insurance
Application Categories**

Application Category	Application Type
Other Cross-Industry	Customer Service Purchasing EDI Systems
Office Systems	Word Processing
Planning and Analysis	Executive Information Systems Spreadsheets/Data Bases Financial Modeling
Sales and Marketing	Marketing Management & Support Order Entry Tracking Sales Analysis Sales Forecasting Telemarketing

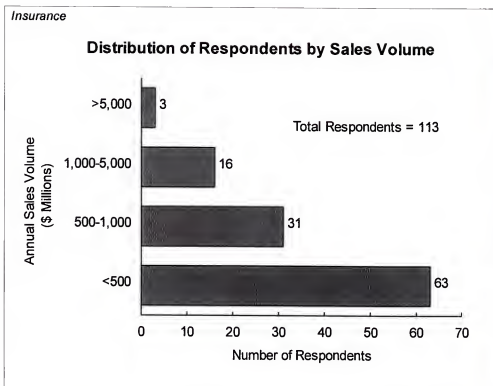
Additional information was drawn from secondary research sources and INPUT's existing library of current information on insurance to round out the analysis.



D**Characteristics of the Sample****1. Sample Demographics**

In general, the sample represents a cross-section of insurance institutions, including property and casualty, life and health insurance firms. The breakdown of respondents on the basis of annual company or divisional sales volume is given in Exhibit I-3.

EXHIBIT I-3



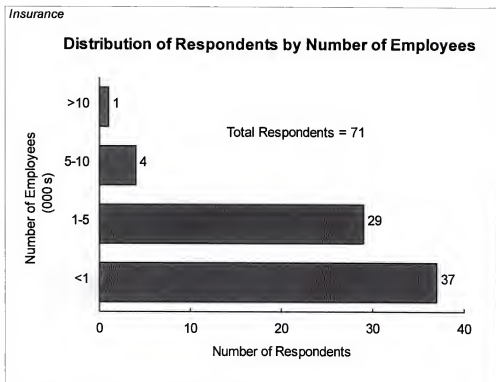
The average annual sales volume for the sample was approximately \$750 million.

Throughout this report the companies were grouped into three size categories for purposes of analysis. The following definitions apply:

- Large - Greater than \$1 billion
- Medium - Between \$500 million and \$1 billion
- Small - Under \$500 million



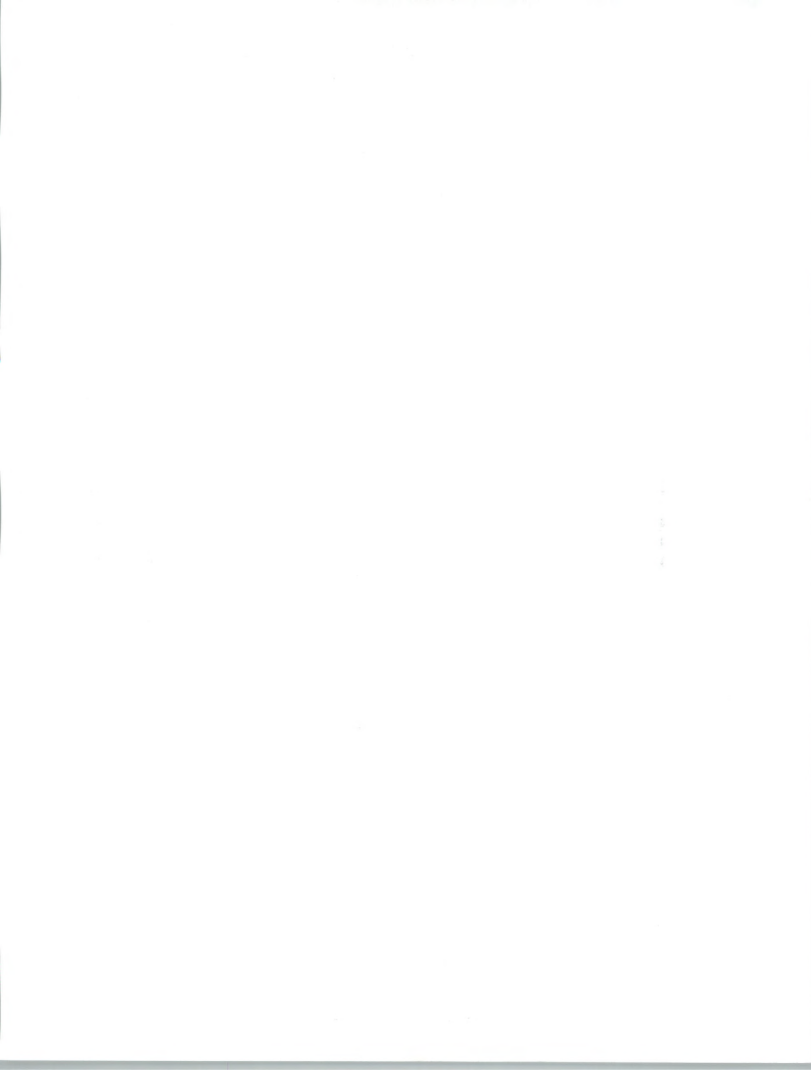
The average number of employees was approximately 1,500, and the population was distributed as shown in Exhibit I-4.

EXHIBIT I-4

2. Characteristics of Survey Respondents

Although the surveys are targeted at user managers with direct responsibility for line or staff operations, respondents sometimes referred interviewers to the information systems (IS) function for responses to all or parts of the survey. Consequently, respondents included members of the corporate IS function or divisional IS management as well as non-IS line or staff management. Exhibit I-5 gives the distribution of respondents by job class. The following definitions apply:

- **Line Manager** - A manager/executive responsible for line operations at a corporate or divisional level; e.g., vice president of operations, vice president of sales, director of product distribution, etc.
- **Staff Manager** - A manager/executive in charge of staff operations at a corporate or divisional level; e.g., vice president of human resources, chief financial officer, or director of purchasing.



- **IS Manager** - A manager/executive whose primary responsibility is the management of information systems activities at a corporate or divisional level.

EXHIBIT I-5

Job Classification of Respondents Insurance

Job Classification	Proportion of Respondents (%)
Line Manager	10
Staff Manager	42
IS Manager	48

This distribution is comparable to the mix encountered in both the discrete and process manufacturing surveys. However, the total proportion of user respondents (52%) is considerably less than the 78% in the banking and finance industry sector study.

In some instances line managers were unable to deal with questions regarding platforms, but were very clear regarding their applications requirements and plans. IS executives filled in the gap with more information on platforms, overall spending, and discussion of the general direction of the IS function.

E**Organization**

The remainder of the report is organized into three chapters:

- Chapter II, *Executive Overview*, provides a summary of the findings of this study.



- Chapter III, *Insurance Applications Trends*, discusses the key applications that will undergo conversion or re-implementation by insurance firms over the next three years. It addresses such issues as:
 - Target platforms and platform combinations
 - Near-term investment levels in applications development
 - Project management and control strategy
 - Analysis of the applications by application category
- Chapter IV, *Client/Server Directions in Insurance*, analyzes the data at a more detailed level with particular emphasis on the role that client/server will play in insurance applications over the next two years.



II

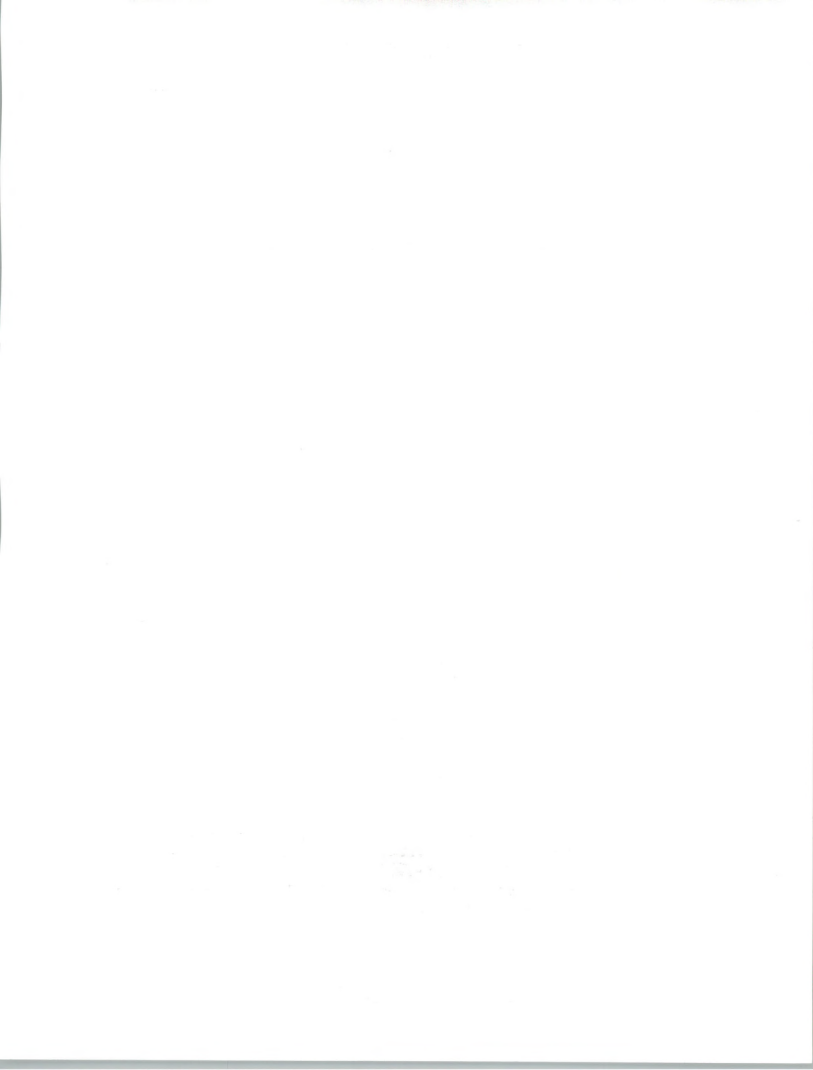
Executive Overview

Prospects for the future of the U.S. insurance industry are guardedly optimistic. The weak economy and highly unusual underwriting losses experienced over the past several years have combined to place many insurance companies in jeopardy of failure, and others are rethinking their overall business strategy. But it appears that the industry's response to negative conditions coupled with a gradual economic recovery will bring a turnaround over the next several years.

Each segment has its own problems. But as a general indication of the industry's recent health, it's sufficient to say that last year the number of life and health insurers that fell into major financial difficulty increased by 38%. Over capacity in some sectors, coupled with competition from other industries such as banking and finance, have generated significant pressure to reduce costs and threaten the viability of certain aspects of the business.

A brief review of the key subsectors of the insurance industry provides a meaningful setting from which to assess likely future systems directions.

