U.S. INFORMATION SERVICES
MARKET ANALYSIS PROGRAM

Sales and Marketing

Information Services Opportunities in Cross-Industry Markets

1992-1997

INPUT®

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

OCTOBER 1992

INFORMATION SERVICES OPPORTUNITIES IN CROSS-INDUSTRY MARKETS

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EXCERPT

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Abstract

This document extracts Chapter IX, *Sales and Marketing*, from INPUT's full report, *Information Services Opportunities in Cross-Industry Markets, 1992-1997*. The excerpt contains the *Introduction* (Chapter I) and *Sales and Marketing* (Chapter IX) chapters from the full report, and also provides Appendix A, *Definition of Terms*, and the market-specific financials from Appendix B, *Forecast Data Base*.

The excerpt does not contain either the Executive Overview or Conclusions and Recomendations chapters from the full report, since these sections address all cross-industry market sectors at an overview level.

The extract is intended for readers who have an interest in a single cross-industry market sector. If data and analysis of other cross-industry market sectors is required, it can be obtained by purchasing the full report, *Information Services Opportunities in Cross-Industry Markets, 1992-1997*.

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Introduction

A
Purpose and Organization

This report is part of a series of market analysis reports written each year by INPUT on industry and cross-industry sectors of the U.S. information services industry. This report analyzes the cross-industry sectors of the U.S. information services industry.

1. Purpose

The objectives of this report are to:

- Forecast user expenditures during the next five years on information services for each of the seven cross-industry sectors
- Identify and discuss user department directions as they relate to each of the seven cross-industry sectors
- Identify technological issues and trends that are driving the use of information services for the cross-industry sectors
- Discuss the competitive environment and profile leading vendors in each of the cross-industry sectors
- Summarize findings through comparing and contrasting the cross-industry sectors

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

- Review the forces shaping their markets
- 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 follows:

- Chapter II is an overview of the cross-industry sectors of the information services market.
- Chapters III through IX are individual discussions of each of the seven cross-industry sectors. Within each chapter there are five sections.
  - Section 1, *Definitions*, introduces and defines each of the cross-industry sectors.
  - Section 2, *Information Services Markets*, presents the information services market forecasts by delivery mode and submode for each of the seven cross-industry sectors.
  - Section 3, *User Department Directions*, discusses and analyzes interviews with end-user organizations representing the seven cross-industry sectors.
  - Section 4, *Trends/Technology Ratings of Importance*, provides vendor and user respondent ratings of the relative importance of eight technologies.
  - Section 5, *Vendors and Competitive Environment*, discusses the competitive environment for information services within each of the cross-industry sectors and profiles leading and emerging vendors.
- Chapter X summarizes the conclusions of Chapters III through IX.
- Appendix A—*Definition of Terms*—provides definitions and descriptions of market structures and terms used throughout INPUT's reports.

- Appendix B—*Forecast Data Base*—provides a detailed forecast by delivery mode for each cross-industry sector. It also contains a reconciliation to the previous year's cross-industry sector reports.

B
Scope and Methodology

This report addresses the U.S. information services industry in seven cross-industry sectors. It includes only 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 seven cross-industry sectors identified by INPUT are:

- Accounting
- Human Resources
- Education and Training
- Engineering and Scientific
- Office Systems
- Planning and Analysis
- Sales and Marketing

2. Delivery Mode Definitions

Cross-industry information services 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, information delivery services and systems software are excluded from cross-industry consideration.

For a more complete discussion of INPUT's information services industry structure and market sector definitions, please refer to the separate volume, INPUT's *Definition of Terms* found in the volume I binder of the 1992 Market Analysis Program reports.

3. Methodology

Data was collected and analyzed from in-depth telephone interviews with 37 vendors and 18 user departments representing all cross-industry sectors. In addition, INPUT's library was used as an information resource, as were the results of previous INPUT reports on key aspects of the information services industry.

C
Forecast Assumptions

In developing the five-year forecasts, INPUT has incorporated current economic assumptions regarding the outlook for the U.S. economy as a whole.

- The GNP and GNP deflator growth rates used in INPUT's market projections are from the CONSENSUS forecast of the Blue Chip Economic Indicators of Sedona, Arizona. The Blue Chip CONSENSUS forecast is derived from a panel of economists representing leading financial, industrial, and research firms across the U.S. and has a 13-year track record of balanced and accurate projections.

