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Cross-Industry Markets 1991-1996

Accounting Sector

INPUT®

1280 Villa Street, Mountain View, CA 94041, (415) 961-3300

AUGUST 1991

CROSS-INDUSTRY MARKETS 1991-1996

ACCOUNTING SECTOR

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1280 Villa Street, Mountain View, California 94041-1194 (415) 961-3300

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1280 Villa Street
Mountain View, CA 94041-1194
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Market Analysis Program (MAP)

Cross-Industry Markets, 1991-1996
Accounting Sector

MAPAC • 504 • 1991

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Table of Contents (Continued)

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Introduction

Introduction

The accounting cross-industry sector report is written each year by INPUT as one of seven reports on cross-industry sectors of the U.S. information services industry. The seven cross-industry sectors are:

1. Human Resources
2. Accounting
3. Engineering and Scientific
4. Planning and Analysis
5. Education and Training
6. Office Systems
7. Other Cross-Industry

These reports are included as part of INPUT's Market Analysis Program (MAP), a planning service for information services vendors.

A

Purpose and Organization

1. Purpose

The objectives of this cross-industry report are to:

- Introduce the reader to the accounting cross-industry sector
- Identify the business and technological issues and trends that are driving the use of information services for the accounting cross-industry sector
- Forecast user expenditures during the next five years on information services for the accounting cross-industry sector
- Discuss the competitive environment and profile leading vendors in the accounting cross-industry sector.

The report provides readers with insights and information that will help them:

- Review the forces shaping the market
- Develop internal corporate financial projections
- Identify new markets and product and services opportunities
- Assess the competitive trends
- Determine potential market directions
- Assist in prioritizing investments

2. Organization

This report is organized as described in Exhibit I-1.

EXHIBIT I-1

Cross-Industry Sector Report Format

I. Introduction
- Introduce and define each of the cross-industry sectors.

II. Trends, Events and Issues
- An overview of the business climate within the cross-industry sectors and the information services industry as a whole.

III. Information Systems Environment
- The user perspective as it relates to information systems for the cross-industry sectors.

IV. Information Services Market Forecast
- Presentation of the information services market forecasts by delivery mode and submode for each of the seven cross-industry sectors.

V. Competitive Environment
- Discussion of the competitive environment for information services within each of the cross-industry sectors, and vendor profiles.

VI. Conclusions and Recommendations
- A summary of risks and opportunities.

A. Forecast Data Base
- Detailed forecast by delivery mode, submode and each cross-industry sector. Contains a reconciliation to the previous year's Appendix B for each cross-industry sector.

Note: For definitions, the reader is referred to INPUT's *Definition of Terms* found in the overview binder of the Market Analysis Program.

Chapters I, II, and III are common to all cross-industry sectors. Chapters IV, V, and VI are written specifically for each of the seven individual sectors. Appendix A, Forecast Data Base, is also provided specific to each of the seven cross-industry sectors.

B

Definitions

This report addresses the U.S. information services industry for the accounting cross-industry sector. It includes user expenditures that are noncaptive (generally available to vendors). Many large organizations have portions of their information services requirements satisfied by internal divisions. The resulting expenditure is not available for competitive bid by the general vendor community and is not included in INPUT's projections.

1. Cross-Industry Sector Definitions

INPUT defines cross-industry information services as packaged functional application solutions that are used by multiple industry sectors. In other words, these application solutions are not verticalized. For example, accounting, and planning and analysis are functions that are similar enough across all industries to be considered markets in their own right for nonverticalized application solutions.

The accounting cross-industry sector consists of those products and services that are bought by multiple industry sectors to serve functions such as those listed in Exhibit I-2.

EXHIBIT I-2

Accounting Cross-industry Sector Applications

- General ledger
- Accounts payable
- Accounts receivable
- Billing/Invoicing
- Costing
- Fixed assets
- International accounting (currency conversion, value-added taxation, and consolidation)
- Purchasing
- Taxation

Related applications covered in other sectors include:

- Financial modeling (see Planning and Analysis cross-industry sector report)
- Sales management and order entry (see Other cross-industry sector report)
- Payroll and personnel (see Human Resources cross-industry sector report)

Accounting products and services that are directed to a specific industry are covered in specific industry sector reports such as banking and finance, telecommunications, and insurance.

2. Delivery Mode Definitions

Cross-industry application solutions are delivered via applications software products, turnkey systems, and transaction processing services. Management support information services such as systems operations, systems integration, and professional services, and information delivery services and systems software are excluded from cross-industry consideration.

a. Applications Software Products

Applications software products enable a user or group of users to support an operational or administrative process within an organization. Examples include accounts payable, order entry, project management and office systems. INPUT categorizes applications software products into two submodes.

- *Industry-Specific Applications Software Products* - Software products that perform functions related to fulfilling business or organizational needs unique to a specific industry (vertical) market and sold to that market only. Examples include demand deposit accounting, MRPII, medical record keeping, automobile dealer parts inventory, etc.
- *Cross-Industry Applications Software Products* - Software products that perform a specific function that is applicable to a wide range of industry sectors. Examples include payroll and human resource systems, accounting systems, word processing and graphics systems, spreadsheets, etc.

INPUT also forecasts the applications software products delivery mode by platform level: mainframe, minicomputer and workstation/PC.

b. Turnkey Systems

A turnkey system is an integration of equipment (CPU, peripherals, etc.), systems software, and packaged or custom application software into a single product developed to meet a specific set of user requirements. Value added by the turnkey system vendor is primarily in the software and support services provided. Most CAD/CAM systems and many small business systems are turnkey systems. Turnkey systems utilize standard computers and do not include specialized hardware such as word processors, cash registers, process control systems, or embedded computer systems for military applications.

Computer manufacturers (e.g., IBM or DEC) that combine software with their own general-purpose hardware are not classified by INPUT as turnkey vendors. Their software revenues are included in the appropriate software category.

Most turnkey systems are sold through channels known as value-added resellers.

- *Value-Added Reseller (VAR):* A VAR adds value to computer hardware and/or software and then resells it to an end user. The major value added is usually applications software for a vertical or cross-industry market, but also includes many of the other components of a turnkey systems solution, such as professional services.

Turnkey systems have three components:

- *Equipment* - Computer hardware supplied as part of the turnkey system
- *Software products* - Prepackaged systems and applications software products
- *Professional services* - Services to install or customize the system or train the user, provided as part of the turnkey system sale

c. Processing Services

This delivery mode includes three submodes: transaction processing, utility processing, and "other" processing services.

- *Transaction Processing* - Client uses vendor-provided information systems—including hardware, software and/or data networks—at the vendor site or customer site to process transactions and update client data bases. Transactions may be entered in one of four modes:

- *Interactive* - Characterized by the interaction of the user with the system for data entry, transaction processing, problem solving and report preparation; the user is on-line to the programs/files stored on the vendor's system.

- *Remote Batch* - Where the user transmits batches of transaction data to the vendor's system, allowing the vendor to schedule job execution according to overall client priorities and resource requirements.

- *Distributed Services* - Where users maintain portions of an application data base and enter or process some transaction data at their own site, while also being connected through communications networks to the vendor's central systems for processing other parts of the application.

- *Carry-in Batch* - Where users physically deliver work to a processing services vendor.

• *Utility Processing* - Vendor provides basic software tools (language compilers, assemblers, DBMSs, graphics packages, mathematical models, scientific library routines, etc.), generic applications programs and/or data bases, enabling clients to develop their own programs or process data on the vendor's system.

• *Other Processing Services* - Vendor provides service—usually at the vendor site—such as scanning and other data entry services, laser printing, computer output microfilm (COM), CD preparation and other data output services, backup and disaster recovery, etc.

For a more complete discussion of INPUT's information services industry structure and market sector definitions please refer to INPUT's *Definition of Terms* found in the overview binder of the Market Analysis Program.

C
Related Reports

Related reports of possible interest to the reader include:

1. U.S. Markets

• *Cross-Industry Market Reports*
- Human Resources Sector, 1991-1996
- Engineering and Scientific Sector, 1991-1996
- Planning and Analysis Sector, 1991-1996
- Education and Traning Sector, 1991-1996
- Office Systems, 1991-1996
- Other Cross-Industry Sector, 1991-1996

- *U.S. Application Solutions Market Analysis Report, 1991-1996*
- *U.S. Processing Services Market Analysis Report, 1991-1996*
- *U.S. Industry Sector Markets, 1991-1996* (15 reports on all major industry sectors, e.g., insurance)

2. European Markets

- *The Western European Market for Computer Software and Services, 1991-1996*
- *Trends in Processing Services—Western Europe, 1991-1996*

Trends, Events, and Issues

II

Trends, Events, and Issues

In this chapter INPUT provides an overview of the current business climate for the U.S. information services industry and for the accounting cross-industry sector.

A 1990 Results

In 1990, the U.S. information services industry reached a milestone, ending the decade at about $100 billion in size. As Exhibit II-1 shows, the industry increased in size over five times during 1980s and is 50 times larger than it was in 1970, when the industry represented $2 billion in user expenditures.

During 1990, the industry grew at just under 12%—from about $90 billion to $100 billion. As Exhibit II-2 indicates, 1990 reflects an intensification of a decline that started in 1989. The average annual growth during the first eight years of the decade was over 19%.

Worldwide, the industry continues to experience greater growth rates of close to 20%, and many U.S. vendors are experiencing growth that exceeds that of the U.S. industry as a whole. This growth is primarily due to international sales, but is also due to the focus on specific industry markets. Inflation rates and somewhat stronger economies are driving the industry to higher growth levels overseas.

On a delivery mode basis:

- The smaller systems integration, systems operations, and network services delivery modes are growing faster than the rest of the industry.
- The software products sectors grew at or slightly above the industry average.
- The larger professional services and processing services sectors, as well as the smaller turnkey systems sector, are growing slower than the industry average.

EXHIBIT II-1

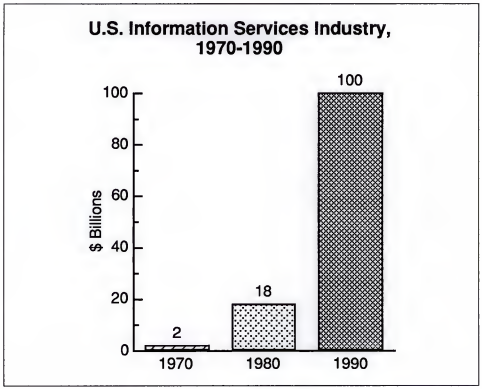


EXHIBIT II-2

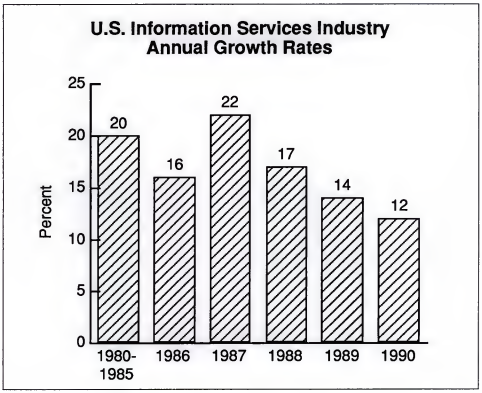


Exhibit II-3 summarizes 1990 results.

EXHIBIT II-3

U.S. Information Services Industry
1990 Results Summary

- Reached the $100 billion milestone
- Growth 2 to 3 times the economy continues
- Growth slowed in 1990 relative to 1989
- Economy causes confusion

Growth in transaction processing services sold to cross-industry sectors fell to 7% in 1990, which was lower than the growth during any year in the past decade. In several cross-industry sector markets—such as office systems and planning and analysis—growth rates for transaction processing services have been negative for the last two years.

Although there was wide variation in growth rates among the cross-industry sectors, total growth for cross-industry applications software products was 12% in 1990, compared to 21% in 1988.

User expenditures on turnkey systems sold to cross-industry sectors was only 5% higher in 1990 than in 1989 and will continue to grow at a low rate through 1996. The only cross-industry sector exhibiting moderately strong growth is the engineering and scientific sector, with a 12% increase in 1990.

B

Driving Forces

There are a number of fundamental forces impacting the information services industry in the 1991-1992 timeframe that will have measurable impact on the overall growth rate for the 1991-1996 five-year period covered by this market analysis report. Each force will affect the industry as a whole, as well as each of the eight delivery mode sectors used by INPUT to analyze the industry and its key trends.