- *Property and Casualty* - 1992 was the worst year in history for natural disasters in the U.S., and 1993 is not turning out to be much better. Payments from property and casualty companies topped \$23 billion dollars in 1992 alone. A lot of insurers went bankrupt and others elected to retreat from either classes of risk underwriting, high risk geographic areas, or both. The impacts of the unusually large numbers of natural disasters and growing fraud have caused insurers in this sector to totally rethink their strategies, and in many instances focus on niche markets.



- *Life Insurance* - Life insurance companies rely heavily on long-term investments to fund future liabilities. During the 1980s, life insurance companies made significant changes in their investment strategy by moving large portions of their funds into real estate and high yield securities. Unfortunately, the major downturn in the economy has had a dramatic negative effect on these types of investments leaving many insurers holding delinquent real estate loans and devalued junk bonds. Although the economy shows signs of some turnaround, it will be some time before the life insurance sector recovers from these investment decisions.

In addition to problems on the investment side, the industry is facing increasing competition from banks and other financial institutions that offer alternative investment products to compete with traditional whole-life policies.

One bright spot has been annuities which are expected to grow at 8%-12% over the next several years. Annuities are rapidly becoming a popular investment with many individuals who see them as a retirement hedge against decreasing job security and questionable corporate pension plans.

- *Health Insurance* - During the 1970s and 1980s, the profits of health insurance companies rose along with health care costs. However, by the late 1980s the disproportionate rise in health care costs compared to the overall growth of the economy had stimulated a national crisis in the health care industry, leading to the rapid rise of health maintenance organizations (HMOs) and primary provider organizations (PPOs). The rapid growth in the number and size of these organizations has eroded profits in the traditional health insurance business.

At this point, some national approach to health care seems inevitable. As a consequence, health insurers who traditionally have opposed national health care plans have shifted sides, and are lobbying for the role they might play in a national program.

Insurers are responding to the current challenges through restructuring, focusing on their core businesses, and placing increasing emphasis on service as a differentiating factor. Consolidations through mergers and acquisitions are becoming commonplace as the industry attempts to deal with the issue of over capacity.



These strategies have significant ramifications in terms of the deployment of systems technology in all segments of the industry. Although IS has not been exempt from the cutbacks brought on by the poor financial performance of the industry, it is seen as a key weapon in implementing new strategies.

- The re-engineering of business processes to speed up transaction turnaround and reduce costs is causing change to the industry's core systems.
- The decentralization of decision-making processes requires that more information be made available to agents and other industry operatives.
- The emphasis on service requires that service representatives have ready access to customer information and the ability to manipulate it.
- Targeting markets and creating differentiated offerings is placing additional emphasis on the availability of company internal as well as external information sources for purposes of analysis.

The overall impact is causing the controlled decentralization of information and stimulating the use of client/server technology.

To gain a more in-depth understanding of how the systems environment is changing in the industry, INPUT analyzed data from 80 financial institutions on 169 applications that are scheduled for implementation, modification or conversion over the next two to three years. Respondents to the survey consisted of user managers, divisional or user IS executives, and managers and executives from corporate IS functions.



A

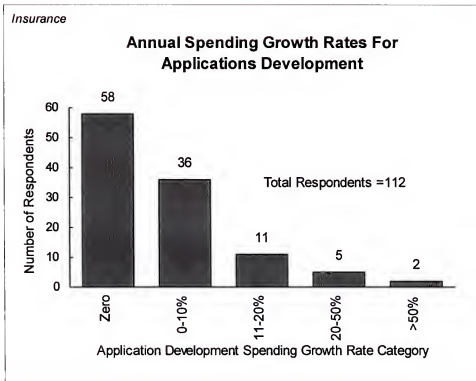
Expenditure Plans and Key Issues**1. Expenditure Plans**

Spending rates for both applications improvements and IS overall appear to be improving, compared to the 4% to 5% rates prevalent in 1991. On average, the respondents to this survey planned to increase their spending over the next two years as follows:

- Total IS spending will grow at an annual rate of 7% per year.
- Applications development spending will grow at a rate of 6.6% per year.

Exhibit II-1 shows the distribution of annual spending growth rates for applications improvements by growth rate category.

EXHIBIT II-1



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3. The third...

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5. The fifth...

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Units that reported growth rates for applications expenditures in excess of 10% contributed 25 applications out of the 169. Based on a more detailed examination of this group of applications, INPUT concludes:

- The highest growth in spending will occur in the smaller companies. Fifteen of the 25 applications in the above 10% growth rate group come from firms reporting under \$500 million in sales.
- The areas targeted for maximum growth in spending are dominated by financial and core business applications, with 20 of the 25 applications coming from these two categories. Key applications appear to be policy management, on-line health care systems, claims processing, and on-line management information systems.

High growth rates are not concentrated in any given part of the industry. Life, property and casualty, and health carriers are all reporting growth rates in the 6% to 7% range.

2. Key Issues

The survey identified responsiveness as the leading issue facing the industry's systems environment. The ability to react quickly to rapidly changing business requirements is a major issue. Re-engineering internal business processes using new technology will be key to dealing with this issue and meeting two more of the industry's key objectives:

- Cost reduction
- Improved customer service

Respondents cited systems integration as the second most critical issue. In order to decentralize and streamline business processes, insurers expressed a strong need to place access to more types of information in the hands of employees to facilitate decentralized decision making.

The ability to address these issues in the short term is inhibited by two roadblocks that cannot be easily overcome.

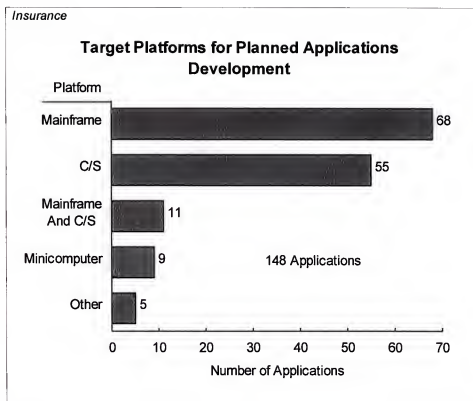
- A portfolio of legacy systems designed to support individual lines of business
- A shortage of capital to invest in major systems efforts



B**Applications Trends in Insurance****1. The Movement to Client/Server**

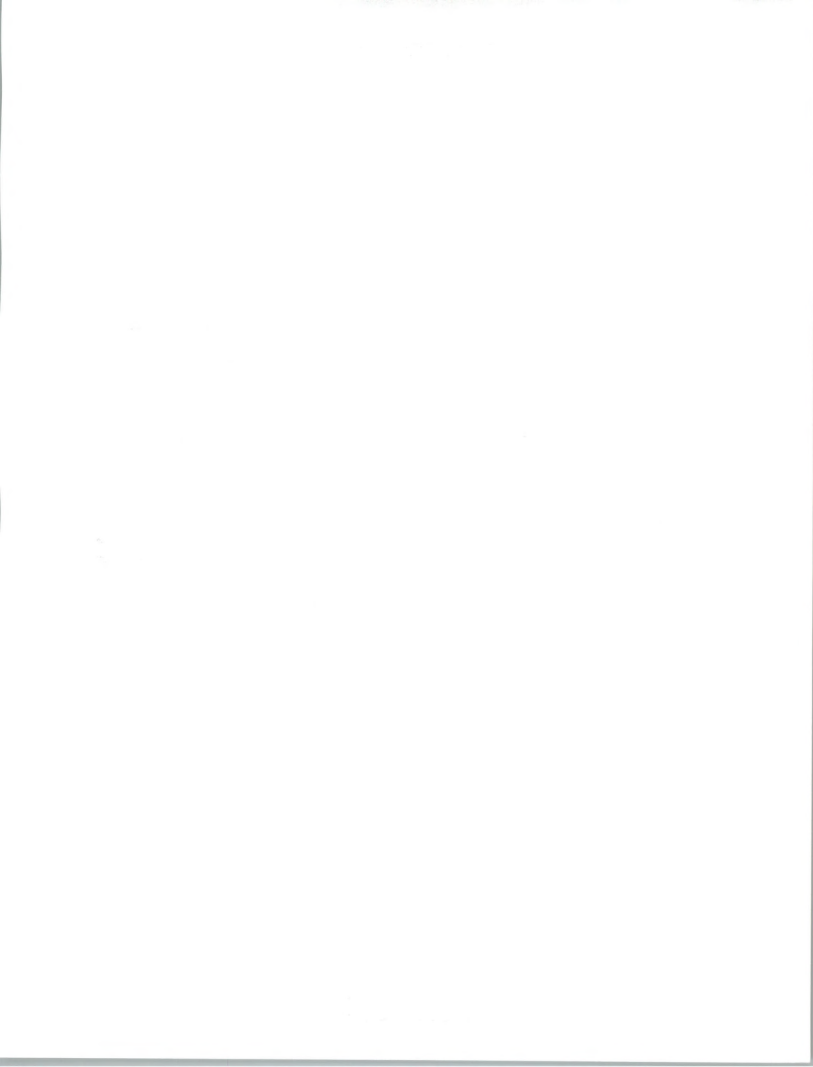
Exhibit II-2 shows the target platforms for the 148 applications in the sample for which platform information was available.

EXHIBIT II-2



Overall, 50% of the identified applications will use workstation/PC-C/S architectures as some component of the target platform. Furthermore, unlike the banking and finance sector, many of the applications for which C/S is the primary architecture will be core business applications; 40% for insurance versus 23% for banking and finance. The movement to C/S is likely to accelerate as more money becomes available to invest in re-engineered systems.

- C/S architecture provides good facilities for dealing with the moderate volume of complex transactions that are typical of the industry's core applications.



- The capabilities that can be designed into new systems on the client side offer significant opportunities to improve customer service, a key strategy in all sectors of the industry for obtaining differentiation.

2. Project Management and Implementation Strategy

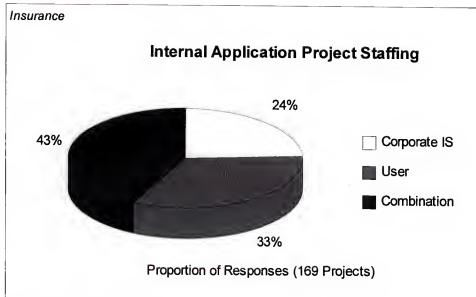
The direction is clearly toward the user in terms of project management of applications development.

- Thirty-seven percent (37%) of the respondents' projects will be managed by user line or staff executives. This is approximately double the rate in the manufacturing industry sectors, and just under the 40% identified in an analysis of the banking and finance industry. Another 18% will be managed by IS organizations reporting directly to user management.
- Corporate IS will manage 37% of the projects.
- The remaining 16 applications will use a team approach to implementation or use systems integrators.

In addition to heavy involvement in project management, users will carry a significant portion of the implementation responsibility, as shown in Exhibit II-3.



EXHIBIT II-3



The proportion of systems that will be totally implemented without resources from corporate IS (33%) is significantly higher than the 20% for banking and finance. However, this is not an indication that a wholesale distribution of systems authority is an industry trend.