- The economic situation is showing signs of improvement and its impact on the information services market will be more favorable in 1992 and beyond than it was in 1991.

1. Economic Overview

The year 1991 was one in which the recession was expected to end, the recovery to start, and the ambiguities of an uncertain economy to gradually disappear. The end of the Middle East crisis brought a brief euphoria, as American troops, victorious in Iraq, returned home to hopes that the end of the conflict would "jump-start" the economy. Some encouraging signs were seen, but by year-end 1991, the U.S. economy was still sluggish, with no clear signs of a near-term sustainable recovery.

Phrases such as "all the necessary pieces to initiate and sustain a recovery are in place" have been common in the media, but as late as May 1992, the hoped-for sustainable upturn in the economy is just starting to be seen. Few disagree that a return to economic growth will happen, but opinions vary widely as to when a steady, sustainable turnaround will be solidly assured, how quickly the economy will rebound, and what the new growth rates will be for the country, the various industries and the financial resources that fuel the economy.

At present, economists are expecting an inflation-adjusted gross domestic product (GDP) to increase 2.8% from the fourth quarter of 1991 to the fourth quarter of 1992, and about the same increase in 1993. This will be the best economic performance in four years, but it is only half the average pace recorded in the initial years of previous recoveries.

2. Economic Impact

Official or unofficial, recession in the U.S. finally ended a decade of largely uninterrupted economic growth.

Economic growth is significant because 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. For example:

- The inflation rate of the past few years has been much more modest than in the mid-1980s and, as noted above, is expected to continue at modest levels. Because INPUT's forecasts and market sizes are in current dollars, lower inflation means lower growth.

- Real economic growth had been modest over the few years prior to the economic slowdown. As a result, deferred and canceled expansion plans in all industry sectors have slowed the expansion of information services expenditures. A 2.8% increase per year in the GDP for 1992 and 1993 is not likely to change this condition.

- The trend toward shifting information processing to smaller computers lowers the software products investment, based on current pricing practices. Thus, the quantities of software products sold increase, but revenue levels grow at a more modest rate.

The net economic influence on the cross-industry sectors for information services is that the slowdown in growth and constraints on budgets seen over the last two years will not appreciably change over the next two years.

Businesses that use cross-industry information services will still be dealing with their own market, product and organizational uncertainties, and although such an environment offers many opportunities for the use of new products and technologies, users are expected to continue their tendency toward cautious change and growth, and strong expense controls.

D
Related Reports

Related reports of possible interest to the reader include:

1. U.S. Markets

- *U.S. Application Solutions Market, 1991-1996*
- *U.S. Processing Services Market, 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 Forecast for Computer Software and Services, 1991-1996*
- *Trends in Processing Services—Western Europe, 1991-1996*

Sales and Marketing

A
Definitions

Marketing and sales information services involve the following:

- List processing, form letters, contact management, tracking and forwarding leads, ranking prospects, prompting scripts for telemarketing
- Sales analysis—monthly history and sales summary files; details of each invoice; tracking of sales month-to-date or year-to-date; and sales by branch, sales territory, customer and product
- Marketing management—reports tailored to management requirements. These include marketing, sales and product strategies; designing and managing sales territories; and analyzing marketing and sales programs by market, territory, product, customer type, price, and channel. Sales and marketing management software is often closely integrated with financial planning and decision support functions.
- Demographic market planning models for selecting geographic location of stores, outlets, and companies. The basic model cuts across multiple industries but requires customization for industries such as petroleum, banking, government services, restaurants, general merchandise, and supermarkets.

Unlike some of the other cross-industry sectors—such as human resources—from a functional standpoint all marketing and sales systems are not alike. Except for the basic functions of storing data for mailings and list processing, additional functions and features vary widely. This diversity reflects the relative immaturity of marketing and sales application solutions. Marketing and sales application solutions are typically closely integrated with accounting, inventory control, purchasing and order entry software. Products range from standalone personal productivity tools to LAN-based multiuser systems to host-based systems.