Exhibit II-4 identifies six primary driving forces impacting the U.S. information services industry. The impacts are multidimensional, fundamental, and long lasting. Each is discussed in this chapter and throughout this report.

EXHIBIT II-4

Information Services Industry
Primary Driving Forces, 1991-1996

- The economy
- Globalization
- Influence of large vendors
- Outsourcing (buy versus make)
- Shifting technology foundation
- The changing buyer

C

Key Trends

1. Economic Impacts

The economy, as well as the overall size of the information services industry, is a significant factor in the user expenditure level for information services and software products.

- The inflation rate of the past few years has been much more modest than in the mid-1980s. INPUT forecasts and market sizes are in current dollars—thus lower inflation means lower growth.
- Real economic growth had been modest over the past few years prior to the recession that started in late 1990. Deferred and canceled expansion plans in all industry sectors certainly slow the expansion of information services expenditures.
- The shift of information processing to smaller computers lowers the software products investment, based on current pricing practices. Quantities of software products sold increase, but revenue levels grow at more modest rates.
- The shift of information processing to smaller computers also puts price pressures on processing services firms that must compete with downsized in-house solutions.

In 1990, a year with little to no real growth in the overall economy and inflationary growth of about 5%, the information services industry grew 12%.

- INPUT's 1990 and 1991 economic assumptions were for nominal GNP growth of 5.4%; real GNP growth was 1% or less.

- At this point in 1991 (the third quarter), the economy remains in no-growth status, with some improvement expected by late in the year. At the same time, inflationary pressures are modest. INPUT expects another modest growth year in 1991 and again in 1992. The expected slow upturn will have the following positive and negative impacts on the U.S. information services industry in the near term:

- Positive impacts include:

  - Increased motivation to buy rather than make, in particular for larger systems requirements. Response time and impact on business operations are the key criteria.

  - The interest in systems operations, which permits organizations to redeploy capital investments and lower direct headcount, is being reinforced.

  - A tight economy is helping develop interest in lower-cost solutions that come from client-server-based applications software products.

- Negative impacts include:

  - Decision processes are lengthened in a tight economy, causing deferral of major information systems projects.

  - With tight information systems budgets, the internal information systems staff can be favored over contracted professional services vendors, thus negatively impacting a major segment of the industry.

Users purchase processing services for the long term, and the length of processing services contracts is tied to client usage agreements. Consequently, processing services does not experience significant cutbacks due to fluctuations in the economy. An opportunity exists in the sale of incremental capacity to companies wishing to delay hardware expenditures.

Applications software products markets—both cross-industry and industry-specific—have felt few if any of the effects of a slowed economy. The fact that hardware sales will slow further in the short term due to the economy is offset by pressure on profits at end-user organizations; expenditures on software that is viewed as improving productivity and/or cutting costs are likely to increase during a weakened economy.

Turnkey systems vendors, however, are experiencing moderately adverse effects from the slowdown in the economy.

- Hardware purchases are put on hold—and hardware is a key factor of the turnkey solution.

- VARs and turnkey vendors that sell predominantly to small companies will experience the adverse effects of an economic downturn, as smaller firms are the first to cut back on capital expenditures.

Turnkey and VAR service contracts and support services, however, have not been negatively impacted by a slowed economy. In fact, this portion of their business is expanding as customers look for ways to leverage the products they already have.

2. Globalization

INPUT has cited globalization as a driving force for the past three years. During that time markets have opened, vendors have expanded their international focus, and users have begun to expect global capabilities.

- The European market is making progress toward a single market. Now 1992 is less than a year away and many changes are apparent. In addition, the European market is stronger than the U.S. market, although both are suffering in the current economy.

- The worldwide orientation of the larger services vendors is verified by the investments in Europe by Computer Sciences Corporation and Digital Equipment and by the ever-expanding interest of Japanese vendors in the U.S. information services industry.

A high percentage of U.S. processing services firms' revenues is U.S.-based and is likely to remain so. For example, 95% of ADP's revenue is derived from the U.S. ADP is the largest transaction processing services firm, with revenues that are almost double the revenues of the next closest competitor.

For applications software products vendors, on the other hand, revenues from non-U.S. sources are rapidly expanding. The following are notable examples of software firms expanding their presence in international markets:

- Computer Associates' net income from foreign operations was 28% of its total net income for 1990.

- Microsoft's international sales were 55% of total fiscal 1990 revenues.

- Oracle's international sales are now 49% of total revenues, and they are edging up.

The largest turnkey systems vendors are also expanding their international presence. For example, Intergraph's non-U.S. revenues are now approaching 50% of total revenues.

The primary positive impact of globalization is the ability of larger vendors to balance their businesses in multiple markets with less impact from market downturns.

The primary negative impact from globalization is that it may make it harder for smaller vendors to grow and/or maintain independence.

3. Influence of Large Vendors

The influence of the larger information services vendors has increased significantly over the past few years.

- The newer systems integration and systems operations sectors, though smaller than more traditional sectors such as professional services and processing services, are growing faster than the traditional sectors and are dominated by the leading vendors.

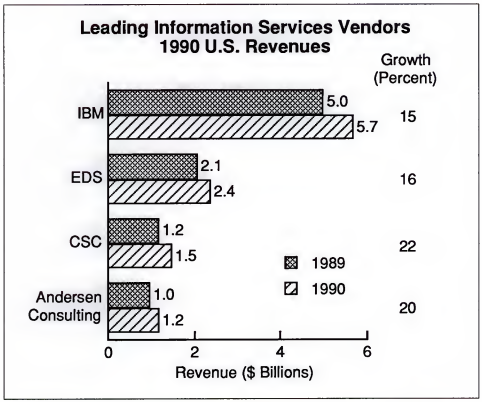
- A number of larger vendors are growing faster than the overall market. Exhibit II-5 lists four of the largest information services vendors that can be considered multi- or full-service vendors and reveals their U.S. 1989 and 1990 information services revenues. All four increased information services revenues by at least 15%, greater than industry growth as a whole.

- Certainly there are numerous smaller firms that are also growing faster than the general market, but overall, the dominance of the larger vendors is increasing.

Vendor size is becoming more important, as a predictor of both survival and the level of support an applications software product or a turnkey systems vendor can deliver to its customers.

Although there are few barriers to entry in the software arena, it is questionable whether a small software company or VAR can remain viable without alliances. VARs and the smaller turnkey systems vendors are at a disadvantage in terms of geographic reach. They may have the best software for a specialized niche, but they have no way to expand their customer base. For them, marketing alliances are a key requirement for growth.

EXHIBIT II-5



Small companies can no longer expect to survive on their own in the long term. Such companies need broader distribution, and the advertising, marketing, and public relations that only a larger buyer can provide. Size alone provides far greater benefits to the business side of a software operation than it does to generating product ideas.

The large-vendor influence is increasing in other ways as well.

- Starting with IBM, many large services vendors are making minority and majority investments to gain influence on technology, access to software products for remarketing, and market share.

- DEC's investment in Kienzle in Europe and EDS's investment in ASK Computer Systems are two examples of large vendors' seeking new channels and resources.

- As hardware profits decline, large hardware vendors are reorganizing in order to be more responsive to growing markets for software and services. DEC, for example, created its Software Products Group last year, and Sun has reorganized to create two software subsidiaries—one to develop more software and peripheral products and one to improve the UNIX operating system. IBM has also recently reorganized in order to grow its software and services business.

- Consolidation is also a factor. Mergers among the major accounting firms have reduced the number of players, but have given two of the firms (Ernst & Young and Deloitte Touche) added resources to follow the example of Andersen Consulting. A third—Price Waterhouse—is also experiencing significant growth in its information technology-based business.

  Large transaction processing services vendors continue to acquire smaller regional and local firms, but not at the rate of previous years.

  Applications software products vendors will continue to consolidate as more emphasis is placed on integration and interoperability. Applications software products firms are not only acquiring each other, but they are also acquiring firms that have new technology bases—such as transaction processing data bases and client-server CASE tools—that are of paramount importance to developing better applications software products based on new technologies.

The increasing use of business consulting linked to professional services has provided a means for the large accounting and consulting firms, as well as some large information services and software firms, to gain a greater share of the industry.

INPUT expects this trend to continue over the next few years. The opportunity for the smaller, more specialized software product or services vendors is not disappearing, but it is changing character.

- Alliances with larger vendors will be essential, at least as secondary sales and support channels.

- Specialization—in terms of the technology used or the industry served or both—will become more important and common.

The increased importance of specialization bodes well for turnkey systems vendors and VARs whose added expertise in vertical niches is the basis of their success. It also bodes well for continued growth for industry-specific applications software products. However, increasing emphasis on specialization will have a negative impact on turnkey vendors that compete as cross-industry sector vendors. Provision of tools for easy customization and integration will become increasingly important to success for vendors with cross-industry applications software products.

The continuing increase in the strength and impact of the larger vendors will have the following positive and negative impacts:

- Positive impacts include:

  - The larger vendors have the financial strength to minimize the risk of systems management services.

- The larger vendors have financial resources available to invest in new technologies, often through investment in smaller and specialized firms.

- Broad architectural frameworks—such as IBM's SAA and DEC's NAS—will create conformity in the marketplace, more consolidation, and eventual interoperability and portability.

• Negative impacts include:

- Alliances may become a requirement for smaller technology firms to survive and prosper.

- The dominance of the larger vendors will continue to grow.

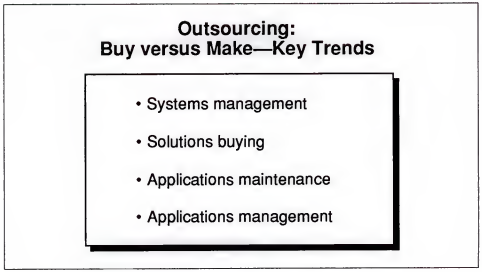
- Larger vendors tend to move more slowly, which will hamper development and acceptance of new technology. This slowness will provide opportunity to small vendors that seize technology initiative.

4. Outsourcing (Buy versus Make)

Since its inception, the information services industry (services and software products) has tended to outgrow the internal information services budget by continuously creating new products and services that permit the information systems function to outsource (buy versus make). This has always been an outsourcing industry. And though growth has slowed, a number of factors will permit continued growth that exceeds growth in the economy, the computer hardware sector, and the internal information systems budget.

Key trends in outsourcing are listed in Exhibit II-6.

EXHIBIT II-6



a. Systems Management

Outsourcing the management of information systems or at least significant elements of information systems continued to gain momentum during 1990. Helped more than hindered by the recessionary economy, the inclination of the general management of large organizations to consider outsourcing increased.

The ability to transfer much of the financial risk and, perhaps more importantly, the technological risk of a project or operations to a specialist has numerous attractions for general management.

- The attraction that will become more and more important will be the ability to disconnect the information technology part of the solution from the business decision. General management is concerned with business results and does not want to debate the pros and cons of a technology. The appeal of the vendor's offer to take on risk either in a project (systems integration) or in operations (system operations) can only grow during the 1990s.

- The nature of most outsourcing activities within larger organizations often makes them favor the large vendors, adding impetus to the trend described above. If there is major risk involved, the buyer will bet on the company most able to accept risk and take responsibility.

- Perhaps the most important attraction is the ability of buyers to gain access to a broad information technology on an arm's-length business basis in a single decision.

  - The systems integration vendor can provide all the needed expertise in a new technology at the beginning of a project. There is no internal training lag time while the information systems staff gains the knowledge and experience required.

  - The systems operations vendor can provide a full utility-based service at a predictable cost over a number of years. This should make for fewer surprises from the overall information systems program.

b. Solutions Buying

Buying applications software is a well-established practice in the U.S. market where the use of packaged software is commonplace. However, the current change in the way U.S. organizations are managed and the availability of low-cost, high-performance client-server computing is bringing new impetus to the application solutions market.

- The fundamental decentralization of U.S. business management with the corresponding reduction of corporate staffs is creating a major requirement for business unit (distributed) application systems. Furthermore, the buyer is not an information systems professional and is willing to outsource (buy) with some customization.

- Just when the smaller business unit needs independent application solutions, there is a hardware revolution to support the need. Client-server technology provides affordable, high-powered computing.