As is the case in the other financial sectors, centralized IS has played a dominant organizational role in the industry since the 1960s. Through corporate IS, the industry has made heavy investments in examining and exploiting new technologies, developing project management and implementation methodologies, and maintaining an expert technical staff. Nevertheless, insurance executives recognize the importance of information systems in achieving operational success. The heavy integration of these systems into daily operations, coupled with redesign of fundamental business processes, points to significant organizational impacts from new systems implementations. Thus, the heavy emphasis on direct user participation in all aspects of the process.

Examination of the survey results shows that approximately 70% of the new applications that involve insurance operations will be implemented by line organizations, either directly or through unit or divisional IS organizations. All but two of the infrastructure and in-house systems integration efforts will be implemented by IS. This division of implementation responsibility is likely to continue and accelerate over the next few years.



C

Key Client/Server Applications in Insurance

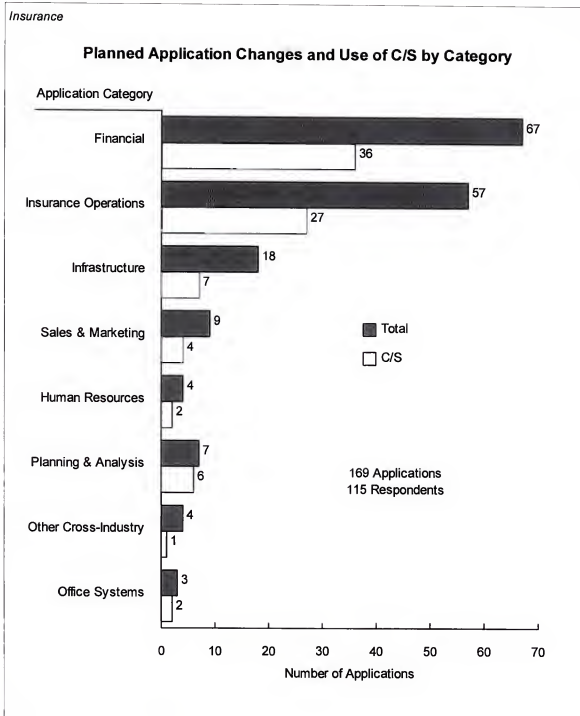
It appears that C/S architecture will achieve high penetration rates in the insurance industry over the next few years.

1. Client/Server Penetration by Application Category

Though not as pervasive in insurance as in the manufacturing sectors, C/S architecture is targeted for 50% of the 169 applications, as shown in Exhibit II-4.



EXHIBIT II-4





The top two categories, financial and insurance operations, contain most of the industry's key operational systems. Applications in these two categories will use C/S approaches in just over 50% of the implementations. The fact that these two categories make up 73% of the sample indicates a strong industry commitment to C/S technology.

There is little variation in the use of C/S by industry subsector. Life, property and casualty, and health insurers are all forecasting a 50% penetration rate for C/S technology.

However, it appears that large companies across all industry subsectors are taking a more conservative approach. Only 26% of applications reported by firms in the "large" category are targeted for C/S environments. This lower rate is partly attributable to a difference in overall systems strategy. Many of the large companies are leaving core processing systems in place and bridging data into smaller C/S environments for applications such as customer support, claims tracking, and analysis systems. Medium-sized and small companies tend to be dealing with more fundamental changes in their business strategies through a total re-engineering of core applications.

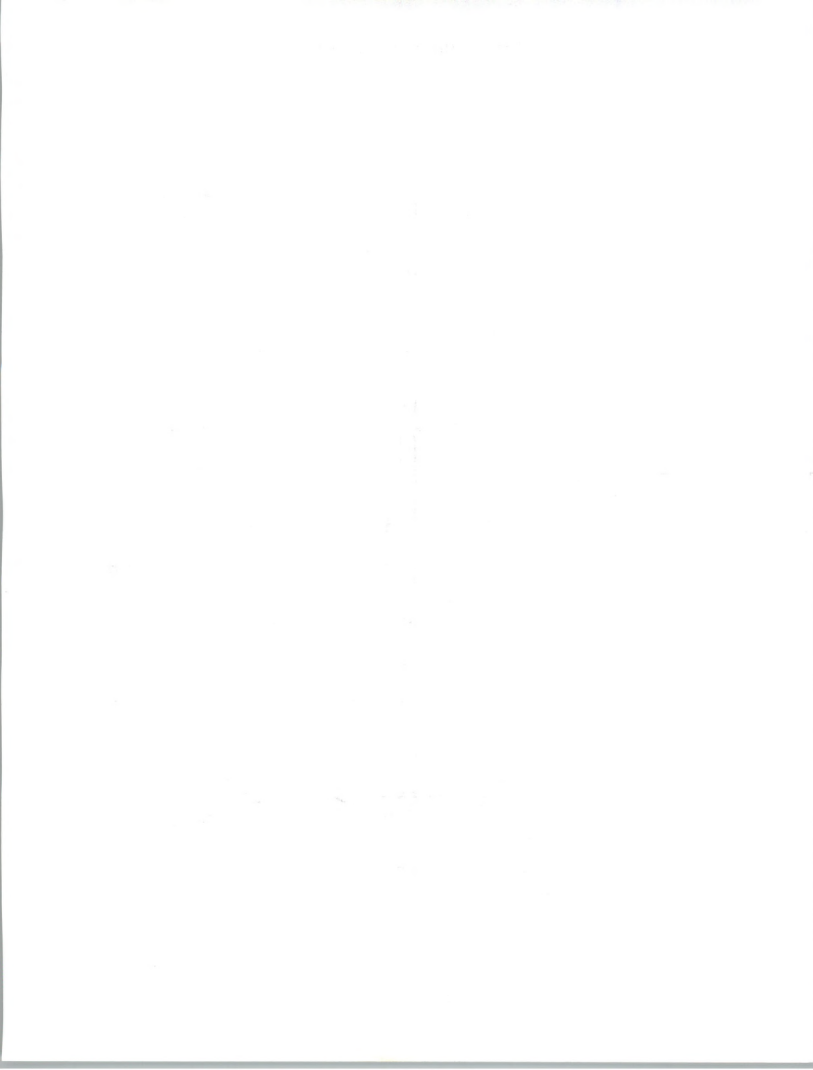
Regardless of these small differences, it seems apparent that the insurance industry will be one of the leaders in the use of C/S technology, and is likely to move more aggressively than indicated in this analysis once current business performance improves.

2. Leading Targets for C/S Implementation

Excluding office systems and planning and analysis applications, traditional strongholds for the use of C/S, the application categories with the highest C/S implementation rates are financial systems (54%), human resources (50%), and insurance operations (50%).

Specific applications that rank high on the list include:

- Claims loss history and payments
- Financial reporting
- Policy processing
- Agency automation
- Customer records



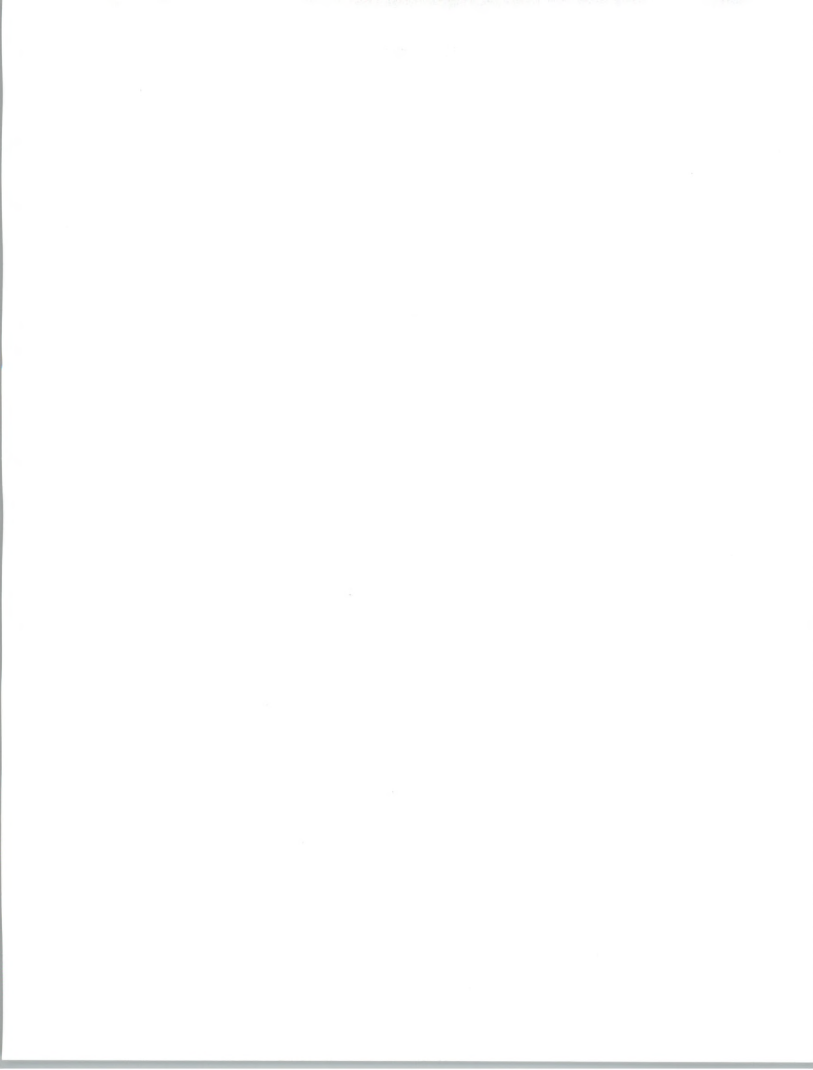
D**Conclusions**

- The insurance industry is a prime candidate for continued penetration of C/S technology. Not only is the technology well-matched to the industry's core applications requirements, but industry pressure to reduce costs and re-engineer existing systems will continue to open the door for new and innovative uses.
- The rate of adoption and types of applications that will be re-engineered to use C/S will vary somewhat depending on the size of the company. Small companies are likely to be considering a total re-engineering approach. This means that C/S will be adopted for core applications more quickly than for large companies.

Large companies will take a more evolutionary approach; utilizing existing systems to "feed" data to updated C/S-based customer service, claims processing and analysis systems.

- All subsectors of the industry appear to be looking to C/S technology as a key component of their systems environments.
- Spending levels on applications development and maintenance appear to be solid, particularly in light of the industry's financial performance over the past several years. Changes in regulatory requirements will stimulate additional spending beyond that identified in this study. This is particularly true in the health care and property and casualty segments of the business.
- Applications development responsibility is moving directly to users; maintenance of standards, major infrastructure projects, and IS leadership continues to be provided by corporate IS.

Client/server technology already has a strong foothold in the industry. The primary limitation to accelerated adoption of the architecture for new and re-engineered applications is the poor financial performance of many companies.