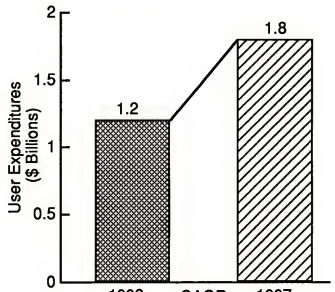
The majority of marketing and sales software is industry-specific and is therefore not considered in user expenditure forecasts for this cross-industry sector. Vertical industry sectors with emphasis on the selling and distribution functions—such as wholesale distribution, retail distribution and manufacturing industries—are where most of the marketing and sales software resides.

B
Information Services Markets

Exhibit IX-1 presents INPUT's forecast for the sales and marketing cross-industry sector expenditures on information services.

EXHIBIT IX-1

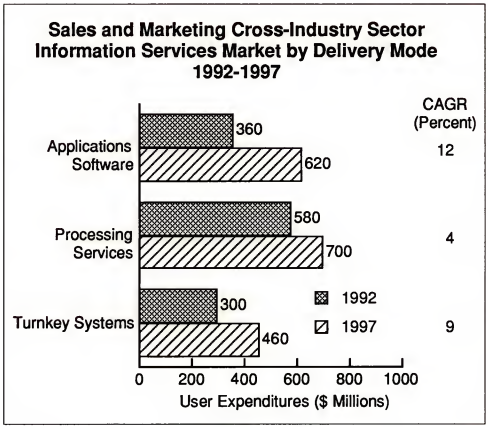
Sales and Marketing Cross-Industry Sector Information Services Market, 1992-1997



An increasingly competitive environment in many industries enhances the appeal of sales and marketing information services. It increases the appeal of products that not only free up more time for sales reps to sell, but also improve customer service and help to target markets.

User expenditures on sales and marketing applications software products and turnkey systems are forecast to grow at the industry averages for those delivery modes; expenditures on transaction processing services, however, are forecast to grow at half the rate of the industry average (see Exhibit IX-2).

EXHIBIT IX-2



1. Applications Software Products

Growth promoters for sales and marketing cross-industry sector applications software products are:

- Growing concern about sales force productivity and product-by-product profitability encourages the use of applications software products that can track actual sales to forecasted sales in a myriad of ways.
- Wide-scale availability of notebook computers, and now pen-based computers, encourages sales force automation. These computers can provide an easy method for each sales rep to keep track of calls and daily activities; it also provides a means of accessing and updating corporate data that saves a great deal of time and eliminates paper use.
- Use of graphical user interfaces (GUIs) makes training on multiple applications software products, once thought to be time consuming, relatively easy.

Unlike some of the other product segments, such as spreadsheets (within the planning and analysis sector), the sales and marketing sector is far from saturated. In fact, based on expenditure levels, INPUT believes a large potential market still exists. One of the growth inhibitors in the past—the large percentage of their time that sales reps spend out of the office and therefore not having access to a computer—is melting away with the continuing adoption of portables.

Additionally, unlike some of the other product segments such as project management, INPUT does not believe that much so-called missionary selling is required. The benefits of information-based selling tools and automated sales force tools are obvious.

INPUT does not believe that changing pricing structures will have an adverse effect on this cross-industry sector. Not that much sales and marketing software resides on the mainframe to begin with; so its offloading to smaller platforms won't make much difference. Rather, the availability of lower priced sales and marketing software that runs on portable computers will have a broad appeal that will more than make up for any effects downsizing might have on overall prices and therefore overall expenditures.

What will continue to be particularly appealing are PC-based or portable PC-based tools that provide access to multiple data bases and that provide easy ways to analyze and present the data. In this respect, sales and marketing applications software products may be competing with customized planning and analysis software products and/or integrated office systems.

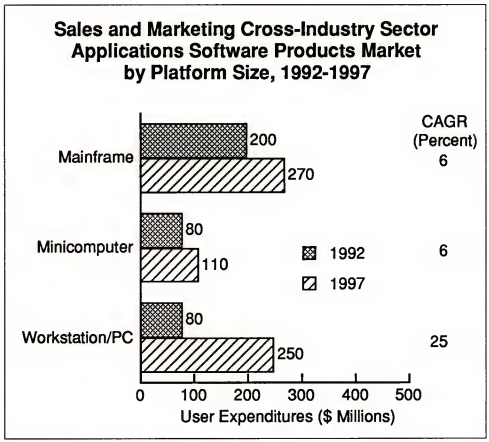
In addition to potential overlap with other cross-industry sectors, other potential growth inhibitors are:

- Most marketing and sales applications are sold to specific industries—especially retail and wholesale consumer goods industries.