The ability to find a VAR that can provide a package plus customized systems on client-server-based software is bringing the solution value of systems integration to the decentralized business unit.

c. Applications Maintenance and Applications Management

In line with the shift to outsourcing systems management to systems integrators and systems operations firms, the buyer is also seeking to gain more-defined relationships with more-traditional professional services vendors. Instead of contracting for temporary personnel, the buyer is beginning to contract for services like applications maintenance and applications management.

- Applications maintenance is contracted, 24-hour support of existing applications systems. The vendor provides a set level of services and interacts directly with the end user.

- Applications management is contracted management of development and maintenance of a set of applications. The vendor provides the software and all of the expertise and staff to assure that the application is successfully used over an extended period. Applications software products firms can become applications management vendors for their clients or let some other vendor do it.

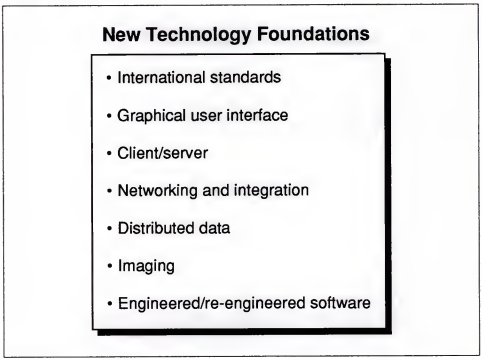
The trend towards outsourcing is creating new demand for the provision of additional services by applications software products firms and turnkey systems vendors. Customers are beginning to want to pay vendors to maintain their software rather than hire their own people to do it. Increasing need for customization and integration is also creating new demand for outsourced services.

5. Shifting Technology Foundation

Significant new technologies became available in the late 1980s and are gaining momentum in the 1990s. An underlying characteristic of much of this new technology is a shift in the technological foundation. Many elements of technology are shifting to new foundations.

Exhibit II-7 lists the key elements of this shift in underlying technology. Each element is causing organizations to stop and rethink key aspects of their information systems infrastructure strategy. Rethinking can slow the adoption in the short term, and create new vendor opportunities over the longer term.

EXHIBIT II-7



All of these new technologies and foundations cause confusion in the industry and with the buyer. Confusion slows buyers' and vendors' decision making. Strategies need to be revised and investment plans shifted, and education is required.

- Standards are driving every major computer manufacturer and software products developer to revise strategies and change product development plans. New products are delayed and then require longer initial sales introductions.

- The user interface of the personal computer in its graphical pull-down menu and windowing form will be the only interface acceptable to users from now on. The text-based interfaces of the 1970s and 1980s will no longer be tolerated. Every major software product developer is re-engineering the user interfaces to its products. The widespread availability of easy-to-use graphical user interfaces will promote the use of application solutions by the general user base and allow for use of more application solutions—both industry specific and cross industry—per user.

- Downsizing, the common term for moving an application to a client-server-based installation, will be the greatest phenomenon of the early 1990s. Whether or not the installation is actually downsized, it will be moved to a new processing location and take on new characteristics. Major re-engineering of internal systems by the information systems function and a shift to buying server-based application products is under way. All of the impacts are not known. One, software products pricing based on the size of the platform, will have to change. Certainly some confusion exists and is impacting buying decisions.

- The growing use of PCs, workstations, and LANs has mandated a move to integrate the information networks of large and small organizations. Today's networking products permit the distributed applications that have been discussed for years but were never possible.

- The way data is stored and turned into information has been fairly constant since the creation of the first hierarchical DBMS in the early 1970s. Since then the challenge was to build data bases, not to consider building them with new types of components. The shift started with commercial use of relational DBMSs, but it is the distributed DBMS, and perhaps more importantly image processing, that will cause major re-engineering of the data base architectures of larger organizations. Major new investment is required and of necessity will come over time.

- PCs, workstations, LANs, DBMSs, and client-server technology have a potentially negative impact on transaction processing services vendors. Though such technologies may slow the growth of conventional transaction processing services, vendors that can adapt to these technologies will gain market advantage. The challenges vendors face may be similar to those occurring when the timesharing services matured and then declined, as companies developed internal capabilities and the age of the personal computer began.

- Both cross-industry and industry-specific applications software products vendors are scrambling to develop RDBMS-based products to compete in the 1990s marketplace. Oracle started this trend with its cross-industry financial applications software products. Vendors are writing products using general SQL tools and are teaming with RDBMS companies such as Ingres, Sybase, and Gupta, as well as Oracle, to make their application solutions available across a spectrum of RDBMSs and hardware platforms.

- Applications software products vendors and hardware vendors will look to third parties—including turnkey systems vendors and VARs—as a way to distribute their new technology-based solutions. VARs and turnkey vendors will increasingly need to develop technological expertise as well as integration expertise in order to keep pace.

- The age of truly engineered and re-engineered software through CASE technology is dawning. In five years the approach to maintenance will have finally changed and there will have been major advances in programmer productivity.

The positive and negative impacts of the shift in technological foundation are listed below. Certainly over the five-year period of this forecast the positives greatly offset the negatives.

- Positive impacts from this shifting technology foundation include:
  - New types of solutions will become available.
  - The role of the end user in information systems can continue to expand.
  - Opportunities for new as well as existing vendors are created.
  - Application systems can be increasingly molded to the character of the organizations they support.
- Negative impacts are:
  - Any shift causes confusion and hesitation in the near term. The magnitude of the current technology shift could cause confusion and slow investment through the middle of the decade.
  - The size of the task to shift to client-server technology in organizations with large centralized systems causes conflicting priorities between re-engineering and meeting new requirements.
  - The technology shift now in process is creating a significant additional training and education requirement.
  - Growth is slowed while the new technology is understood and learned.

6. The Changing Buyer

The decision maker for the purchase of information services remained relatively constant until the late 1980s. The information systems executive and key staff (systems development and data center operations managers) decided when to go outside and who to contract with.

This leadership has changed significantly in the past few years and promises to change even further. As integration becomes increasingly important, the decision to purchase any given applications software product—be it cross-industry or industry-specific—will involve multiple

departments/divisions and multiple levels of an organization. As the information services vendor moves to provide a full long-term service or a full solution, the general manager is becoming the buyer. The impacts are significant.

- Technology becomes less important and the business or operational impact becomes more important.
- The impact of the information systems function becomes more consultative and less direct.
- The ability to try new ideas and approaches is increased.
- The time to completion is controlled by the organization's ability to afford, not the ability of information systems to develop.

D

Summary

The year 1991 is exhibiting significant changes from the 1980s. The changes suggest more modest, but continued strong and stable, growth for the information services industry.

- An economy that does not shift quickly helps management make longer term decisions, albeit at a slower pace.
- A market of $100 billion that is strongly impacted by the direction of the larger vendors should be expected to grow somewhat slower.
- The increasing tendency of larger organizations to turn to vendors for services that include real and significant elements of systems management and have a solutions orientation will lead to larger, longer term decisions—decisions that can take longer but have a lasting impact.
- The shift in the underlying technology foundation is for the better—more valuable and productive applications solutions will result. But shifts bring re-engineering, reinvestment, and retraining—and require time and money.
- The role of the general manager concerning the deployment of information technology continues to increase. In many instances the general manager is more influential than the information systems manager, particularly regarding major decisions. Over time the general manager's influence will have positive impacts on the size and growth of the information services industry—as long as the vendors provide satisfaction.

Information Systems Environment

III

Information Systems Environment

To better understand what was most on the minds of IS managers regarding applications software products, INPUT surveyed top computer executives in medium-sized to large corporations. INPUT also conducted a series of telephone interviews with the respondents to obtain additional information about and clarification of some of the points in the written questionnaire. The survey findings that pertain to cross-industry applications software products are emphasized in this chapter.

The purpose of the questionnaire was to probe managers about their purchase plans, customization and product and vendor preferences, and their key technology goals as they relate to applications software products. INPUT was therefore able to test its previous conclusions and obtain additional insights about the marketplace.

Individuals completing the questionnaire were predominantly MIS directors, and systems development and programming managers.

The views of 56 IS managers are tabulated and the results analyzed. Although large development budgets persist, spending on packaged applications software products is healthy. Cross-industry products and products with little or no need for customization are generally preferred.

The other two cross-industry delivery modes—turnkey systems and processing services—are not included in the survey. A brief discussion of each, however, is included in this chapter in sections H and I.

A

Demographics

Exhibits III-1 and III-2 show the distribution, by vertical sector, and revenues of the corporations that participated in the survey.

EXHIBIT III-1

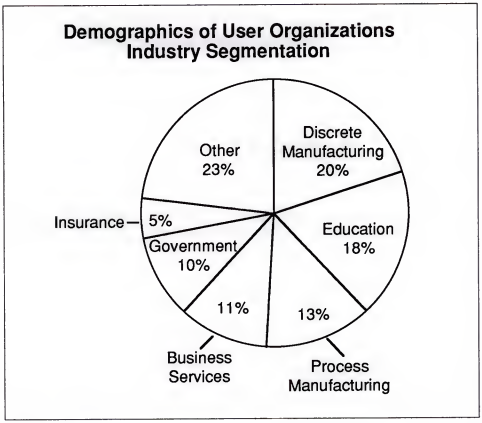
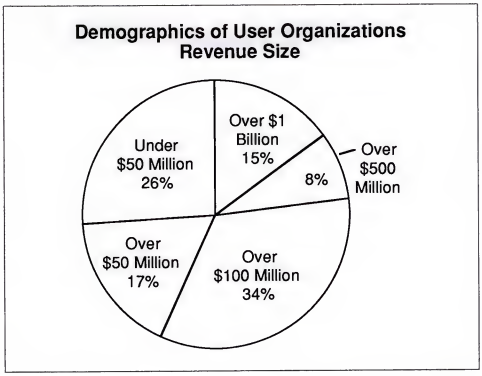


EXHIBIT III-2



- The mail survey included all industry segments. Industries with the greatest representation are discrete manufacturing (20%), education (18%), and process manufacturing (13%). The largest sectors within the "other" category—each consisting of about 5% of the survey sample—are transportation, retail distribution, and banking & finance.

- Fifteen percent of respondents have revenues over $1 billion; about 35% of the companies have revenues between $100 million and $500 million; and 26% have under $50 million in revenues.

B

Applications Software Products Purchase Plans

Respondents were asked questions about overall budget size, cross-industry and industry-specific product spending, spending by platform size, and spending for new versus existing applications software products.

1. Budget Size

Exhibit III-3 shows the distribution of applications software products budgets.

EXHIBIT III-3

Applications Software Products Budget

Budget Size	Percent of Respondents
Over $1 million	2
Over $500,000	6
Over $250,000	13
Over $100,000	27
Under $100,000	52

- On average, the applications software products budget for 1991 is $291,000.

- The average budget will grow to $360,000 in 1992, which represents a healthy 24% increase.

- The growth in expenditures from 1991 to 1992 is higher than INPUT expected. The weak economy does not appear to have a negative impact on applications software products expenditures for this survey

sample. In fact, when questioned further, respondents indicated the selective installation of new applications software products—including downsized solutions—is strongly viewed as a means to minimize corporate costs and improve productivity. Corporate restructuring through downsizing or acquisition also creates a need for new application solutions. Thus an economic slowdown enhances rather than inhibits applications software products expenditures.

- Respondents were asked to indicate whether or not these amounts encompass all applications software packages purchased/licensed for their entire organizations. If not, they were asked what percentage of total purchases they estimate the amounts to be. Respondents indicated that the figures given were about 70% to 80% of the total for their entire organization. The actual average budget for 1991 could therefore conceivably be in the $350,000-$400,000 range, growing to $430,000 to $500,000 in 1992.

2. Cross-Industry versus Industry-Specific

Respondents were asked to estimate the percentage of budget spent on cross-industry applications and industry-specific applications software products. In order to ensure accurate responses, INPUT's definitions of cross-industry and industry-specific applications software products were included in the questionnaire as follows:

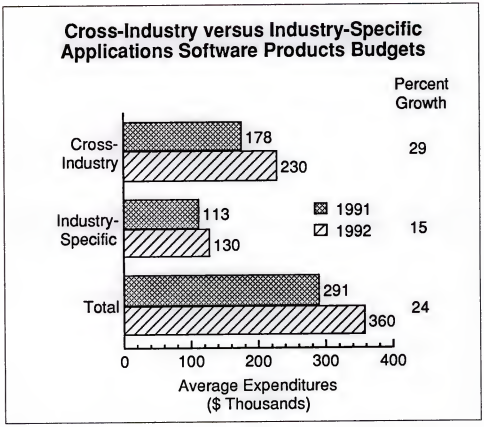
- Cross-industry—Software products that perform a specific function applicable to a wide range of industry sectors. Examples are accounting, financial modeling, human resources, payroll, word processing, and spreadsheets.