A combination of an economic upswing with a more favorable underwriting/risk ratio than the industry has experienced in recent years is likely to push investment in systems to even higher levels over the next several years. When this happens, C/S will take an even stronger role as a key technology.



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Insurance Applications Trends

This chapter presents a detailed analysis of the applications data base. The chapter is organized as follows:

- Section A analyzes the general trends identified in the survey.
- Section B presents the breakdown of applications by class, target platform and the types of resources that will be used to manage and accomplish the implementation.

A

General Trends in Insurance IS

The survey examined a number of key trends with regard to the evolution of old and the development of new applications over the next two years. It included examinations of:

- Anticipated changes in hardware and software platforms
- Expected levels of total IS and applications spending
- Anticipated changes in the IS organization
- Major IS issues



1. Anticipated Changes in the Systems Environment

Respondents provided information on specific changes in their systems environment over the next two years. Responses fell into three categories.

- **Upgrades** - Seventy-nine percent (79%) of the respondents anticipate that migrating systems environments or moving toward C/S will be the predominant strategy for application migration over the next several years. Upgrading existing applications was reported as the major strategy by only 21% of the respondents.

When the sample is analyzed on the basis of institution size, it becomes evident that the large companies (above \$1 billion in sales) are planning fewer major changes. In fact, 31% anticipate that upgrading existing systems will be the major migration route for their firms over the next two to three years. Only 20% of the institutions under \$1 billion considered the upgrading of existing systems a key strategy.

- **Increased/Decreased Standardization** - Movement toward increasing standardization in platforms and operating environments was predicted by 13% of the respondents, and only three respondents anticipated any decrease in standards.
- **Migration to C/S** - A significant proportion of insurance companies are adopting C/S migration strategies. Of the total survey population, 39% indicated that migration to C/S would be a primary strategy for upgrading the existing systems environment. This is approximately one-and-one-half times the proportion of firms in the banking and finance sector. Furthermore, unlike the banking and finance sector, large companies are heavily involved in adopting C/S, with 56% of the companies surveyed with sales volumes above \$1 billion indicating a commitment to C/S as a general architectural approach.

2. Expectation Levels for IS Spending and Application Improvements

Respondents anticipate growth in spending for information services to be approximately 7% per year for the next two years. Growth in spending for applications development is anticipated to be just under the 7% rate for the same period.

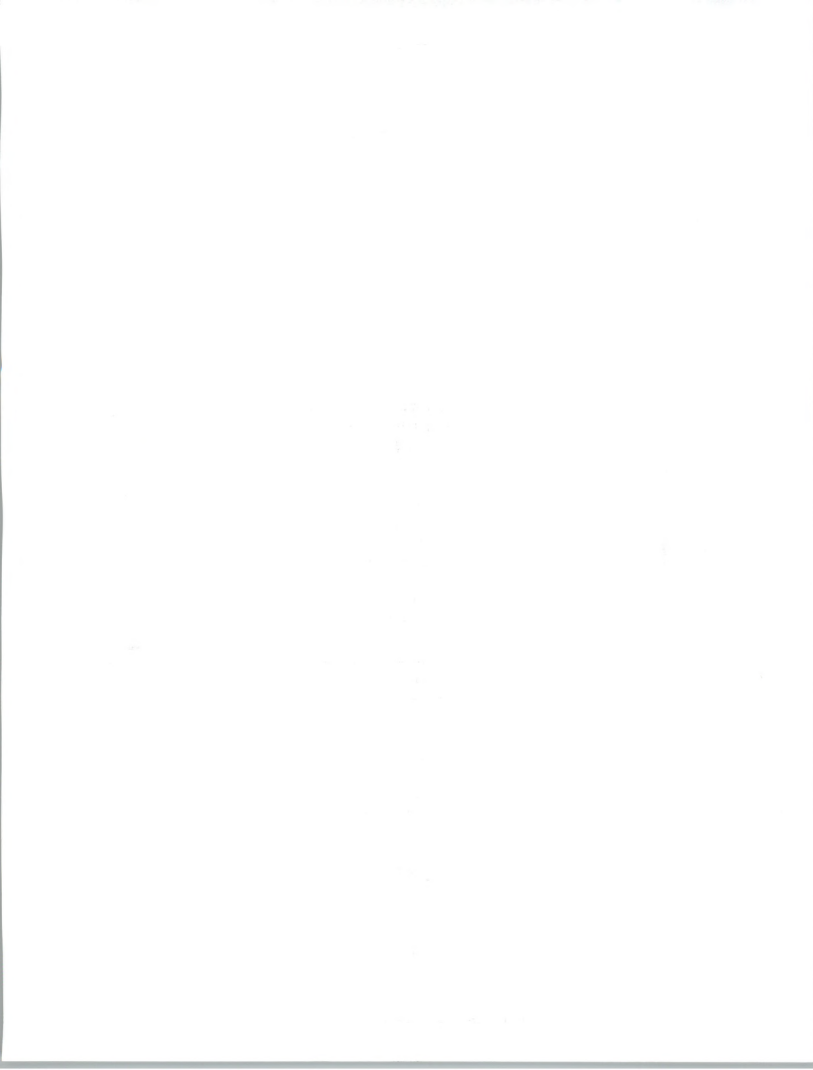
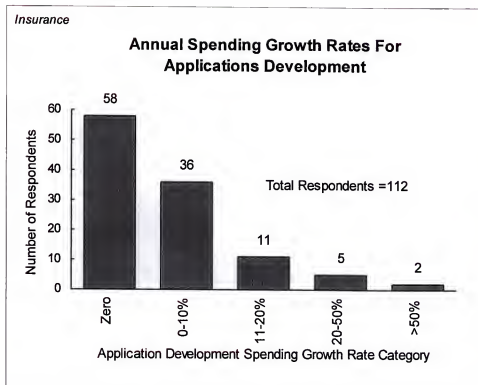


Exhibit III-1 shows the distribution of annual spending growth rates for applications development by growth rate category.

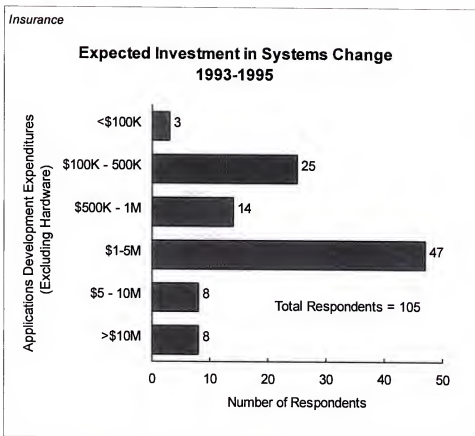
EXHIBIT III-1



These numbers are comparable to those in the manufacturing sector, but are considerably less than the 10% to 12% rates forecasted for the banking and finance sector. Nevertheless, the growth rates are substantial, given the significant problems the insurance industry has had with cash generation over the past several years.



Exhibit III-2 shows the distribution of expenditure levels for applications change in the next two years.

EXHIBIT III-2

Considering that respondents were speaking about systems investments for their individual departments or operating units (not about total company investment in IS), it is significant that over 60% of the respondents expect to be spending more than \$1 million in improvements over the next two years.

Further analysis of the group of departments and divisions that anticipate expenditures of \$1 million and above over the next two years indicates:



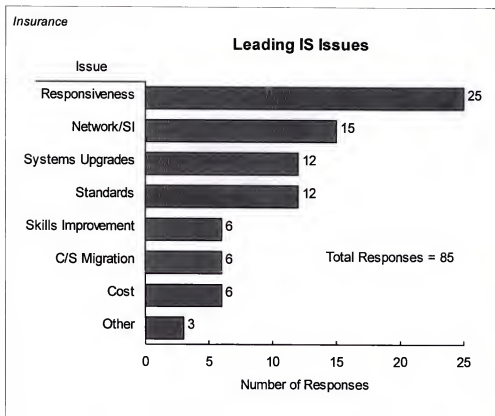
- There is little correlation between the size of the company and the size of the expenditures.
- There is little variation between life, property and casualty and health insurance companies.

Analysis of the data did not identify leading indicators of high spending levels.

3. Major Information Systems Issues

As shown in Exhibit III-3, the most frequently mentioned IS issue was the need to make IS more responsive.

EXHIBIT III-3





A brief explanation of each category follows.

- **Responsiveness** - The ability of the systems environment to respond to changing application needs and user management information requirements
- **Network/Systems Integration** - Network integration itself or the integration of applications across a distributed network
- **Systems Upgrades** - The need to upgrade existing systems to handle new requirements or increased capacity
- **Standardization** - Improved connectivity, the portability of applications across multiple platforms and the adoption of common standards for workstation/PC and network interfaces
- **Skills Improvement** - "Re-tooling" in-house staff to deal with changing skill requirements brought on by new technology
- **C/S Migration** - Planning for, implementing or downsizing to C/S technology
- **Cost** - Downsizing or distribution of existing staff or general budget reductions involving systems expenditures
- **Other** - Miscellaneous other responses

In general, responses focused more on the applications and business aspects of systems rather than technology.

- The responsiveness category was clearly the leader in terms of user issues. Examination of the individual responses reflected concerns over the need to enhance or re-engineer systems in a manner that would improve flexibility and reduce operating costs.
- The dominant theme for the 30% of the issues cited in the network/systems integration and upgrade category was the need to integrate applications for purposes of providing better overall management or customer-related information.
- The client/server and standards issues make up the bulk of the remainder.



This focus on responsiveness rather than technology probably reflects the following:

- The sample contained just over 50% user executives whose perspectives are generally on applications and current needs rather than technology. These executives cited responsiveness as the leading issue in 60% of their responses, compared to IS executives, whose response rate was 15% on the same issue.
- Managers in the insurance sector have deployed technology as an integrated part of their business strategy for many years; as a result, they have a more balanced perspective as to its potential and limitations than do executives in some other sectors.

B

Insurance Applications Trends

For each application identified as critical in the next two years, respondents were asked to provide information on:

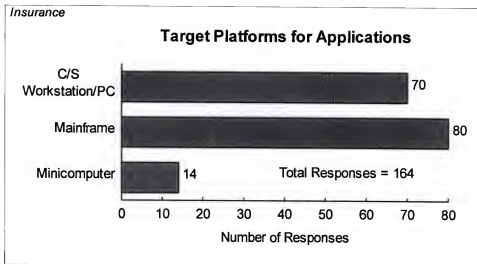
- Target platforms
- Project leadership strategy
- Project staffing
- The use of software packages
- EDI utilization
- Outsourcing
- C/S and/or downsizing strategy

1. Target Platforms

Approximately 47% of the applications developed over the next two to three years will employ a workstation/PC-based platform component, as shown in Exhibit III-4.