- Marketing and sales software will be increasingly integrated with industry-specific packages and/or other more dominant cross-industry packages such as accounting, integrated office systems and executive information systems.

INPUT's estimate of the 1992-1997 applications software products market by hardware platform for the sales and marketing cross-industry sector is presented in Exhibit IX-3.

EXHIBIT IX-3



Mainframe and Minicomputer—The majority of marketing and sales software—applications that consolidate and analyze data collected from sales—currently resides on mainframes and minicomputers.

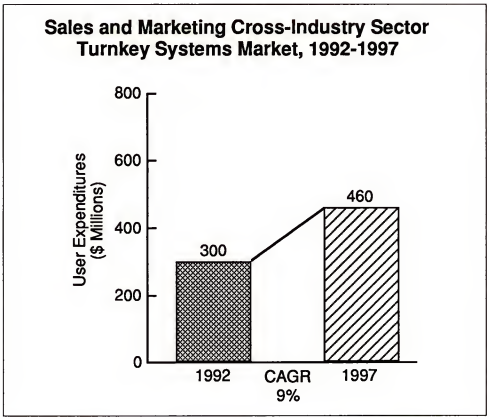
Workstation/PC—Growth of low-end marketing and sales applications software products is tied to the market growth of laptops and, recently, pen-based computers. Growth is expected to continue to be strong for these products.

2. Turnkey Systems

Turnkey systems for the sales and marketing cross-industry sector are forecast to grow at the rate for turnkey systems as a whole (Exhibit IX-4).

Although a substantial number of VARs provide integrated marketing and sales systems to specific industries such as wholesale and retail distribution, far fewer provide cross-industry integrated marketing and sales systems. These VARs must be able to afford the inventory carrying costs of multiple hardware platforms and they must also be well versed in customization and integration.

EXHIBIT IX-4



INPUT does not believe, based on discussions with vendors, that applications software products vendors are selling increasing amounts of sales and marketing products through the VAR channel. Thus these turnkey systems vendors and VARs are likely to have developed their own software that covers a specific niche within sales and marketing, based on their own areas of expertise.

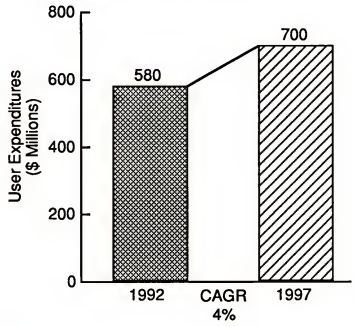
3. Processing Services

Exhibit IX-5 presents INPUT's sales and marketing cross-industry processing services forecast.

Sales and marketing is the second largest cross-industry sector for processing services; human resources (payroll processing) is first. 1992 expenditures on other cross-industry processing services are greater than for either applications software products or turnkey systems. By 1997, however, both applications software products and turnkey systems expenditures will have surpassed processing services.

EXHIBIT IX-5

Sales and Marketing Cross-Industry Sector Processing Services Market, 1992-1997



User expenditures on sales and marketing cross-industry processing services are predominantly for list processing and customer demographic data. Many small regional list processing organizations compete in this delivery mode. Marketing and sales systems have only recently begun to capture the interest of corporate America as critical enough to be brought in-house. The fact that marketing and sales services software is enhanced if it is closely integrated with other aspects of a company's business is a compelling reason to take on the task of internal installation and integration.

Other growth inhibitors are:

- As vendors provide additional applications software products that are easy to integrate and customize, less will be spent on outside processing services.
- Many large companies view customer lists as proprietary and are reluctant to give them to an outside firm because of concerns about security. As workstation-based solutions become more plentiful, more firms will eventually opt to bring this function in-house.
- Lists and data bases are becoming more prolific and more accessible both within companies and through external purchases.

C
User Department Directions

The responses of two sales organizations are summarized and analyzed below.