- Industry-specific—Software products that perform functions related to solving needs unique to a specific vertical industry and sold to that industry only. Examples are portfolio management, MRPII, and medical record keeping.

- Data base management systems (DBMSs), graphical user interfaces such as Windows, and applications development tools including CASE tools, are not included as applications software products. Also excluded are processing services and network services.

Exhibit III-4 shows the respondents' average 1991 and 1992 budgets broken out by these two categories.

EXHIBIT III-4



- Expenditures on cross-industry software not only represent a much higher percentage of the budget than industry-specific software, but growth for cross-industry software for 1992 is twice as high as for industry-specific software.

- This split—61% for cross-industry and 39% for industry-specific—differs from INPUT's base total expenditures and forecast presented in Chapter 5. INPUT believes the split between cross-industry and industry-specific software is closer to 50/50, based not only on interviews with users but also on interviews with vendors.

- The bias towards cross-industry software could be due to three large respondent corporations whose expenditures were far larger than average—in the million-dollar range—and that indicated 100% of expenditures were for cross-industry products.

- Respondents with small or no industry-specific purchases had these comments:

  - They do not want to be locked into a specific solution for years; they are particularly reluctant to purchase industry-specific solutions due to all the change underway in their industries as well as in the computer hardware and software industries.

- Their needs are too specialized for industry-specific software, and they therefore favor in-house development of company-specific applications.

- They want control over their software and want to ensure it can interoperate with what is already installed.

- The selection of applications software products for their type of hardware is meager.

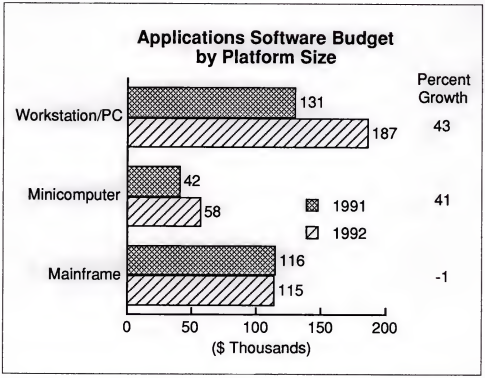
- Too much customization would be required, which would make the software hard to maintain.

3. Expenditures by Platform Size

Respondents were asked to estimate the percentage split of the combined cross-industry and industry-specific budget by platform size.

- As shown in Exhibit III-5, expenditures for applications software products that run on workstations and personal computers represent the largest portion (45%) of the budget; it is also the portion that is growing the fastest, at a 43% growth rate.

EXHIBIT III-5



- Expenditures on minicomputer-based products represent the smallest portion (14%) of the budget, these expenditures will increase at almost the same rate as expenditures for workstation/PC-based products in 1992.

- Expenditures on mainframe-based applications software products, on the other hand, are declining slightly.

Respondents were then asked if the budget split by platform size is different for cross-industry and industry-specific applications software products. The responses are shown in Exhibit III-6.

EXHIBIT III-6

1991 Applications Software Products Budget by Cross-Industry/Industry-Specific and Platform Size

Platform	Percent of Respondents	
	Cross-Industry	Industry-Specific
Mainframe	42	36
Minicomputer	14	21
Workstation/PC	44	43
Total	100	100

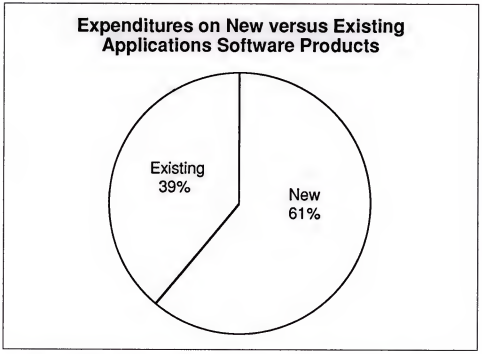
- For the survey sample as a whole, the only real distinction is that a smaller proportion of cross-industry software is purchased for minicomputers.

- For respondents in total, the proportion of cross-industry and industry-specific software running on workstations and personal computers is essentially the same.

4. New versus Existing

Respondents were asked what percentage of the total applications software products budget is spent on new applications software products packages versus maintenance and annual license fees for existing software. On average, 61% of their total 1991 budgets are for purchase of new applications software products, and the remainder is for maintenance and annual license fees, as shown in Exhibit III-7. The percentage split is about the same for 1992.

EXHIBIT III-7



- The percentage spent on new purchases is noticeably higher than INPUT expected. Comparable INPUT data from other research indicates this percentage to be more in the range of 25% to 30% spent on new applications software products and 70% to 75% spent on maintenance/licensing fees.

- Reasons for the seemingly high expenditures on new packages could be the continued shift towards PC spending and the significant number of small companies in the survey sample. Smaller companies are more likely to buy lower cost software for which maintenance costs are less significant.

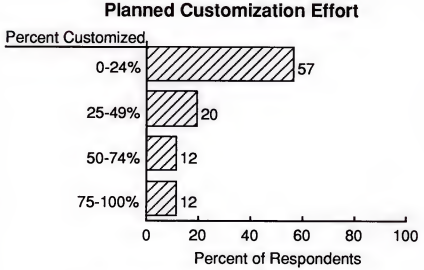
- Eighty percent of respondents indicated that the split between new versus maintenance/annual license fees was the same for cross-industry and industry-specific software. For those who indicated a difference, slightly more of the budget for new software goes to cross-industry applications software products; spending on maintenance and annual license fees is two times higher for cross-industry products than for industry-specific applications software products.

C

Planned Customization Effort

Exhibit III-8 presents the results for the question "Of all new applications software product purchases, what percentage of packages will you modify or customize?" No distinction is made between cross-industry and industry-specific customization efforts.

EXHIBIT III-8



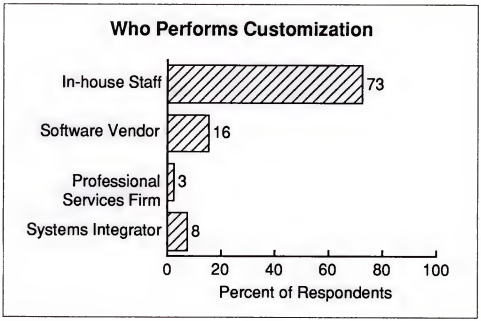
Note: Total may not add to 100% due to rounding.

- The majority of respondents will customize 25% or less of the products they purchase; only 12% of respondents will customize 75% or more of their applications software products. The average amount of customization is somewhere between 20% to 30%.

- Discussions with vendors—of both cross-industry and industry-specific software—reveal that vendors are increasing the customizability of their products and expanding their customization toolsets. Nonetheless, given the responses to several of the other questions asked in this survey, users do not want to have to customize, and they favor products that don't require customization. In fact, as discussed in Section E below, whether or not a vendor offers software that is easy to customize is only a moderately important vendor selection criterion.

- As shown in Exhibit III-9, of the customization that is performed, most is done in house; only 25% is done by outside service vendors, including applications software products firms. INPUT expects the amount of customization performed by external service providers to increase.

EXHIBIT III-9



D

Total Applications Development Plans

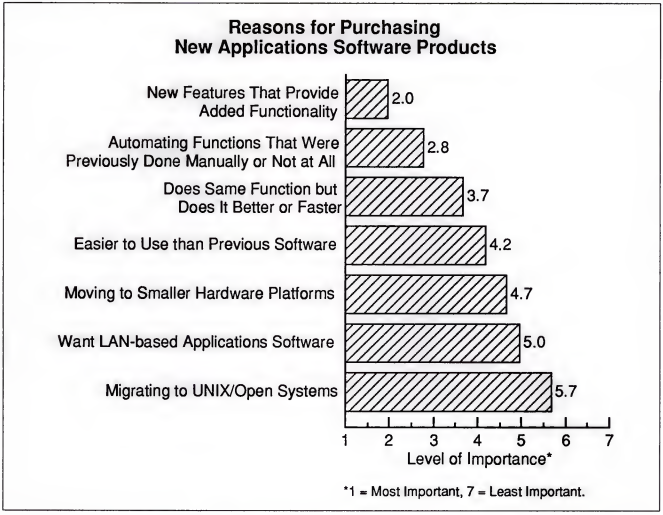
- The average applications development budget for 1991 is $1.3 million, over four times greater than what is spent on packaged solutions. Therefore, even though purchasing software is on the increase, a great deal of applications development is still taking place.
- This budget is predominantly used for industry- and company-specific software rather than for cross-industry software development.
- Overall, 52% of the budget is for enhancement/maintenance of existing systems, and 48% is for development of new systems.
  - Respondents ranged from a process manufacturer that purchases all of its applications software products, to a specialized business services firm that develops essentially all of its company-specific applications software internally. The percentage split between enhancement and development may be dependent on the vertical market and the degree of specificity needed in that market.
  - INPUT research conducted in late 1990 indicates that the percentage split between enhancement/maintenance and new development is 67% and 33%, respectively. Therefore, the actual split is about 60/40.
- Of the total applications development budget an average of 63% is spent on internal development and 37% is spent on contracted professional services. Three respondents indicated greater than 70% of their total budgets is spent on contracted services.

E

Product and Vendor Preferences

Respondents were asked to rank, in order of significance, seven specific reasons for purchasing new applications software products; one represents the most significant reason and seven represents the least significant reason. Therefore, a ranking of four indicates average significance within this set of criteria. These preferences apply to both cross-industry and industry-specific products. The results are presented in Exhibit III-10.

EXHIBIT III-10



- No single criterion ranked number one, indicating lack of consensus about what is the single most important product selection criterion.
- The existence of new features is the most significant reason to purchase new applications software products and was rated 2.0 on average. For respondents, new features are:
  - New functions that were not previously available and that they do not have expertise to develop in house
  - Functions that decrease the number of transactions necessary
  - Portable across hardware platforms

- Expandable—they meet needs as the company grows
- Capable of interfacing to other application solutions

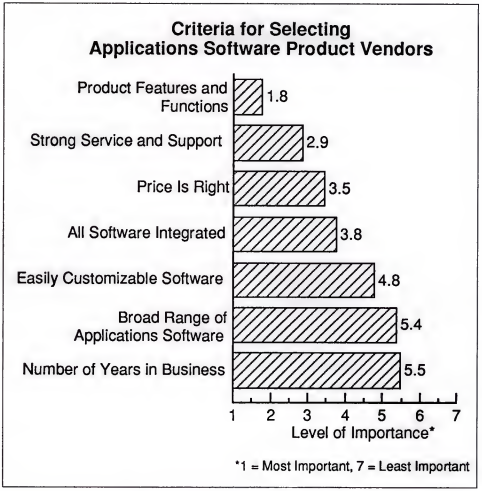
- Respondents ranked the automation of functions previously done manually as second in importance.

- The move towards smaller hardware platforms and the desire for LAN-based applications software products ranked fifth and sixth out of seven criteria. This is consistent with the relatively infrequent mention of downsizing and networking as key technology goals—23% and 27% of the respondents, respectively, mentioned these goals (see Section F below).

- UNIX/open systems ranks last as a reason to purchase new applications software products.

Respondents were also asked to rank each of a series of criteria in selecting an applications software products vendor, where one is the most significant/important reason and seven is the least significant/important reason. The answers apply to both cross-industry and industry-specific software. The results are shown in Exhibit III-11.

EXHIBIT III-11



- The most important criterion in selecting an applications software products vendor is product features and functions, which is consistent with findings about reasons for purchasing new products.

- Users are willing to pay more not only for features/functions but also for strong service and support capabilities.

- It is interesting to note that integrated software is about in the middle (3.8) in terms of importance in selecting a vendor. This finding implies that for a product with new/better features and/or a vendor with strong service and support, users are willing to tackle integration themselves or hire someone to do it.