EXHIBIT III-4



A cross-tabulation of this data by company size indicates that approximately 26% of the applications will utilize C/S-workstation/PC architectures in the large firms, compared to 44% for companies in the small and medium-sized categories. This difference reflects not only the more conservative C/S migration path being followed by large insurers, but also their reluctance to totally re-engineer existing core systems.

Analyzing the same data as a function of class of insurer show that life insurance companies will be making heavier use of workstation/PC technology, than all other groups. Forty-five percent (45%) are targeted to use the technology, compared to an approximate 35% for the remaining categories of insurers.

This difference reflects the capability of the technology to deal with at least two structural changes in the life insurance area.

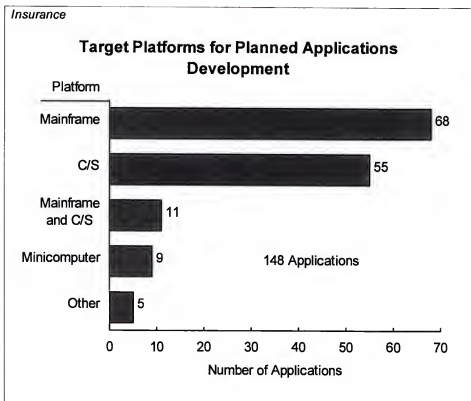
- The need to tailor individual policies to specific customer requirements
- Decentralization of policy writing and approval authority to reduce internal bureaucracy and improve customer response

This is a different requirement than for other sectors of the financial services industry, where products are more standardized.



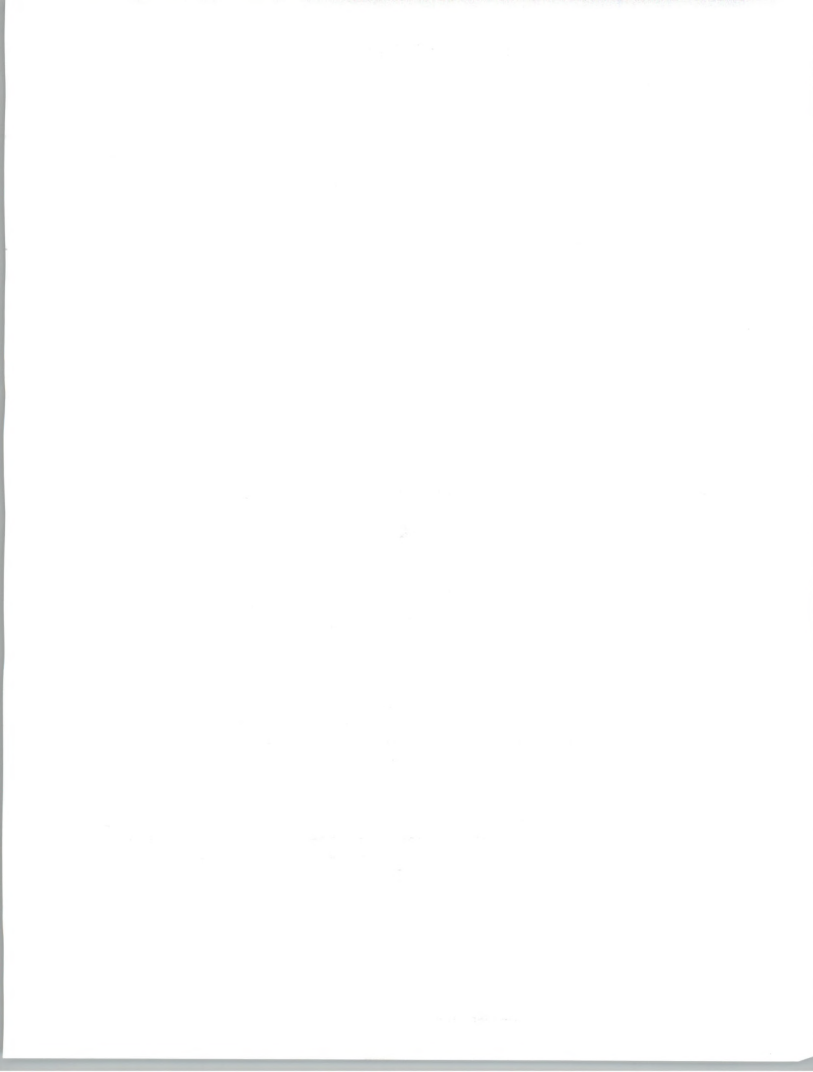
The data shown in Exhibit III-5 indicate that in insurance, the applications being developed over the next two to three years will most probably be targeted for workstation/PC-based C/S or mainframe architectures. This is significantly different from the manufacturing industry sectors, where many more combinations of platforms involving minicomputers will be used.

EXHIBIT III-5



This distribution of platform combinations is similar to that of the banking and finance sector. The one significant difference is that the approximately 40% of the C/S applications being developed in insurance will be core business applications, compared to only 23% for banking and finance, reflecting:

- The ability of current C/S technology to deal with the lower transaction volumes encountered in insurance as compared to banking and finance

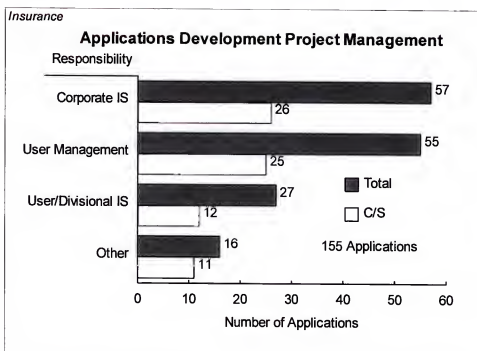


- The superior capabilities of C/S technology to deal with text, a key element in supporting the insurance industry with custom-tailored products

2. Project Leadership Strategy

User management is playing an increasingly important role in project management for applications development in the insurance sector, as demonstrated by Exhibit III-6.

EXHIBIT III-6



Over 35% of the projects will be implemented with user line or staff management assuming direct project management responsibility. This is close to double the average number for the manufacturing industry sectors. Including the 27 projects that will be managed by user or divisional IS functions, the total that will be managed outside of the corporate IS function jumps to 53%. Nevertheless, corporate IS will continue to play a role in applications development in the insurance sector, managing 37% of all applications development.

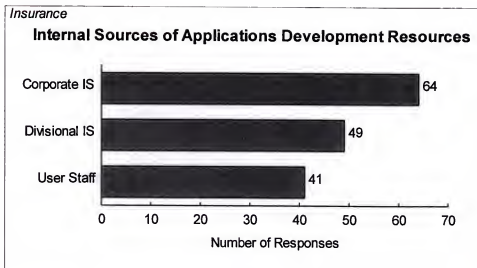


Size of institution is not a differentiating factor for project management strategy. User management continues to have a key role in systems management, whether the company is large or small.

3. Sources of Development Resources

When it comes to the actual development process, corporate IS is still the leading provider of resources, as shown in Exhibit III-7.

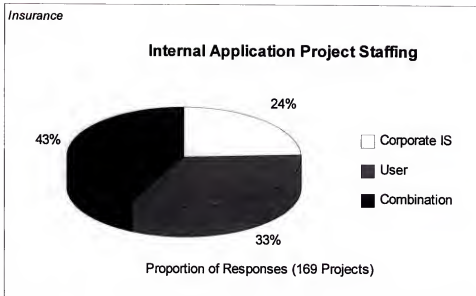
EXHIBIT III-7



As shown in Exhibit III-8, in addition to managing a significant portion of development projects, users will implement 33% of the projects without the involvement of corporate IS. This is a higher proportion by 13% than observed in the other portions of the financial services industry, and is comparable to the statistics for the manufacturing sectors.



EXHIBIT III-8

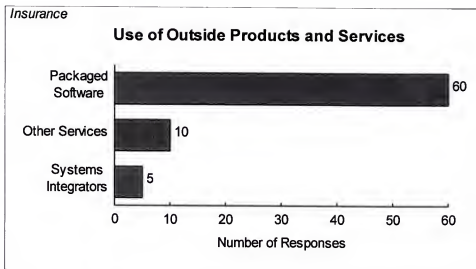


4. Use of Software Products and External Resources

As shown in Exhibit III-9, over 35% of the implementations planned for the next two years will make use of licensed or purchased software packages.