Manager of Sales Force Systems, pharmaceuticals firm—Currently all reports are provided daily, weekly and monthly in the form of paper documents to regional sales managers. Three primary reports are:

- Call data—which doctors are called upon by each sales rep and the results of each call
- Market share information—data is captured by territory, zip code, district and region. The data is analyzed and compared against data purchased from outside vendors to ascertain market share.
- Inventory of samples—The Pharmaceutical Marketing Drug Act of 1987 requires that all drug samples' location and status are tracked. About 9,000 forms are processed per week. For every sample that is left, a doctor's signature is required. These must be maintained and tracked.

This company has made an ongoing effort to take paper, required in the above reporting processes as well as other reports, out of the system and to provide information to the sales force electronically. The firm has a sample tracking pilot project under way with pen computers. The applications software was developed internally, as nothing on the market met the company's needs.

In the future, this firm will provide the sales force with PC-based access to data from multiple corporate data bases. Budgeting information and product line information will need to be cross-referenced with marketing data.

Downsizing (taking applications software and/or data off of the central computer and distributing it to smaller computers) is not expected to have an impact on sales and marketing applications. Within five years, applications integration, data base technology and client/server applications will have the greatest impact.

Marketing Manager, telecommunications firm—This firm is developing sales and marketing application systems in three areas:

- The company recently expanded its marketing reach to include countries outside the U.S. and has modified its products for new markets. Because there was little applications software on the market that supported international sales activities—international comparison of sales on a per-product and per-country basis—this company is developing its own software.

- The company is also developing a system that will enable it to compare actual sales results to leads to see which leads are most productive. This system will track and compare sales results by how many sales are generated from distributor efforts, direct sales efforts to existing customers, cold-call selling, and leads from promotional activities. Currently the actual sales results data resides on an HP3000 and the inquiries or qualified leads data base resides on a DEC minicomputer. The two data bases need to be integrated or interlinked.

- The third project is capturing information on customer demographics for purposes of building customer profiles for targeted marketing efforts. The company is about to introduce a new type of product and wants to identify vertical markets and clarify ad campaigns.

In both of these examples, data base access and analysis are critical features. It would stand to reason that graphics capabilities are also important for sales and marketing solutions. In both cases, applications are being developed internally because packaged products either aren't available or are inadequate.

These two examples suggest that there's a large potential market for sales and marketing applications software products. Perhaps vendors are torn between providing a product that is specific enough to be useful and generic enough have broad market appeal. Customization tools will play an increasingly important role in this market. Additionally, vendors will benefit from being able to offer systems integration capabilities or having close ties to independent systems integrators.

D

Trends/Technology Ratings of Importance

Respondents within all cross-industry sectors, both vendors and users, were asked to rate various trends and technologies on a scale of one to five, where one is unimportant or having little impact and five is very important or of significant impact.

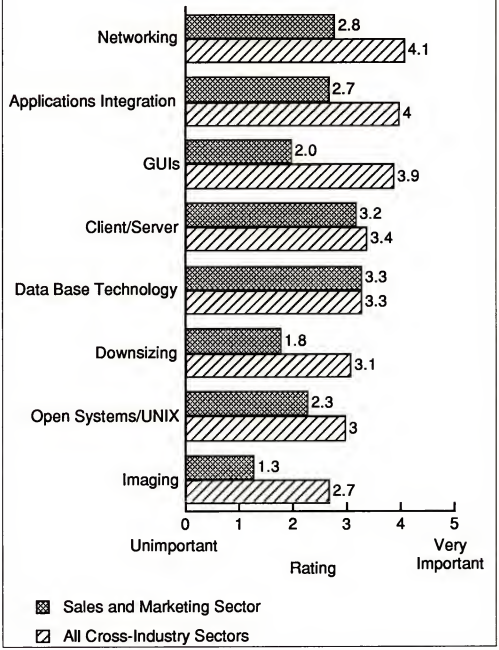
The technologies listed in Exhibit IX-6 were selected because INPUT believes they will receive the most attention from vendors and users over the next five years. In addition, INPUT believes that their impacts on vendors and users will be profound. Users who deploy these technologies

will be re-engineering their business functions. And vendors will need to change not only their products, but also the ways in which they price, sell and support them.

Exhibit IX-6 shows the composite rankings of the sales and marketing cross-industry sector compared to the ratings of all cross-industry sectors combined.

EXHIBIT IX-6

Sales and Marketing Cross-Industry Sector Respondents' Indication of Relative Importance of Trends and Technologies



Unlike all cross-industry sectors combined, the sales and marketing cross-industry sector rates data base technology and client/server architectures as the technologies having the greatest impact during 1992; the other cross-industry sectors combined rated networking and applications integration as having the greatest impact.