- For this survey sample, easily customizable software ranked only a 4.8 in significance. This ranking implies that users do not customize purchased software to a large degree. It is also consistent with findings that, on average, users customize only between 20% and 30% of the applications software products they purchase. Given discussions with vendors, INPUT expected this ranking to be higher. Vendors are adding customization capabilities in hopes of expanding their market reach.

- Whether a single vendor offers a broad range of applications software products is of less than average importance (5.4) as a vendor selection criteria. Clearly users want to be able to choose from a variety of vendors; one-stop shopping for applications software products is not of critical importance.

- Number of years in business is ranked last as a vendor selection criteria.

These findings strongly suggest that there is still room in the marketplace not only for new product features/functions, but also for new vendors.

F

Key Technology Goals

Respondents were asked to list their three most significant technology goals for the next several years as they relate to applications software products—both cross-industry and industry-specific. Similar goals are grouped into ten categories. Exhibit III-12 lists these categories and indicates the number of goals mentioned within each category.

- No category of goals was mentioned by more than 27% of respondents, indicating lack of consensus about technology directions over the next several years.

- Lower costs and improvement of overall productivity in a general sense is tied for first place as a main goal; it is assumed that this is the goal of all respondents, although not all of them mentioned it as a technology goal.

EXHIBIT III-12

Key Technology Goals

Category of Goals	Number of Responses
Lower costs, improve overall productivity	15
Install new/updated applications software	15
LANs/networking	15
Integration	13
Downsize hardware/software	13
Data accessibility	12
Quick, easy applications development	11
Ease of use	9
Open systems/UNIX	9
Other	4

- The two technology goals that were mentioned most frequently are new or updated applications software and LANs/networking. Presumably they are viewed as key ways to lower costs and improve productivity. Each of these categories of goals was mentioned by 27% of the survey sample.

- Although these findings cannot be used to forecast types of products that will be purchased, the following applications software product purchases/installations were mentioned: personnel/payroll/benefits, inventory management, financial systems, new banking applications, purchase order processing, office automation, warehouse management, process measurement, purchase request tracking, and point-of-sale systems.

- The technology goals of LANs/networking, integration, downsizing, and data accessibility are related to one another. All enable users to access and share data and/or applications software products and resources more easily. About 45% of all mentions encompass these four areas.

- It is interesting to note that these goals, in fact, are of lower importance than faster/easier applications development. Quick/easy applications development is still among the top ten technology goals, but it is in the bottom third of the top ten. According to INPUT research conducted in 1990, some of the approaches being used to control applications development resource consumption are limiting resource allocation, purchasing packaged software products, re-engineering applications, and taking on maintenance-only functions.

- Three respondents mentioned EDI as a key technology goal.

- A variety of integration goals were mentioned; they included the following:

  - Implementing enterprise model
  - Integrating data bases
  - Operating over multiple platforms
  - Integrating applications
  - Linking currently incompatible application systems

- Downsizing goals—mentioned by 23% of respondents—are evenly split between offloading the mainframe to minicomputers, workstations, PCs and PC-LAN configurations, and implementing client-server technology. Offloading the minicomputer was not mentioned.

- Data accessibility goals—mentioned by 23% of respondents—include more timely access to data, implementing EISs (executive information systems), improved ease of uploading to or downloading from the mainframe, easy-to-use reporting and query facilities, and implementing a DBMS.

- Faster/easier applications development was mentioned as a key technolgy goal by 16% of respondents. Examples of the kinds of goals related to development are the following:

  - Implementing CASE (several mentions)
  - Reducing need for customization
  - Efficient development procedure
  - Object-oriented DBMS

- Open systems/UNIX was mentioned as a technology goal by 16% of respondents, the same percentage as for improved applications development.

G

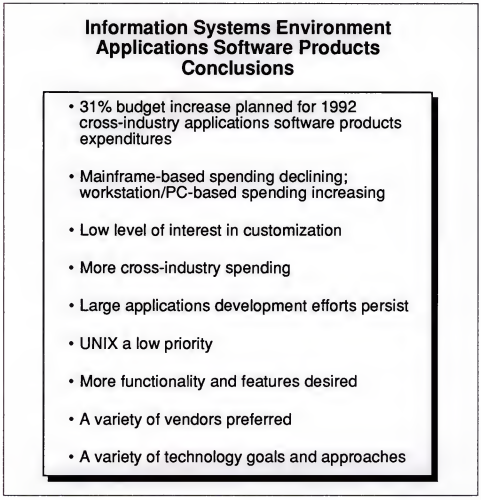
Survey Conclusions

The only distinctions found between the IS environment for cross-industry and industry-specific software are the following:

- The budget for cross-industry software is larger and growing the fastest
- Compared to industry-specific software, a smaller proportion of cross-industry software is purchased for minicomputers.

These distinctions are discussed within the context of the overall survey conclusions, which are outlined in Exhibit III-13.

EXHIBIT III-13



On average, planned expenditures for cross-industry applications software products in 1992 are 31% higher than for 1991. This is twice the expected growth for industry-specific software expenditures and is higher than INPUT expected. INPUT's five-year forecast, presented in Chapter IV - Information Services Market, considers the survey results as well as other factors and research data.

A weak economy does not appear to be dampening expenditure plans for either cross-industry or industry-specific software expenditures; on the contrary it may promote expenditures as users look to applications software products as a way to reduce costs and improve productivity within their corporations. Purchases of applications software products are being closely scrutinized; products that obviously improve productivity will be purchased and other products that are nice to have but not necessary will suffer.

Spending on applications software products for workstations and personal computers is growing the fastest; spending on mainframe-based products shows a decline. This pattern is the opposite of that shown in research on systems software products: for systems software products, mainframe-based expenditures are still the strongest. This suggests that the mainframe is viable as a data repository for offloaded or downsized applications.

The respondents to the survey spend more on cross-industry applications software products—61% of the total budget, and growing—than on industry-specific products. The only distinction in spending by platform size is that a slightly lower proportion of minicomputer software expenditures is for cross-industry products.

Several respondents expressed the concern that industry-specific software isn't specific enough for their needs, and they don't want to have to customize the product, in part because customized products are harder to maintain. Another comment in favor of internal development as opposed to purchasing industry-specific software is the desire to maintain control over corporate-specific solutions.

Given some of these concerns, large applications development efforts persist in spite of vendors' efforts to make their products easier to customize. A dilemma for both cross-industry and industry-specific vendors is what it will take to get users to purchase rather than develop their software; if they make their products more specific the potential market size is limited. Vendors are responding to this challenge not only by adding customization and flexibility to their products, but also by providing services in support of users' development efforts. It would appear that the latter tactic will provide the most immediate returns.

On the other hand, survey respondents expressed keen interest in products with new or better features and functions as well as products that can automate previously manual tasks. They want more specific products—that ideally require little or no customization—yet the profit structure of the industry may not provide much room for vendors to comply.

As vendor selection criteria, integration of a vendors' applications software products and number of years in business are not high in priority. This implies that being an established vendor is not necessarily a strong

advantage in today's marketplace and that room exists for new market entrants. This may also imply added interest in turnkey vendors and VARs that can add specific functionality and service to a smaller specialized market.

Respondents indicated a wide variety of technology goals and approaches as they begin to shift with shifting technology foundations. Foremost in their minds is lowering costs and improving corporate productivity. As expected, UNIX is a low priority; other frameworks such as SAA and NAS were not mentioned as (short-term) technology goals.

H

Turnkey Systems

Although the turnkey systems delivery mode was not included in this survey, it is included in this report as a cross-industry application solution.

Generally speaking, turnkey systems—encompassing a total solution of software, hardware, and a service aspect—are purchased for the fundamental purpose of running a business. In other words, the applications are foremost industry-specific production level applications. For example, a law office will purchase a complete industry-specific accounting package that includes professional services billing, client disbursements, and client cost-tracking systems, and this package will be the mainstay of its business. A cross-industry human resources product will be a secondary consideration, the purchase decision typically being made after the turnkey solution has already been made.

Thus—in contrast to applications software products purchasing patterns indicated by the survey results—the emphasis on software for turnkey systems is industry-specific rather than cross-industry. Cross-industry applications software products are generally purchased as an add-on after the turnkey solution has already been purchased. In this case, it becomes an applications software product purchase rather than a turnkey system purchase.

I

Processing Services

According to separate market research findings, processing services will continue to exhibit some growth during the next five years, but growth will be selective, favoring certain markets and types of vendors. Processing services exhibiting the highest growth will be those that can be performed more economically by an outside services firms or that organizations would like to offload because the procedures, updates, operational tasks, and problem resolution seem to be a burden.

- The most common cross-industry processing service—payroll—may not cost less to run at a vendor's site, but clients feel that it is advantageous to have updates to tax tables, handling of checks, withholding, and other payroll-related functions handled by an outside services firm.

- The quality of work is also a vital consideration for users. Providing the right applications software products and offering a competitive price will not offset late work, errors, or an inability to be responsive to inquiries and problems.

- End users are having more impact on the selection and use of information services, and they question why processing services vendors are not always responsive to opportunities such as:

  - Seeking additional opportunities for processing work with existing customers

  - Adding new applications or functions, such as large-scale financial modeling or expert systems, to their computing capabilities, which would be useful to end users with workstation/PC resources

  - Helping to move work in-house or to outsource in-house work

Since there is more exploration of alternatives on the part of end users, processing services vendors must spend more time learning about and responding to end users' ideas. According to respondents, the use of processing services will rise over the next several years, but there will be more volatility in the market than previously experienced. Vendors will have to be more proactive in selling new accounts and holding on to existing ones.

Information Services Market

Information Services Market

This chapter presents user expenditure forecasts for accounting cross-industry application solutions by delivery mode. Assumptions driving the forecasts are provided. Information in this chapter draws on the trends, events, and issues presented in Chapter II, the user environment discussed in Chapter III, and the competitive environment discussed in Chapter V.

Note that these forecasts do not include industry-specific application solutions. The markets for these types of information services are presented in industry-specific Market Analysis Program reports rather the cross-industry reports.

Section A, Overview, discusses the overall size and growth rate of user expenditures for accounting cross-industry application solutions. Section B, Delivery Mode Analysis, breaks out this same forecast into INPUT's delivery modes. The delivery modes that are applicable to cross-industry sectors are the following:

- Applications Software Products
- Transaction Processing Services
- Turnkey Systems

The following five delivery modes are not included in this cross-industry report, as they are not considered application solutions.

- Network Services
- System Software
- Systems Integration
- Systems Operations
- Professional Services

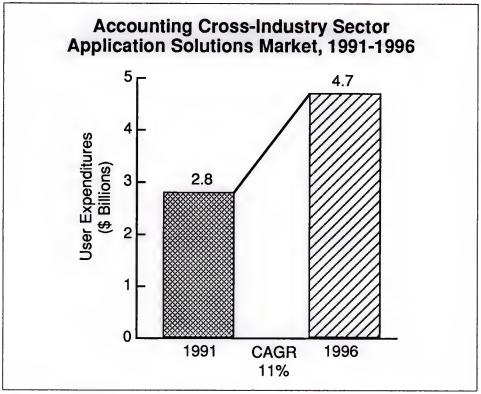
In addition, utility processing services and other processing services are excluded. These seven information services are discussed in several of INPUT's delivery mode reports.

A

Overview

Accounting is the largest cross-industry sector, representing some 20% of the total of all expenditures on cross-industry information services. Its size and forecasted growth are shown in Exhibit IV-1.

EXHIBIT IV-1



Well over half of the expenditures in this cross-industry sector are for applications software products. In-house development of accounting applications software was a more viable option in the early 1980s, and previous to the 1980s, than it is today. Now developing a full-fledged accounting solution from the ground up is prohibitively expensive to do in-house, and the issue has become whether to purchase a cross-industry package or an industry-specific package.

Exhibit IV-2 lists overall driving forces impacting the demand for accounting cross-industry information services during the 1991-1996 timeframe.

Many vertical-industry accounting packages exist that are targeted for one—and only one—industry sector. An example is an hotel accounting software solution that includes functions for front desk reservations, credit card acceptance, settlement, authorization, and back-office bookkeeping. Industry-specific accounting packages will continue to be used, especially where there is much—or unusual—regulation such as in defense contracting and nonprofit organizations. Banking is another area requiring industry-specific accounting solutions; strict regulations and specific operational requirements force most institutions to purchase specialized industry-specific software.