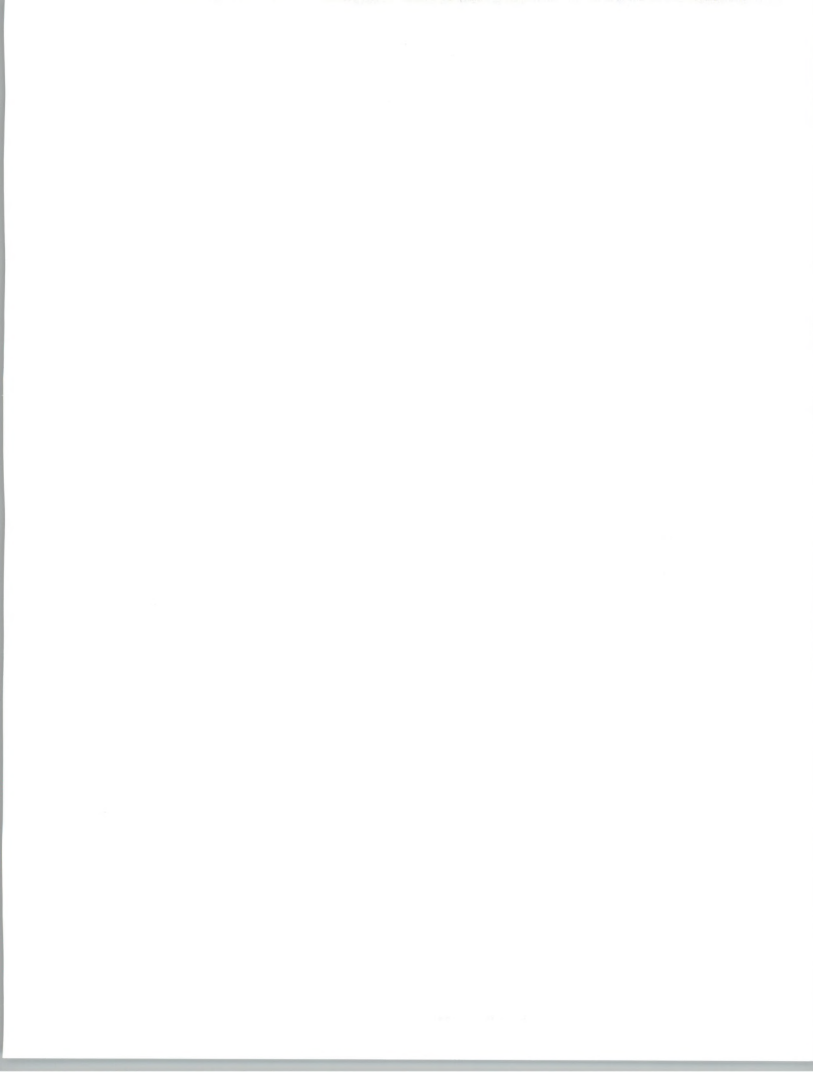
EXHIBIT III-9



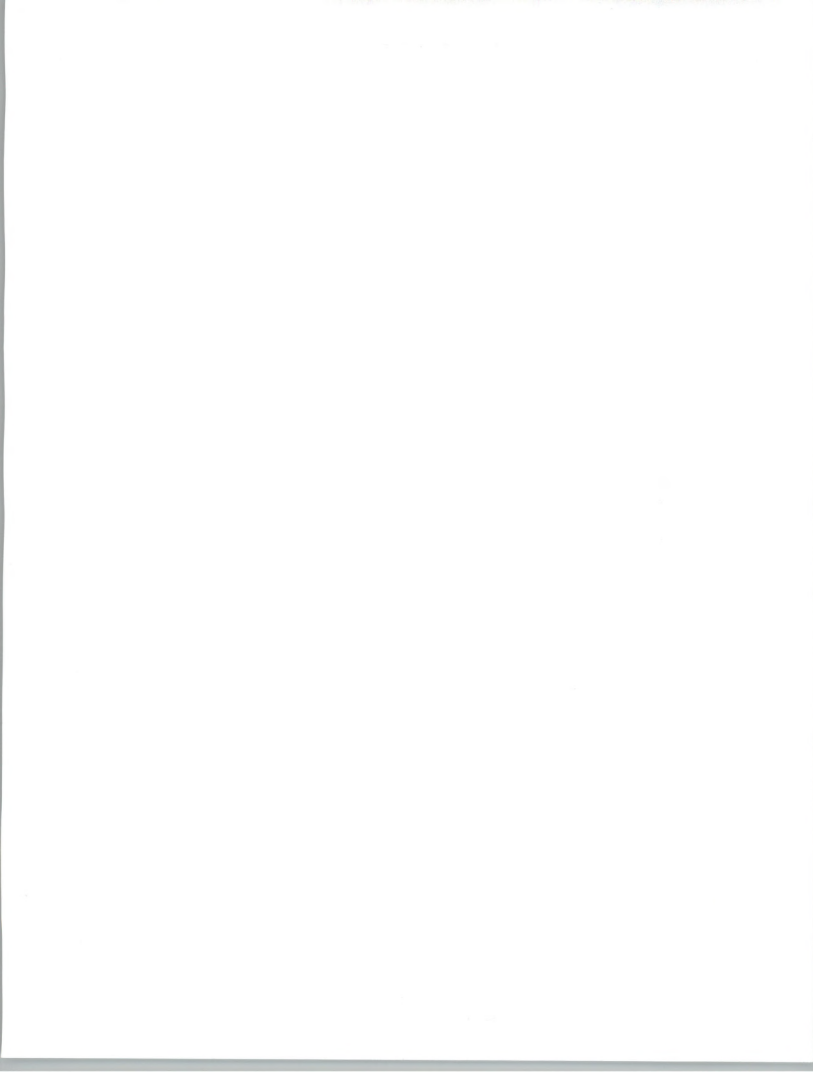
There are only minor variations in the use of third-party software by class of insurer or size of company.

- Middle-sized firms are the largest users of packaged software. The majority of applications using purchased or licensed software will be administrative and staff applications for which off-the-shelf packages are probably more adaptable than for large firms.
- Accident and health insurance firms are least inclined to use third-party packages.

The use of systems integrators and other outside professional services was surprisingly low, given the size of the sample.



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IV

Client/Server Directions in Insurance

The preceding chapter addressed trends with regard to insurance applications development. This chapter discusses the types of applications that will be implemented over the next two years, and the role that client/server architecture will play in the implementations. The chapter is organized as follows:

- Section A provides an analysis of the role that client/server is playing for each of the major classifications of applications.
- Section B analyzes the impact of institution size and spending levels on the use of C/S technology.
- Section C identifies the leading client/server applications for the insurance industry group.

A

Client/Server Applications Analysis

1. Sample Summary

Exhibit IV-1 shows responses to key survey questions by application category.



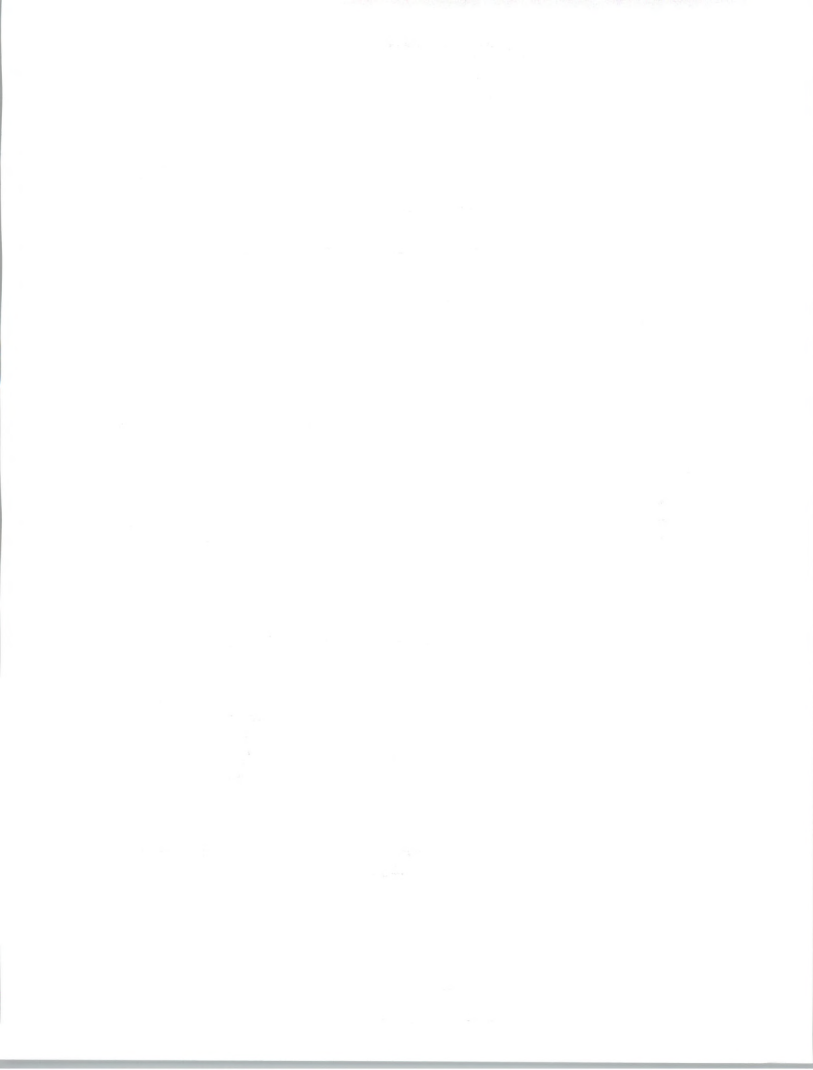
EXHIBIT IV-1

Insurance Implementation Plans by Application Category

Application Category	Number of Applications	Strategy		Platform			Resources					Utilizing EDI	Outsourced	
		Client/Server	Downsizing	Workstation/PC	Minicomputer	Mainframe	Corporate IS	Divisional IS	User Staff	Systems Integrators	Other Outside Svcs.			Packaged Software
Financial	67	36	23	28	5	28	21	20	16	0	3	27	23	12
Insurance Operations	57	27	12	21	7	31	23	17	10	2	5	16	32	7
Infrastructure	18	7	1	7	1	9	7	3	6	0	1	4	11	4
Sales & Marketing	9	4	2	3	1	4	4	3	5	2	1	4	7	1
Planning & Analysis	7	6	4	6	0	2	4	3	1	1	0	5	2	0
Human Resources	4	2	1	2	0	3	3	1	2	0	0	0	3	1
Other Cross-Industry	4	1	0	1	0	3	2	2	1	0	0	1	1	0
Office Systems	3	2	0	2	0	0	0	0	0	0	0	3	1	0
	169	85	43	70	14	80	64	49	41	5	10	60	80	25

An explanation of the column headings follows:

- "Number of Applications" is the total number of applications for each of the application categories.
- The "Strategy" heading contains two subheadings, "Client/Server" and "Downsizing." The "Client/Server" count by category indicates the number of applications within the category that will be implemented using a C/S architecture. The count under the heading "Downsizing" represents the number of client/server applications out of the total that are being implemented as part of a general downsizing strategy.



- The "Platform" heading indicates the number of times that one of the three major platform classes was mentioned as the key implementation platform.
- The "Resources" heading covers six sources of potential resources that will be employed as part of the implementation process. As was the case with the question regarding platform, more than one response per application was permitted.
- Finally, for each application, respondents were asked to indicate whether the application would utilize EDI or be outsourced. The last two columns give a tabulation of those responses.

2. Observations on the Sample Mix

The sample contains a balanced mix of applications, with a third coming from the insurance operations category. As is the case in the banking and finance sectors, there appears to be a very heavy emphasis on financial applications. This is due to the following:

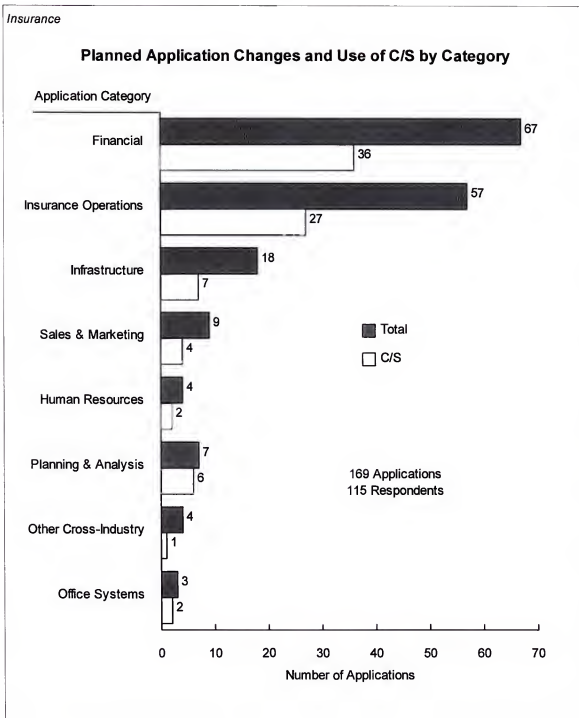
- Changes in federal and state regulatory reporting requirements are outstripping the capabilities of existing financial systems.
- Re-engineering of financial systems offers opportunities for the downsizing of staff activities.
- A number of applications managed by corporate finance, and considered staff support in other industry sectors, are considered operational systems in insurance. These include asset and portfolio management and other treasury activities. Depending on the particular institution, these might show up as separate departments in the sample or be included in corporate finance. In this sample, of the 67 applications reported in the finance category, 29 or 43% are properly categorized as part of insurance operations.