- It is apparent that data access and data sharing are focal points of many sales and marketing applications software product needs.

- The respondents who rated client/server higher than 3.0 interpreted client/server as meaning a PC with a GUI-based front end accessing a central computer. Although this is a form of client/server architecture, it does not signal the advent of products that share application logic and processing between two computers—a client and a server. But it does signal the importance of local access and analysis of data that resides on a central computer.

GUIs are rated considerably lower by the sales and marketing sector, as are downsizing and imaging. In fact, overall, almost all ratings given by respondents within the sales and marketing cross-industry sector are lower than are ratings given by all cross-industry sectors combined. These lower ratings suggest that this sector is relatively slow to adopt new technologies. This sector is in fact still largely mainframe-based, compared with some of the other cross-industry sectors.

The fact that data base technology is the highest ranking technology suggests that this sector still considers the development and implementation of data bases—a technology that has been around for many years—a priority. It also confirms the traditional centralized mainframe orientation of the sales and marketing sector.

Respondents for all cross-industry sectors were also asked to rank the technologies and trends in terms of importance five years from now. For the sales and marketing sector, networking and applications integration will increase in importance, so that by 1997 their ratings will be about the same as the ratings given to these technologies for all cross-industry sectors combined.

All technologies for all cross-industry sectors increase in importance over the five-year period. INPUT has elected not to show these ratings because we believe they indicate that respondents, although they have the general sense that all of the technologies will become more important, do not really know the extent to which they will be implementing them or be impacted by them in 1997.

E

Vendors and Competitive Environment

1. Vendor Characteristics and Trends

Marketing and sales applications are a natural complement to other cross-industry packages such as accounting and office systems. They are also a natural addition to vertical packages such as inventory control and purchasing, which are used predominantly in the manufacturing, retail and wholesale distribution, and packaged consumer goods industries.

Thus, sales and marketing is often incorporated into another cross-industry applications software product as an add-on module. For example, Armor Systems' Customer Information/Data Base Management software is one of fifteen modules within its overall Excalibur+ Premier Business Management System.

Thus, companies that sell sales and marketing cross-industry sector applications software products are likely to sell other products as well.

Also, as mentioned previously, all marketing and sales systems are not alike. Except for the basic functions of storing data for mailings and list processing, additional functions and features vary widely. This variety reflects not only the multifaceted nature of marketing and sales, but also the relative immaturity of this cross-industry sector.

For marketing and sales information services, ease of customization is particularly important to accommodate user variation in methods of managing and tracking data and company-specific forms and documents. Ease of integration with other applications as well as data bases will continue to be an important selling point for both application areas.

2. Leading and Emerging Vendors

The applications software products market players in sales and marketing are:

- The largest independent software vendors—such as Computer Associates, Dun & Bradstreet Software, and Lotus—and the largest systems vendors—such as Control Data, Digital Equipment, Hewlett-Packard and IBM. Many of them have host/DBMS-based client tracking/list processing products.

- Dozens of small niche vendors sell marketing and sales software, primarily for personal computer platforms. Examples of such vendors are Sales Technologies, Modatech, Phoenix and Epsilon. Many of them are vertically oriented.

- Independent DBMS companies have extended their product lines to include marketing and sales software. For example, Computer Corporation of America's MarketPulse product is an extension of its original data base product, Model 204.

- Companies whose main product is an EIS or decision support tool. For example, Information Resources, Inc. has a Sales Management System that works in conjunction with its decision support software product, EXPRESS. The Sales Management System is used by sales managers to track and analyze sales performance for territory management. The system can perform rankings, draw comparisons, highlight exceptions and identify trends. EXPRESS is available to end users on a timesharing or direct license basis.

- Numerous, largely regional companies offer computerized lettershop operations and direct mail processing services.

- Although there are some VARs and turnkey vendors focused exclusively on sales and marketing, the majority of VARs and turnkey vendors sell marketing and sales software as one of several bundled products for industry-specific markets.