EXHIBIT IV-2

Accounting Information Services Driving Forces

- Industry-specific versus cross-industry
- General dissatisfaction with existing solutions
- Gradual shift to new products/technologies

In response to users' desire for a customized or industry-specific solution, some vendors have developed industry-specific extensions or vertical "hooks" in their cross-industry products, thereby addressing two market needs with a single product. Applications software vendors are also expanding their customization and integration capabilities.

INPUT believes the need for specificity and customization of accounting applications software products will increase and that this could potentially be an inhibitor to expansion of user expenditures for accounting cross-industry products.

Many of the accounting packages developed in house, however cumbersome and inflexible, are still in use. Although users are well aware of the shortcomings of these packages, they are often reluctant to start over again with a new package and, instead, continue to build upon the package developed in house.

Users need new accounting solutions, but they will be slow to buy them. For years, people have been wary of changing what is often considered the foundation of their business systems. Because accounting is such a pervasive function, changing an accounting system impacts virtually all aspects of a corporation's information environment.

Faced with business and technology trends—such as worldwide competition, mergers and acquisitions, decentralization, and evolving information architectures—companies will have to purchase new software. Companies that are rapidly changing competitive environments and markets, or that are undergoing restructuring, are more likely to update accounting systems. To the extent that products are available, companies that are undergoing international expansion are also most likely to purchase new multinational accounting applications software products.

The transition to new accounting solutions will be slow, not only due to the conservative attitude towards the accounting function, but also the fact that vendors are just now beginning to provide new technology-based

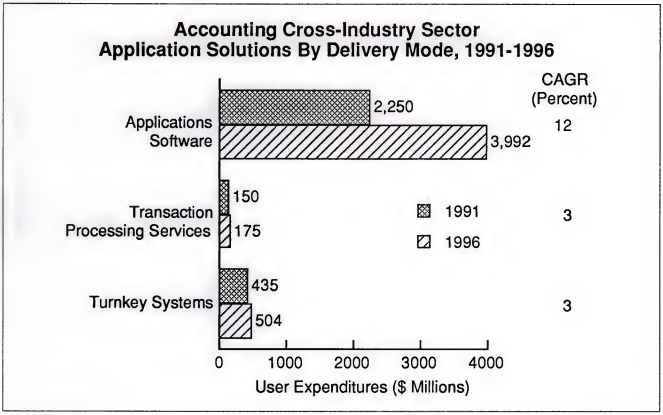
solutions. What will cause users to migrate—and promote new growth in user expenditures—from the supply side is not only obvious enhancements of features and cost savings, but also simplicity of migrating to a new technology-based solution. INPUT believes that well-conceived migration strategies are a key to vendor success throughout the 1990s.

B

Delivery Mode Analysis

As shown in Exhibit IV-3, of the three delivery modes considered within the accounting cross-industry sector, applications software products is not only the largest delivery mode but will exhibit the healthiest five-year growth rate, even given the market challenges described above. In real terms, user expenditures on accounting cross-industry processing services will decline as will expenditures on turnkey systems.

EXHIBIT IV-3



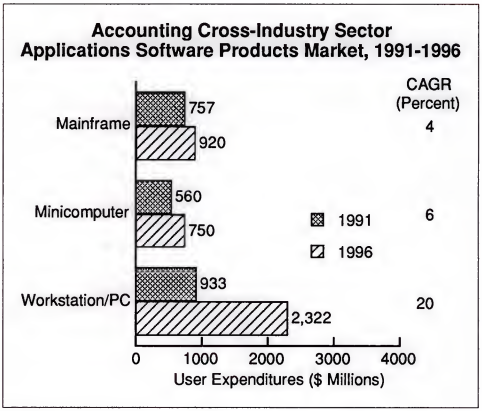
Below is a discussion of each of the individual delivery mode forecasts.

1. Applications Software Products

The market for accounting cross-industry applications software products will grow from $2,250 million to $3,992 million by 1996, at a modest 12% CAGR. This growth rate is slightly lower than the growth rate for applications software products as a whole and reflects that the migration to new technologies—from the vendor and the customer perspective—could be particularly challenging for accounting products.

Exhibit IV-4 shows growth expected for accounting cross-industry applications software products by platform size.

EXHIBIT IV-4



User expenditures on mainframe-based accounting packages are forecast to grow at about the rate of inflation from 1991 to 1996. Users are beginning to offload some accounting functions; most will remain as is, and some new DB2 versions will be added.

INPUT expects that over the long run much of the accounting function will be offloaded to client/server solutions. For many of these, a minicomputer, workstation, or PC, rather than the mainframe, will be the server. Because accounting is a pervasive function—one that several functions and levels/divisions of a corporation need to access—it is well suited to client-server solutions that will access relational and, eventually, distributed data bases.

Mid-sized businesses and divisions of large corporations continue to buy minicomputer-based accounting packages. Because users have made considerable investments in midrange hardware over the last three to four years, solid—albeit modest—growth is therefore still expected as vendors and users complete their product suites. Additionally, vendors are beginning to provide UNIX versions of accounting software that runs on minicomputers as well a workstations and personal computers.

The need for workstation- and PC-based software is increasingly driving the demand for applications software products. All sizes of companies will purchase standalone versions, PC LAN versions, and client-server versions, thereby continuing to expand the potential buyer base.

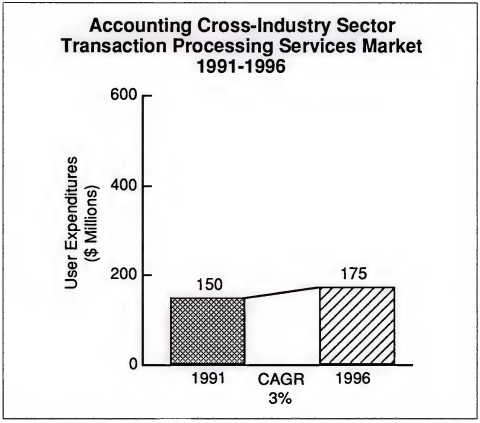
INPUT, however, has adjusted the forecast for workstation/PC-based applications software products. The new forecast is slightly down from last year's for the following reasons:

- The migration to new client-server solutions will be difficult for both vendors and users.
- More accounting applications software products are expected to be sold through the VAR/turnkey channel as industry specific, due to increasing importance of specificity and integration, and the lower cost of the hardware platforms on which they operate. This will detract from sales of cross-industry accounting products.

2. Processing Services

Exhibit IV-5 shows the expected expenditure level and growth in accounting cross-industry transaction processing services.

EXHIBIT IV-5



Accounting cross-industry processing services do not include tax processing services sold to accounting firms. Nor do they include payroll processing services (which are within human resources cross-industry sector), or processing services in support of banking and finance functions such as back-office banking, electronic funds transfer, and retail point-of-sale applications. There will continue to be a market for data entry of accounting data, such as from time cards, but this is also not considered to be cross-industry (or industry-specific) transaction processing services.

There are no processing services firms today that perform all aspects of the corporate accounting function. However, many of them do offer parts of it, such as the preparation of corporate income tax returns. (If they do not provide complete preparation, then they perform portions of it, such as gathering data to support what an accounting firm/CPA will do.) Another aspect of accounting processing service is the consolidation of financial statements for corporations that have multiple divisions operating independently or internationally.

However, accounting processing services are a small and declining portion of the whole processing services industry; for processing services firms, it has become more a question of holding onto the existing customer base rather than building new clientele. For example, Bank of America Business Services, although it provides general ledger and accounts receivable and payables services, does not actively sell or promote them.

The reasons accounting processing services—cross-industry or otherwise—have become such a small proportion of the total industry are the following:

- Companies are less inclined to turn over their operating books to an outside services firm due to security concerns.

- Packaged applications software products that run on personal computers and workstations are available at relatively low cost, which makes it possible for small firms—let alone large firms—to do their own accounting. During the timesharing days, when computing environments were not affordable for many corporations, 20% to 25% of timesharing applications were accounting/financial. But now there is no contest between make versus buy, and almost all accounting application solutions have been brought in-house.

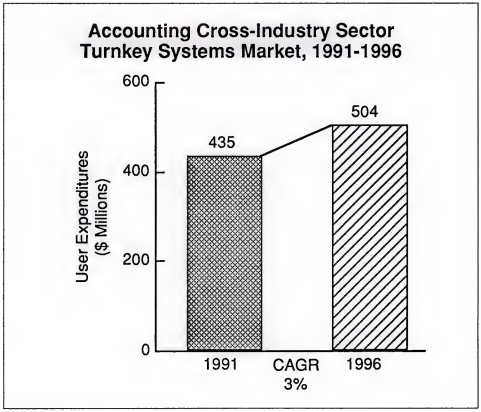
- Accounting as a function is more likely to be differentiated by vertical sector than some of the other cross-industry functions such as human resources or office automation or engineering/scientific applications; vertical specialization is too complicated and costly for most processing services firms to undertake.

The only real source of new expenditures for accounting processing services is companies that are downloading and that need transition management of offloaded applications, which may include accounting applications software.

3. Turnkey Systems

Exhibit IV-6 shows growth expected in cross-industry accounting turnkey systems.

EXHIBIT IV-6



The original accounting turnkey systems were products developed by accounting processing services vendors that—because the markets for their services were being eroded by growing availability of packaged software—provided for their customers an in-house alternative in the form of minicomputer-based turnkey systems. Although there are few new sales of these systems, many were installed and are still being maintained.

Today a great deal of effort is underway to integrate cross-industry applications with vertical industry-specific applications, either by developing specialized turnkey accounting solutions for target markets, or by customizing a standard accounting package. As accounting is the backbone application for businesses, VARs and turnkey systems vendors often start with an accounting package and integrate it with industry-specific operational solutions.

Turnkey vendors and VARs sell predominantly to small and mid-sized businesses—e.g., businesses under $25 million in sales. They represent an affordable alternative for these companies' to what larger companies get from separate hardware vendors, software vendors and systems integrators. However, they are for the most part verticalized packages.

Therefore, although a large market exists for accounting applications software products, these products are increasingly being tied to additional vertical solutions in a turnkey approach, transforming them into industry-specific accounting packages.

Competitive Environment

Competitive Environment

This section discusses the competitive environment for information services within the accounting cross-industry sector. Key trends and vendor reactions to these trends are discussed. Leading vendors are identified and representative vendors are profiled.

A

Vendor Characteristics and Trends

Key trends are outlined in Exhibit V-1. Although these trends have been apparent over the last several years, they are more pronounced now.

EXHIBIT V-1

Accounting Cross-Industry Sector
Vendor/Product Trends

- New DB2 versions
- Downsizing, including client-server implementations
- Integration
- Customization
- UNIX
- International accounting capabilities

Vendors are also continuing their move towards compliance with frameworks such as SAA and NAS, but these efforts are not at the forefront of current industry events.

Leading vendors in this cross-industry sector are likely also to participate in the human resources cross-industry sector. For example, D&B Software, Computer Associates, Integral, Oracle, and Ross all compete in both sectors. Overall vendor trends and reactions are therefore similar, if not the same, for both cross-industry sectors. The major distinctions between the two are as follows:

- Accounting appears to have more DB2 implementations.
- Client-server products are showing up for accounting applications first.
- Integration is a more significant issue for accounting.
- UNIX is showing up sooner in accounting.
- Internationalized capabilities are more important for the accounting sector.

Each of the key trends outlined in Exhibit V-1 is discussed below, with emphasis on the uniqueness of the accounting cross-industry sector.

1. New DB2 Versions

Because accounting has traditionally been a centralized mainframe-based application, vendors selling in this sector follow IBM's lead. Thus DB2 implementations are still at the forefront of new product introductions.

- In 1990, D&B Software introduced two new DB2 versions of E and M series general ledgers.
- American Software has a DB2-based product under development.

The DB2 versions have been slow in coming because they require complete rewrites; some of the early versions were reportedly written hastily and were flawed. The fact that DB2 versions are still coming indicates that vendors believe that a significant portion of the accounting function will remain mainframe based.