3. Client/Server Applications by Category

Exhibit IV-2 shows planned application changes by category compared to those that will use C/S architectures.

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EXHIBIT IV-2





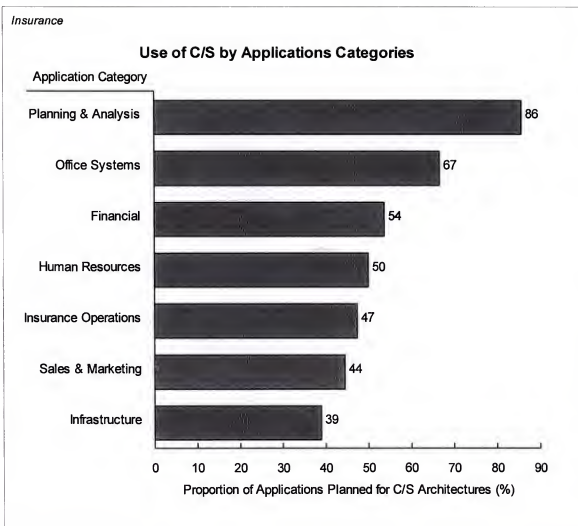
Fifty percent (50%) of the 169 implementations identified in the survey are targeted for some type of C/S architecture. Furthermore, the data points to a strong commitment to use C/S architecture for the industry's core applications. The top two categories, financial and insurance operations applications, contain most of the industry's key operational systems. They account for 73% of the sample and will use C/S technology in just over 50% of the implementations. This compares to a 38% C/S implementation rate for core applications in the banking and finance sector. This difference results from the following facts:

- Many of the core applications in the insurance sector require one or more human interactions to obtain closure on a given transaction. Examples include claims processing and policy processing, where judgments must be made based on company and third-party data sources as to what will be paid or what/who will be insured. Consequently, individual transactions may remain open for extended periods and involve the maintenance of complex history files. The C/S environment is ideally suited for applications with these requirements.
- Many applications involve direct interaction with customers. Using a C/S platform for these applications offers opportunities to design features into the systems that support improved customer service.
- C/S technology can generally handle the transaction volumes involved in insurance applications. This is not the case in many core banking and finance systems.

Exhibit IV-3 ranks the application categories by their proportionate use of C/S technology.



EXHIBIT IV-3



The office systems and planning and analysis categories are established strongholds for the utilization of C/S technology in all industry categories. Finance and insurance operations have been previously discussed.

The one anomaly appears to be in the infrastructure category. One would expect that at least 50% of the infrastructure projects would be using C/S if that is the general industry direction. However, only 39% of these projects identified in the sample are currently planned for C/S implementations. This is probably due to the following:



- Since there were only 18 infrastructure projects identified in the sample, it is quite possible that the population is not representative of overall use of C/S in the industry's infrastructure projects.
- Four of these infrastructure projects were focused on imaging systems. None of them plan to use C/S. In the insurance industry these applications are typically large scale and related to centralized records management. These may be regarded as not amenable to C/S technology. No doubt the applications that will be built around these centralized image repositories will "serve" images to workstations for analysis and operational purposes.

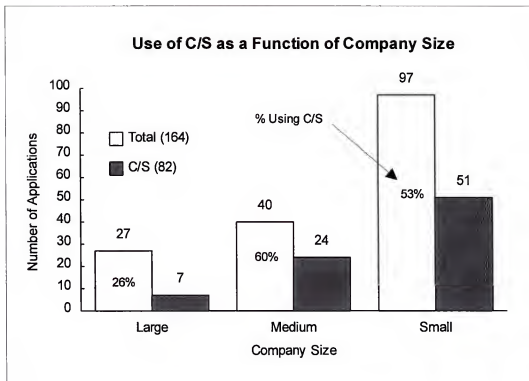
B

Variation by Size and Type of Insurer

Exhibit IV-4 shows how the total sample and use of C/S compare on the basis of size.

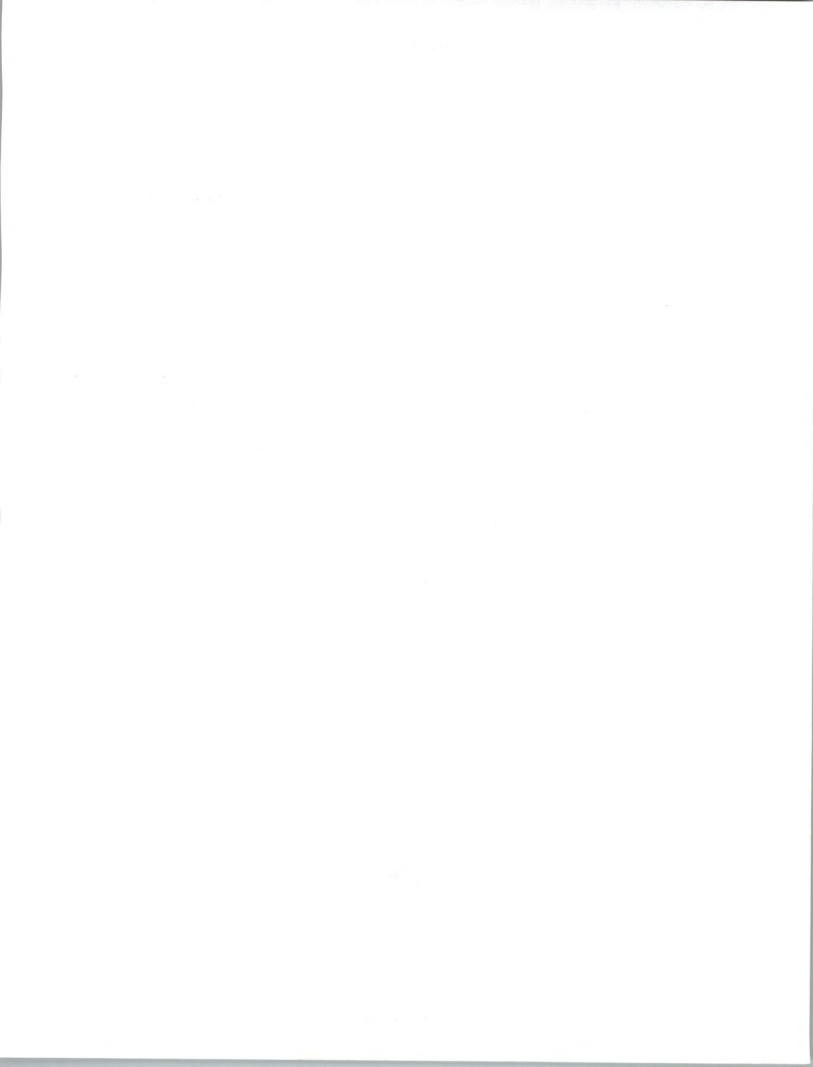


EXHIBIT IV-4



It appears that the large companies are taking a less aggressive approach to C/S technology than the other two groups. For institutions in this category, the proportion planning on C/S implementations is significantly less than the sample average of 50%. The primary reason for this difference is that most of these companies are taking a much more incremental approach to systems migration, leaving core systems in place, and adopting C/S technology only to deal with improved customer service at the operational interface.

There is almost no variation in the use of C/S based on an analysis of the sample by class of insurer. Life, casualty and health insurers all indicate a C/S utilization rate of approximately 50% for applications to be implemented over the next two years.



C

Use of C/S in Specific Applications

Exhibit IV-5 shows the number of each type of application in the survey sample and the proportion of each targeted for the use of C/S platforms. Applications are grouped by application category. Appendix A gives specific definitions for each application type.

EXHIBIT IV-5

**Detailed Distribution of Applications Planned and Use of C/S
Insurance**

Application Category	Application Type	Number Apps.	Number C/S	Share C/S (%)
Financial	Financial Reporting	17	9	53
	General Ledger	17	9	53
	Accounts Payable/Receivable	10	4	40
	Billing	6	2	33
	Fixed Assets	4	3	75
	Budgeting	2	1	50
	Cost Accounting	2	1	50
	Tax Accounting	1	1	100
	Integrated Financial Systems	1	1	100
	Other	7	5	71
Total		67	36	54
Insurance Operations	Claims Loss History & Payment	17	5	29
	Policy Processing	16	7	44
	Customer Records	5	3	60
	Reinsurance Administration	3	1	33
	Agency Automation	2	2	100
	Actuarial Support	1	1	100
	Agency Interface	1	1	100
	Commission	1	1	100
	Other	11	6	55
Total		57	27	47
General Infrastructure	Imaging Systems	4	0	0
	DB Conversion - Rel./Dist.	2	1	50
	Platform Migration - C/S	2	2	100
	Data Conversion	1	0	0
	DB Conversion - General	1	1	100
	Platform Migration - General	1	0	0
	OS - Upgrades/Conversions	1	1	100
	Other	6	2	33
Total		18	7	39

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EXHIBIT IV-5 (CONTINUED)

Detailed Distribution of Applications Planned and Use of C/S Insurance

Application Category	Application Type	Number Apps.	Number C/S	Share C/S (%)
Sales and Marketing	Marketing Mgt./Support	4	0	0
	Order Entry Tracking	1	1	100
	Sales Analysis	2	1	50
	Sales Forecasting	1	1	100
	Telemarketing	1	1	100
Total		9	4	44
Planning & Analysis	Executive Information System	3	2	67
	Spreadsheets/Data Bases	3	3	100
	Financial Modeling	1	1	100
Total		7	6	86
Human Resources	Payroll	2	0	0
	Benefits Administration	1	1	100
	Human Resources Info. Sys.	1	1	100
Total		4	2	50
Other-Cross Industry	Customer Service	2	1	50
	Purchasing	1	0	0
	EDI Systems	1	0	0
Total		4	1	25
Office Systems	Word Processing	3	2	67
Total		3	2	67
Grand Total		169	85	50

Overall, the best opportunities for C/S in insurance beyond office systems and planning and analysis applications, appear to be in financial and industry-specific applications. Customer records, all aspects of agency systems, and policy processing are key targets for the area of insurance operations.