3. Vendor Profiles

This section contains profiles of a sampling of leading marketing and sales or electronic publishing information services vendors to show the diversity of types of companies and approaches.

a. Acxiom Corporation

Acxiom provides custom-designed marketing data bases, list processing and enhancement services, turnkey in-house fulfillment systems to catalog vendors, and personalized printing and lettershop services. In addition, during the last two years, Acxiom has begun to offer outsourcing (systems operations) services and subscription fulfillment software to the publishing industry.

Acxiom provides various electronic information services and processing services for direct marketers, including storage, retrieval, and enhancement.

Marketing data base services are provided on a custom basis to assist direct marketing organizations in developing targeted marketing lists.

The company's primary vehicle for these services is its data communications network through which direct marketing customers receive authorized access to lists and data bases housed in the company's corporate headquarters data center. Customers are connected to the network through either company-owned terminals leased to the customer or through customer-owned equipment.

Acxiom serves any company involved in direct marketing.
In early 1990, five companies merged with Acxiom. These five companies are BSA, Inc., CCX Network, Modern Mailers, Marketlead Services, and Southwark Computer Services, Ltd. With this consolidation, Acxiom considers itself the leading marketing services company.

In October 1991, Acxiom and Advo-System, Inc. formed a joint venture, Info-base Services, to develop direct marketing data bases and technology to extract data from directories and other printed materials by optical scanning. The companies will be equal partners in the venture. Advo is a direct-mail company that distributes coupons and flyers to households.

Revenue for the fiscal year ending March 1991 was $97.7 million, a 9% increase over fiscal 1990 revenue.

b. Early, Cloud & Co.

Early, Cloud & Company (ECC) provides software that automates telephone business functions such as customer service, account management and teleservicing. The Telephone Delivery System (TDS) supports both inbound and outbound calling, and can handle them concurrently. TDS is also suitable for environments that are not telephone oriented but require workflow and connectivity support. For example, an application such as loan approval, which is characterized by the need to process a customer file in multiple steps through a number of departments, can be automated with TDS.

TDS runs on IBM MVS, VSE and AS/400 platforms. ECC recently announced enhancements of its TDS products to embrace a client/server model. The TDS architecture will be expanded to allow message-based processing, which provides the framework for TDS to function as a host-based server.

ECC recently announced new functionality for its MVS product that enables the user to extract data from multiple disparate data bases, reformat the data and/or enhance it. It allows a user to present a single systems image to the operators without modifying the back-end systems.

ECC is currently developing a PC front end for its MVS product, which it will announce later in 1992. The PC front-end product will also be available for Tandem and IBM midrange systems.

ECC also recently announced availability of an interface between TDS software and Tandem Call Applications Manager (CAM) software in the AT&T and Northern Telecom environments. CAM is an application enabler that allows TDS software to receive data from private branch exchanges or automatic call distribution.

ECC, founded in 1981, was the first company to provide call center automation in support of telemarketing.

c. Sales Technologies, Inc.

Sales Technologies (ST) designs, develops and integrates tailored software applications to help companies maximize national/international sales activities. ST systems meet the needs of mobile sales forces.

ST's software product consists of five core application modules: Territory Management, Electronic Mail, Electronic Forms, Electronic Reports Distribution and Spreadsheets. All are DOS based.

Although it sells its products across all industries, much of the company's success has been in the consumer goods, pharmaceutical, and oil and gas industries.

In late 1991, Sales Technologies acquired Snap Software Inc. for approximately $5 million. Snap Software developed and marketed a sales management package for strategic selling relationships. The product is prevalent in the financial services and manufacturing sectors.

Sales Technologies recently introduced a new family of products—Medallion—for the pharmaceutical industry. Medallion is a decision support tool and is the first product that ST has targeted to sales managers rather than sales reps. The product integrates sales results with budgets, quotas and syndicated industry data. ST has also introduced a new optical document storage and retrieval product called ST-Oprx, which directly addresses the need pharmaceutical firms have expressed to cut down on paper storage.

Sales Technologies' products run in DEC VAX and DOS. A mainframe-based UNIX solution is under development.

Other development efforts under way include:

- A bar code optical storage system for sampling
- Pen-based signature capture
- Windows-based products

In 1991, Sales Technologies merged with Compumark, which provides a coordinated approach to field sales, services, and marketing information systems.