2. Downsizing and Client-Server

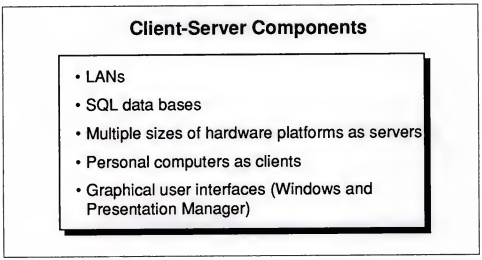
Even though accounting is the bastion of mainframes, downsized solutions from both traditional mainframe and minicomputer applications software products vendors who are covering all bases, as well as vendors that specialize in PC-based software, continue to be released. Among the latter are Armor Systems (profiled in Section C), Great Plains, Real World, Solomon, SBT, Makola, and Open Systems.

Various versions of client-server software products are under development and are beginning to emerge. Notable examples are the following:

- Ross Systems Series 1, which runs on both Ultrix and SCO UNIX, will be available this summer.
- D&B Software's development of an entirely new accounting product line based on OS/2 will be available in 1992.
- ORACLE Financials, based on ORACLE RDBMS, runs on a variety of vendors' platforms, from workstations to minicomputers.

Although varying versions of client-server products are being developed, common elements are outlined in Exhibit V-2 below:

EXHIBIT V-2



Although accounting applications are among the first to be ported to client-server configurations, as indicated earlier INPUT believes there is more user resistance to implementing accounting client-server products than some of the other more tangential applications such as engineering/scientific or even human resources applications. Vendors may therefore be disappointed in preliminary results from client-server products.

INPUT therefore believes effective vendor migration strategies will be of equal importance to the product offerings themselves. New product introductions will be accompanied by new (and attractive) pricing schemes, new distribution strategies, and strategies for migrating customers to the new product lines in as effortless a way as possible.

Pricing strategies are still on the drawing boards. Some of the pricing schemes being considered are the following:

- Offering client-server solutions as product upgrades to already installed systems and not charging existing clients extra for them

- Offering client-server as an add-on to an already installed solution
- For new customers, pricing according to number of users accessing the system rather than according to platform size

Users may be expecting downsized solutions to be lower in price because in many cases they will run on lower cost hardware platforms. Little evidence exists, however, that client-server implementations will offer less costly solutions; users will have to invest in new hardware, will need LAN integration and network management expertise, and will require new systems software to support client-server applications software products. Therefore, it is imperative that vendors position the new products as much more functionally attractive than existing installations.

Applications software products vendors will seek out third-party distribution channels for new client-server products as they formulate strategies to merge or phase out existing product lines and educate their sales forces about the new products.

3. Customization

Accounting systems are especially prone to customization because they need to incorporate rapid changes in product/services mix and pricing, as well as organizational changes. Customization is therefore critically important and is becoming even more important.

The reason for increased outsourcing of customization—and desire for specificity in the product to begin with—is the shortage of skilled software professionals and IS organizations' desire to trim costs. Customers are looking more to the vendor for support, and vendors are happy to oblige because of the slowdown in software products growth over the last several years. Once the product is customized by a vendor, the vendor may be contracted to maintain and customize as required.

4. Integration

The availability of downsized solutions brings with it a host of integration issues. Because accounting cuts across so may parts of a corporation, seamless integration is a more critical requirement than it is for other application solutions.

Vendors are placing increasing emphasis on integrated functions in the following ways:

- Ease of integrating accounting modules with one another
- Integration of accounting modules with other functions such as inventory control, purchasing, fixed assets, and human resources

Increasing emphasis on integration creates challenges for vendors whose product lines consist of many applications that have been acquired (rather than "homegrown") along the way, and for vendors that do not have a complete suite of accounting modules. The fact that D&B Software will be replacing its various separate product lines with a singular client-server implementation is an example of the importance vendors are ascribing to integration/the single product family.

In light of the importance of integration, INPUT foresees an increase in subcontracting activity of applications software products firms to systems integrators and to hardware vendors on whose platforms their products run.

5. UNIX

Compared to human resources applications software, users spend twice as much annually on accounting software running on minicomputers and over five times as much on accounting software running on workstations/PCs. Because this cross-industry sector is served by more minicomputer and workstation/based software products vendors, and is more steeped in smaller platforms, it is more likely to adopt UNIX.

Vendors actively supporting UNIX are minicomputer and PC-based applications software firms.

- Armor Systems, among the top PC-based accounting applications software vendors, offers Xenix and SCO UNIX products.
- Lawson has ported its financial software to the IBM AIX operating system and recently announced Lawson Accounting System software for Digital Equipment's Ultrix operating system.
- MCBA's CLASSIC software runs on Sun's SPARC family of computers.
- Ross Systems' Series 1 runs on Ultrix, SCO UNIX, and VMS.

Vendors that have traditionally been IBM shops, however, generally are not yet incorporating UNIX into their product development efforts.

- Integral and D&B (Both IBM shops) are watching UNIX carefully but are not doing anything yet.
- American Software has indicated no plans for UNIX applications software products development.

6. International Accounting Packages

Truly functional international accounting packages, and increasing user interest in them, are just beginning to emerge. The ability to handle foreign currencies is becoming more important. Part of the challenge to vendors is to distribute extra large files and handle file management effectively so that customers can fully integrate large asset records, vendor files, and employee records, and process high volumes.

- Systems Union's SunAccount combines a ledger accounting and reporting package with automatic translation and consolidation of multi-currency accounts into a single base currency.
- SAP sells an integrated and global accounting system, R/2, that also handles other business functions, including inventory control, production planning, and order processing.
- Oracle Financials is positioned as an international accounting solution.

B

Leading and Emerging Vendors

Some of the results of the above trends are as follows:

- Acquisitions and merger activity will not be as pronounced as they were in the past due to awareness of the challenges involved in integrating disparate product lines.
- Small applications software products and turnkey systems vendors that cannot afford to rewrite software products for smaller hardware platforms, client-server architectures, or UNIX may switch to more of a professional services role—such as providing software development and software maintenance. They thereby exit the product side of the applications software products market. Or they may become distributors for independent software vendors' applications software products.
- New vendors may emerge. For example, PeopleSoft has recently announced a general ledger package. European-based companies—such as SAP (W. Germany), Systems Union (profiled below) and Coda (Leeds, England), are expected to sell international packages to U.S. multinational firms.

Exhibit V-3 is a listing of leading accounting cross-industry sector applications software products vendors.

The major processing services vendors are ADP, Litton Computer Services, and Control Data Business Management Services. However, accounting processing services represents less than 5% of these firms' revenues.

EXHIBIT V-3

Accounting Cross-Industry Sector
Leading and Emerging Applications
Software Products Vendors

Vendor	Mainframe	Minicomputer	Microcomputer
American Software	X		
Armor Systems			X
Collier Jackson		X	
Computer Associates		X	
D&B Software	X		X
Global Software	X		
Integral Systems	X		
J.D. Edwards		X	
MCBA, Inc.		X	X
Oracle		X	
Ross Systems Inc.		X	
Software 2000			X
Walker Interactive	X		

INPUT was unable to identify any large turnkey vendors selling accounting cross-industry solutions. Although a small percentage of turnkey systems are cross-industry, the vast majority are integrated with vertical packages and are therefore considered industry-specific.

C

Vendor Profiles

Applications software products vendors are profiled below. The companies INPUT has selected to profile exemplify the wide variety of approaches to the accounting cross-industry sector marketplace.

1. American Software, 470 East Paces Ferry Road, Atlanta, GA 30305 (404) 261-4381

American Software was originally a single-vendor, single-platform (IBM mainframe) applications software products vendor. Now, American Software's strategy is the following:

- Offer software solutions across multiple hardware platforms (still IBM)

- Grow the professional services part of business

American Software envisions its clients using its products on a global network of mixed AS/400, ES/370, and microcomputer platforms performing distributed applications processing, connected and managed by American Software technology under ADDM. American Software also has a DB2 accounting package under development.

Over the last six months, American Software has expanded its data center operations and has begun to provide systems operations services to its customers who are either in the process of downsizing and want a temporary place to put their mainframe software and data processing, or customers who have adopted an outsourcing philosophy.

The company is also doing systems integration work tying software applications to EDI, automated data collection, and computer-integrated manufacturing.

American Software has offered EDI capabilities in order processing and several other applications for about one year. In the development phase are EDI capabilities for the accounts receivable function and the ability to receive detailed transmission directly between trading partners.

Revenues from professional services in fiscal 1990 increased 65% over fiscal year 1989. Services now account for about 35% of revenues.

Fiscal 1991 (4/91) revenues are estimated to be $97 million. Sixteen percent of revenues now comes from outside the U.S., compared to 11% a year earlier.

2. Armor Systems, Inc., 324 Orlando Ave., Maitland, FL 32751, (407) 629-0753

Armor systems, a privately held company, provides microcomputer accounting software to all industries. Revenues are in the $10 million to $12 million range.

The company was founded in 1978 as a systems house, selling hardware and custom software. In 1983, Armor introduced its first modular accounting software product—Excalibur Series—for general applications.

Armor now offers 12 modules of integrated accounting software. Its recent activities are the following:

- Replacement of System/36 and /38 applications software products with Xenix and SCO UNIX-based products

- Development of a PC-LAN accounting product
- Enhancement of Screen Builder and Summit—customization features that change the appearance of screens and reports
- Development of additional programs to enhance the ability of its resellers to penetrate specific markets

3. Dun & Bradstreet Software, 3445 Peachtree Rd., N.E., Atlanta, GA 30362

Dun & Bradstreet Software (DBS), a company of The Dun & Bradstreet Corporation, was formed in March 1990 by the merger of Management Science America (MSA) and McCormack & Dodge (M&D). The combined company is the leading supplier of accounting applications running on IBM mainframes. D&B Software has lost sales as a result of the merger as customers wait to see how the product lines fare in the market.

Current accounting product offerings include the following:

- Expert Series Accounts Payable, Accounts Receivable, and Budgetary Control software for mainframes
- Millennium financial/accounting software products for IBM mainframes and DEC VAX systems (formerly marketed by McCormack & Dodge)
- Plus Series for IBM System/38 and AS/400 systems, which includes accounts payable, general ledger, and a micro-to-minicomputer link
- BrightView Series for IBM mainframes and 9370 systems, which includes general ledger, fixed assets accounting, projects tracking, and other financial and accounting systems as well as a payroll/personnel system
- Satellite Series product line, including accounts payable and general ledger for processing data on microcomputers for mainframe consolidation
- Plus line of financial/accounting products for IBM System/36, /38, and AS/400

In 1990 DBS introduced two new DB2 versions of E series and M series general ledgers, and a VSAM version of general ledger. It also enhanced its accounting management reporting capabilities with more flexible reporting structures.

DBS also has a Systems Development Tool that is a fourth-generation application development tool for designing and executing on-line applications.

DBS is concentrating on a client-server strategy. DBS is initially targeting analysts/information workers with applications software products likely to have high value to those involved in analytical processes or decision making. It will release a line of client-server financial products first; initial E and M series general ledger and accounts receivable offerings will happen late this year or early in 1992.

Components of the client-server strategy include relational SQL-based technology, graphical user interfaces—initially using Microsoft Windows 3.0—and groupware-enabled functionality. The applications will run on OS/2 LANs and perhaps other platforms as well. DBS is actively exploring using other client platforms.

DBS is transitioning from being a predominantly mainframe-based applications software products vendor to a provider of client-server solutions based on the OS/2 platform and LANs. The challenge for DBS is making this transition in a timely manner without losing its existing customer base. As it moves forward, DBS will need to explain how it intends to merge its multiple product lines and how it will migrate its existing customers to its next generation of products.

The company's estimated fiscal 1990 revenues are $539 million.

4. Integral Systems, 2185 North California Boulevard, Walnut Creek, CA 94596-9496, (415) 939-3900

Integral initially entered the accounting software business with its acquisition four years ago of Sysgen, which provided a full range of accounting as well as human resources products. In August 1989, Integral Systems merged with Data Design, a company specializing in financial management software for IBM mainframes and workstations. Revenues from accounting and financial management software products account for about 40% of total revenues.

In 1990, Integral completed its acquisition of Wright Systems, an AS/400 software vendor with manufacturing and distribution software.