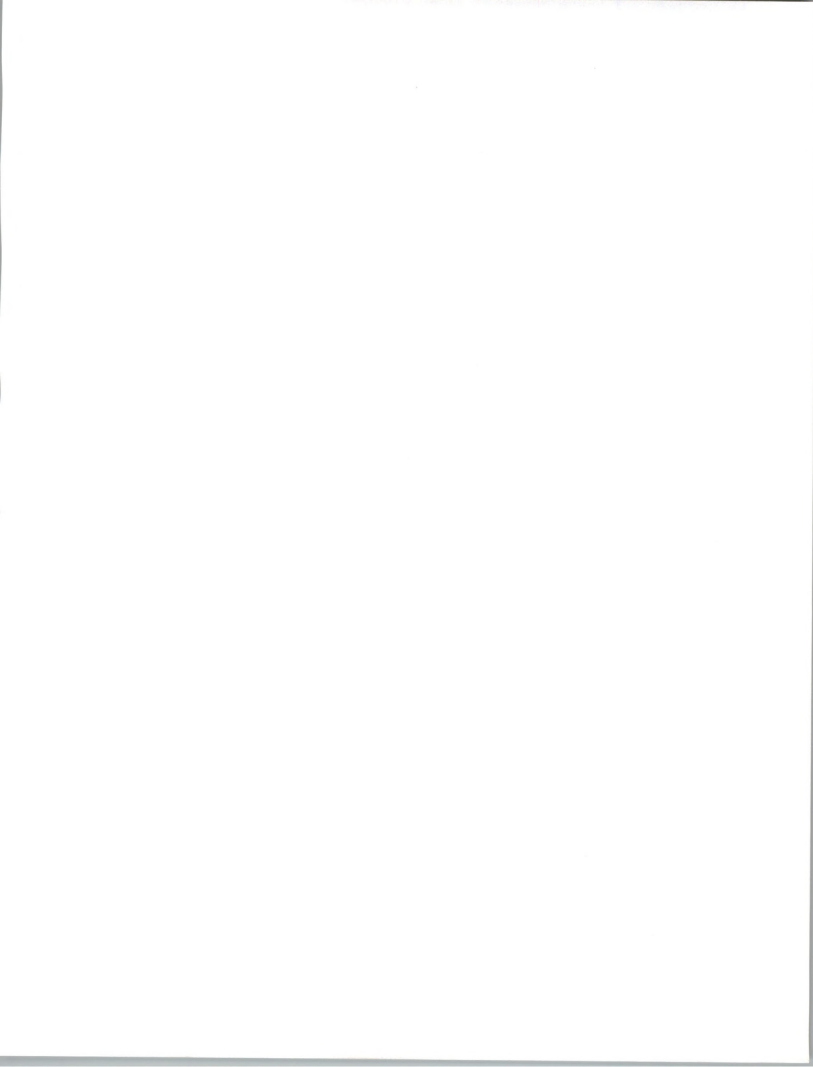


Exhibit IV-6 ranks the applications to be developed over the next two years by frequency of mention and shows the corresponding use of C/S.

 EXHIBIT IV-6

**Ranking of Planned Applications for C/S
Insurance**

Application Type	Number Appls.	Number C/S	Share C/S (%)
Claims Loss History & Payments	17	5	29
Financial Reporting	17	9	53
General Ledger	17	9	53
Policy Processing (P&C), (H&L)	16	7	44
Accounts Payable/Receivable	11	4	36
Other Insurance Operations	11	6	55
Other Financial Systems	7	5	71
Billing	6	2	33
Customer Records	5	3	60
Other Infrastructure	5	2	40
Fixed Assets	4	3	75





Definition of Application Types by Application Category

This appendix provides definitions of all the applications identified in this study. The applications are grouped according to categories. Exhibit A-1 includes all applications that are unique to INPUT's definition of the insurance industry sector. Exhibit A-2 contains definitions of applications identified in this study that INPUT defines as cross-industry.



EXHIBIT A-1

Insurance Operations Application Types

Application Category/Type	Description/Examples
Insurance Operations	
<ul style="list-style-type: none"> • Agency Automation 	Systems to automate operational and local office accounting for agencies
<ul style="list-style-type: none"> • Actuarial Support 	Provides mathematical and statistical processing for purposes of rate setting
<ul style="list-style-type: none"> • Agency Interface 	Systems providing connectivity between insurers and either captive or independent agents
<ul style="list-style-type: none"> • Claims Loss History and Payment 	Systems providing the entry point for information regarding claims and the administration of payments
<ul style="list-style-type: none"> • Commission 	Tracking and management of commissions for both captive and independent agents
<ul style="list-style-type: none"> • Customer Records 	Insurance history and profile for customers
<ul style="list-style-type: none"> • Policy Processing 	Systems to administer changes in policies, as well as the entry of new policy holders into the system
<ul style="list-style-type: none"> • Reinsurance Administration 	Tracking of reinsurance contracts

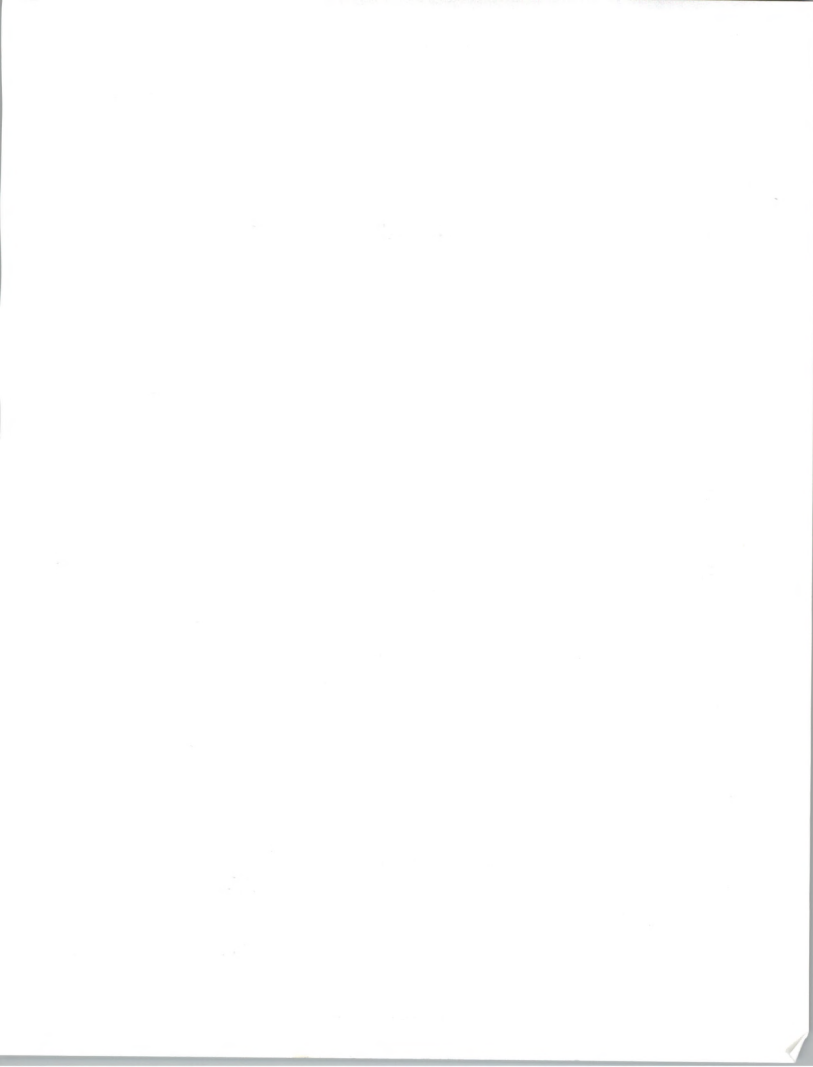


EXHIBIT A-2

Cross-Industry Application Types by Category

Application Category/Type	Description/Examples
Financial	
• Accounts Payable/Receivable	Traditional systems to handle invoicing and payments and manage receivables
• Billing	Traditional invoicing with item detail
• Budgeting	Corporate or divisional applications to facilitate and track the budgeting process and budget management
• Cost Accounting	Systems to analyze the costs of goods and services
• Financial Reporting	Financial systems for the generation of management info.
• Fixed Assets	Systems to track the book value and depreciation of assets
• General Ledger	General ledger
Human Resources	
• Benefits Administration	Systems to manage complex or simple benefits plans
• Human Resource Info. Systems	Data base systems to provide information for human resource management
• Payroll	Payroll processing
General Infrastructure	
• Data Base Conversion - General	Migration to a new data base architecture
• Data Base Conversion - Relational/Distributed	Migration to a relational or distributed (or both) architecture
• Data Conversion	Projects to convert the data from one data base environment to another
• Hardware Upgrades	Projects to upgrade or migrate to new hardware
• Imaging Systems	Installation of infrastructure to support imaging applications
• Operating System Upgrades	Operating system upgrades
• Platform Migration - C/S	Projects to upgrade or migrate to new client/server hardware
• Platform Migration - General	Projects to upgrade or migrate to new general purpose hardware or networks
Office Systems	
• Word Processing Systems	Installation of applications that use word processing
Other Cross-Industry	
• Customer Services	Customer inquiry management, hotline, service and support
• EDI Systems	General-purpose systems to support EDI
• Purchasing	Purchase order processing, management, reporting
Planning and Analysis	
• Executive Information Systems	Systems that provide integrated management information directly to management
• Spreadsheets/Data Bases	Applications that utilize desktop spreadsheets and data bases
• Financial Modeling	Systems to support financial business modeling and analysis



EXHIBIT A-2 (CONTINUED)

Cross-Industry Application Types by Category

Application Category/Type	Description/Examples
Sales and Marketing	
• Marketing Mgt./Support	Sales management, market planning, advertising, etc.
• Order Entry Tracking	Capture and tracking of orders and fulfillment
• Sales Analysis	Statistical analysis of sales performance and trends
• Sales Forecasting	Systems to support the projection of future orders
• Telemarketing	Applications to support telemarketing operations



ABOUT INPUT

IT INTELLIGENCE SERVICES

Since 1974, information technology (IT) users and vendors throughout the world have relied on INPUT for data, objective analysis, and insightful opinions to support their plans, market assessments and technology directions particularly in computer software and services. Clients make informed decisions more quickly and economically by using INPUT's services.

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DATA BASES

- U.S. Federal Government
 - IT Procurements
 - IT Awards
- IT Vendor Data Base
- IT Application Development Opportunities

CUSTOM PROJECTS

Custom market research and consulting projects address questions on market strategies, new product/service ideas, customer satisfaction levels, competitive positions and merger/acquisition options.

INPUT advises IT buyers on a variety of planning and implementation issues, including assessing the outsourcing of IT operations, assisting in the vendor selection process, and in contract negotiation/implementation. INPUT also evaluates plans for systems and applications downsizing.

OTHER SERVICES

Presentations to user groups, planning meetings, etc., on directions in IT and computer software and services

Acquisitions/partnerships searches on an international basis

EDI/Electronic Commerce Newsletter

SUBSCRIPTION PROGRAMS

- Information Services Markets
 - Customer services, network services, processing services, professional services, software products, systems integration, systems operations (FM), and turnkey systems
 - Worldwide and country analysis
 - 5-year forecasts
 - Vertical industry analysis
- IT Outsourcing Opportunities
 - Systems operations
 - Applications management
 - Desktop services
 - Network management
- Client/Server Applications and Directions
- Systems Integration and Business Process Change
- Information Services Vendors
 - Profiles
 - Analysis
- EDI/Electronic Commerce
- U.S. Federal Government IT Markets
- IT Customer Services Directions

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