Integral's strategy is as follows:

- Continue its SAA direction offering a complete portfolio of financial and human resources management software across all of IBM's SAA-compliant platforms

- Expand the number of mainframe-based products
- Continue to modernize and broaden its AS/400 product line

Integral expects its AS/400 software products to account for more than the current 20% of revenues, whereas mainframe-based software products will account for a smaller portion of revenues. Company revenues from services are also expected to take up the slack in mainframe software sales.

In response to market need for integrated products, Integral is now positioning itself as a "core business" company rather than as just an accounting or human resources applications software products vendor. During 1990, Integral merged its divisions so that all key product areas report to a single product development vice president. Likewise, all products are now handled by a single sales and service organization.

INPUT estimates revenues for Integral Systems at $68 million for calendar 1990, up about 4% over calendar 1989. The Wright acquisition added approximately $10 million to Integral's revenues of $68 million.

5. Oracle Corp., 275 Shoreline Drive, Redwood City, CA 94065, (415) 506-7000

Over the last several years Oracle's revenues have grown to such a degree that it is now in the big league of software vendors—along with the likes of IBM and Computer Associates—with revenues close to $1 billion. But during this last year, Oracle's reputation has suffered due to aggressive sales tactics, product bugs, and unconventional accounting practices, not to mention a slowdown in demand for its flagship product—ORACLE RDBMS. It has recently received sorely needed funding from Nippon Steel in Japan.

During 1988 and 1989, Oracle expanded its offerings to include financial, manufacturing, and office automation applications software products and systems integration services. In February 1990, it introduced Oracle Personnel—originally developed and marketed in Europe—to the U.S. marketplace.

What differentiates Oracle from other software products vendors are its multivendor and multiplatform capabilities and the degree of integration between Oracle FINANCIALS and its other applications software products. Oracle's products run on 27 different platforms. Oracle's use of its own CASE tools, and of course its use of its own ORACLE RDBMS, are also differentiators. Customers can do their own development around Oracle's products using Oracle CASE.

Oracle is striving hard to put its Applications Group on the map in the U.S. market. Oracle is one of the few large companies with a strong repertoire of UNIX applications software products, although it is of limited breadth. Revenue for the Applications Group was $55 million, or 6% of fiscal 1990 revenues of $972 million; most of the $55 million was from accounting applications software products.

Forty-nine of Oracle's 1990 fiscal revenues are from non-U.S. sources, and this percentage is growing.

6. Ross Systems, 555 Twin Dolphin Drive, Redwood City, CA 94065, (415) 593-2500

Ross Systems provides financial management, accounting, distribution, human resources, and business productivity applications software products and associated support services exclusively for DEC computers. The company also provides education and consulting services and processing services.

Ross' strategy is internally nicknamed "CORN" which stands for the following:

- Client-server—A client-server planning package, which can function on DEC Windows, a terminal, or a microcomputer, will be available this summer. Processing will take place on both locations DEC VAX and the client.
- Open Systems—Series 1 financial and accounting software will be available in VMS, Ultrix, and UNIX SCO.
- Relational data bases — An accounting SQL product will be available this summer, and HR for SQL Rdb is in test mode.
- NAS—Ross will continue expansion of its products that operate within DEC's NAS framework.

The Ross Financial Series includes general ledger, accounts receivable, accounts payable, purchase order, fixed assets, encumbrance accounting, currency management, and allocations. Ross accounting software ties into Comshare's EIS and Access Corporation's 2020 spreadsheet.

Ross Systems and SmartStar Corp. are jointly developing products. SmartStar supplies the VAX community with a 4GL applications development environment. Ross Systems also has a cooperative marketing agreement with Ingres Corp. under which the two companies will cooperatively market the INGRES toolset with Ross Systems' Renaissance Series of financial management and accounting software. They will also work to prototype an INGRES-based version of Renaissance applications for DEC's ULTRIX operating system.

The Professional Services organization provides management consulting and applications consulting. It evaluates and manages the client's needs through supplying custom systems, custom interfaces, data conversions, and system conversions, and training.

Ross has acquired three companies in the last two years and is likely to continue to expand through additional acquisitions as well as internal expansion.

Total revenues increased 51% to $32,566,000 in fiscal 1990. International revenues are 39% of total revenues versus 22% one year ago. Consulting and other services accounts for 27% of revenues, up from 23% in 1989.

7. Systems Union Inc., 244 East 48th Street, New York, NY 10017, (212) 753-7777

Systems Union is the U.S. company of the European-based Systems Union Group. It exemplifies the kinds of companies that U.S. firms will be competing with in the international accounting software products arena.

SunSystems is a family of integrated multi-currency accounting and business software packages that are made up of two basic modules. The SunAccount module is a combined ledger accounting system that translates and consolidates critical financial information in all world currencies; it adapts to all international accounting standards; and is available in several language versions, including French, Spanish, English, Chinese, Japanese, and German. The SunBusiness module, which integrates with SunAccount, manages all elements of single- or multi-currency invoicing, sales order processing, and inventory control. It enables users to tailor contents of their sales invoices to meet their individual needs.

Client-server versions that support the Oracle or SQL Server RDBMS were announced in February 1991. The versions operate similarly on PCs; a range of PC-LANs; DEC VAX and DEC Systems ULTRIX, IBM RISC System/6000 and AS/400 workstation and midrange computers; and UNIX-based systems from NCR, Pyramid, Altos, and other vendors.

Systems Union is a Microsoft SQL Solutions Partner; SunSystems is the first accounting front-end to Microsoft's SQL Server RDBMS.

Conclusions and Recommendations

Conclusions and Recommendations

A

Industry and IS Market Conclusions

Several issues point to a marketplace in need of new and better accounting application solutions. Trends that have created this need include business expansion overseas; greater complexity of doing business; industry and organizational restructuring; increasing emphasis on tracking costs; and an installed base of old, inflexible accounting applications software products that can't readily accommodate these changes.

Vendors are just beginning to introduce new accounting products that deal with the above issues. Much more product development effort is under way this year compared to last year; practically all leading vendors are developing client-server products, many of which run on multiple downsized platforms. Products are incorporating more customization and integration capabilities as well.

Although users need new accounting application solutions, they are reluctant to change. Major growth inhibitors for this cross-industry sector are not only users' conservative attitude towards the accounting function and the fact that software products are just being made available; lack of user knowledge about LAN integration, network management, relational and distributed DBMSs, and client-server technologies also inhibits growth.

Other trends include:

- More microcomputer and workstation-based products are being introduced to a market eager to purchase downsized solutions.
- Multinational software capabilities are becoming more important.

- Expenditures on accounting cross-industry turnkey systems are inhibited by the need for integration and customization. Would-be cross-industry packages are increasingly being sold in conjunction with vertical applications software products, thereby making them industry-specific solutions.

- The market for accounting processing services small, and it is declining.

B

Issues and Recommendations

Exhibit VI-1 outlines some of the issues facing users and vendors in the accounting cross-industry sector.

Accounting Cross-Industry Sector
Key User and Vendor Issues

- User Issues
  - Client-server? What kind?
  - UNIX? SAA? NAS?
  - One-stop shopping vs. multiple vendors' products
  - Industry-specific vs. cross-industry
- IS Vendor Issues
  - Product/customer migration strategies
  - Pricing
  - SI function
  - Customization tools
  - Ability to handle foreign currencies

The good news is the availability of new types of accounting solutions. However, users need to carefully wade through the variations on the client-server theme, operating systems, and frameworks. All of this takes time and skill.

Users will have to evaluate whether the advantages of having a broad selection of integrated accounting modules, as well as other kinds of applications software products from a single vendor outweighs the

advantages of being able to pick and choose among multiple vendors. Important factors in this decision are the ease with which products can be integrated and a vendors' ability to assist in these efforts.

Vendors will need to provide a selection of migration strategies to appeal to a broad customer base. These strategies must obviously include a well-thought-out pricing element. They will need to provide strong service and support that not only includes user education and training, but also a certain level of systems integration expertise. Although users may be reluctant to customize purchased solutions, vendors of accounting products are well advised to offer a strong set of customization capabilities, as accounting is one of the true cross-industry markets and is less likely to be encroached upon by internal development than some of the other cross-industry sectors.

Appendix

Forecast Data Base

EXHIBIT A-1

Accounting Cross-Industry Sector
User Expenditure Forecast by Delivery Mode, 1990-1996

Delivery Modes	1990 ($M)	Growth 90-91 (%)	1991 ($M)	1992 ($M)	1993 ($M)	1994 ($M)	1995 ($M)	1996 ($M)	CAGR 91-96 (%)
Sector Total	2,596	9	2,835	3,104	3,413	3,771	4,187	4,671	11
Processing Services	146	3	150	155	160	165	170	175	3
- Transaction Processing	146	3	150	155	160	165	170	175	3
- Utility Processing	-	-	-	-	-	-	-	-	-
- Other Processing	-	-	-	-	-	-	-	-	-
Turnkey Systems	422	3	435	448	461	475	490	504	3
Applications Software	2,028	11	2,250	2,501	2,792	3,131	3,527	3,992	12
- Mainframe	728	4	757	787	819	852	885	920	4
- Minicomputer	529	6	560	594	629	667	707	750	6
- Workstation/PC	771	20	933	1,120	1,344	1,612	1,935	2,322	20

EXHIBIT A-2

Accounting Cross-Industry Sector
1991 MAP Data Base Reconciliation

Delivery Modes	1990 Market				1995 Market				90-95 CAGR per data 90 rpt (%)	90-95 CAGR per data 91 rpt (%)
	1990 Report (Fcst) ($M)	1991 Report (Actual) ($M)	Variance from 1990 Report ($M)	Variance from 1990 Report (%)	1990 Report (Fcst) ($M)	1991 Report (Fcst) ($M)	Variance from 1990 Report ($M)	Variance from 1990 Report (%)		
Total	3,171	2,596	574	(18)	5,039	4,187	852	(17)	10	10
Processing Services	721	146	575	(394)	789	170	619	(78)	2	3
Turnkey Systems	422	422	-	-	488	490	2	-	3	3
Applications Software	2,028	2,028	-	-	3,762	3,527	235	(6)	13	12
Systems Operations	-	-	-	-	-	-	-	-	-	-
Systems Integration	-	-	-	-	-	-	-	-	-	-
Professional Services	-	-	-	-	-	-	-	-	-	-
Network Services	-	-	-	-	-	-	-	-	-	-

INPUT has adjusted its processing services 1990 market size and forecast downward this year to reflect the fact that accounting processing services do not include tax processing services sold to accounting firms. These amounts—$574 million in 1990 growing to $852 million in 1995—have been added to processing services user expenditures in the business services industry-specific sector.

About INPUT

INPUT provides planning information, analysis, and recommendations for the information technology industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Subscription services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services. INPUT specializes in the software and services industry which includes software products, systems operations, processing services, network services, systems integration, professional services, turnkey systems, and customer services. Particular areas of expertise include CASE analysis, information systems planning, and outsourcing.

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialization. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed as a privately held corporation in 1974, INPUT has become a leading international research and consulting firm. Clients include more than 100 of the world's largest and most technically advanced companies.

INPUT OFFICES

North America

San Francisco
1280 Villa Street
Mountain View, CA 94041-1194
Tel. (415) 961-3300 Fax (415) 961-3966

New York
Atrium at Glenpointe
400 Frank W. Burr Blvd.
Teaneck, NJ 07666
Tel. (201) 801-0050 Fax (201) 801-0441

Washington, D.C.
INPUT, INC.
1953 Gallows Road, Suite 560
Vienna, VA 22182
Tel. (703) 847-6870 Fax (703) 847-6872

International

London
INPUT LTD.
Piccadilly House
33/37 Regent Street
London SW1Y 4NF, England
Tel. (071) 493-9335 Fax (071) 629-0179

Paris
INPUT SARL
24, avenue du Recteur Poincaré
75016 Paris, France
Tel. (33-1) 46 47 65 65 Fax (33-1) 46 47 69 50

Frankfurt
INPUT LTD.
Sudetenstrasse 9
D-6306 Langgöns-Niederkleen, Germany
Tel. (0) 6447-7229 Fax (0) 6447-7327

Tokyo
INPUT KK
Saida Building, 4-6
Kanda Sakuma-cho, Chiyoda-ku
Tokyo 101, Japan
Tel. (03) 3864-0531 Fax (03) 3864-4114