Definition of Terms

A
Introduction

INPUT's *Definition of Terms* provides the framework for all of INPUT's market analyses and forecasts of the information services industry. It is used for all U.S. programs. The structure defined in Exhibit A-1 is also used in Europe and for the worldwide forecast.

One of the strengths of INPUT's market analysis services is the consistency of the underlying market sizing and forecast data. Each year INPUT reviews its industry structure and makes changes if they are required. When changes are made they are carefully documented and the new definitions and forecasts reconciled to the prior definitions and forecasts. INPUT clients have the benefit of being able to track market forecast data from year to year against a proven and consistent foundation of definitions.

For 1992 INPUT has added one delivery mode and defined three new submodes to its Information Services Industry Structure:

- *Equipment Services* has been added as the ninth delivery mode. INPUT has forecasted the equipment maintenance, support and related services market through its Customer Services Programs for a number or years. Starting in 1992, the equipment services portion of the customer services market will be included in the total information services industry as defined by INPUT. Other portions of this market (such as software support) are already included.

- Two new submodes have been defined in the *Systems Operations* delivery mode - *desktop services* and *network management*. They are defined on pages 5 and 6.

- A fourth submode has been defined within the Professional Services delivery mode—*applications management*. This change reflects a shift in the way some software development and maintenance services are purchased. A complete definition is provided on page 6.

A series of definitions for computer equipment have also been added.

Changes from the 1991 INPUT *Definition of Terms* are indicated with a ☆.

B
Overall Definitions and Analytical Framework

1. Information Services

Information Services are computer/telecommunications-related products and services that are oriented toward the development or use of information systems. Information services typically involve one or more of the following:

- Use of vendor-provided computer processing services to develop or run applications or provide services such as disaster recovery or data entry (called *Processing Services*)
- A combination of computer equipment, packaged software and associated support services which will meet an application systems need (called *Turnkey Systems*)
- Packaged software products, including systems software or applications software products (called *Software Products*)
- People services that support users in developing and operating their own information systems (called *Professional Services*)
- The combination of products (software and equipment) and services where the vendor assumes total responsibility for the development of a custom integrated solution to an information systems need (called *Systems Integration*)
- Services that provide operation and management of all or a significant part of a user's information systems functions under a long-term contract (called *Systems Operations*)
- Services that support the delivery of information in electronic form—typically network-oriented services such as value-added networks, electronic mail and document interchange (called *Network Applications*)
- Services that support the access and use of public and proprietary information such as on-line data bases and news services (called *Electronic Information Services*)
- Services that support the operation of computer and digital communication equipment (called *Equipment Services*)

In general, the market for information services does not involve providing equipment to users. The exception is where the equipment is part of an overall service offering such as a turnkey system, a systems operations contract, or a systems integration project.

The information services market also excludes pure data transport services (i.e., data or voice communications circuits). However, where information transport is associated with a network-based service (e.g., electronic data interchange services), or cannot be feasibly separated from other bundled services (e.g., some systems operations contracts), the transport costs are included as part of the services market.

The analytical framework of the information services industry consists of the following interacting factors: overall and industry-specific business environment (trends, events and issues); technology environment; user information system requirements; size and structure of information services markets; vendors and their products, services and revenues; distribution channels; and competitive issues.

2. Market Forecasts/User Expenditures

All information services market forecasts are estimates of *User Expenditures* for information services. When questions arise about the proper place to count these expenditures, INPUT addresses them from the user's viewpoint: expenditures are categorized according to what users perceive they are buying.

By focusing on user expenditures, INPUT avoids two problems which are related to the distribution channels for various categories of services:

- Double counting, which can occur by estimating total vendor revenues when there is significant reselling within the industry (e.g., software sales to turnkey vendors for repackaging and resale to end users)
- Missed counting, which can occur when sales to end users go through indirect channels such as mail order retailers

Captive Information Services User Expenditures are expenditures for products and services provided by a vendor that is part of the same parent corporation as the user. These expenditures are not included in INPUT forecasts.

Non-captive Information Services User Expenditures are expenditures that go to vendors that have a different parent corporation than the user. It is these expenditures which constitute the information services market analyzed by INPUT and that are included in INPUT forecasts.

3. Delivery Modes

Delivery Modes are defined as specific products and services that satisfy a given user need. While *Market Sectors* specify *who* the buyer is, *Delivery Modes* specify *what* the user is buying.

Of the nine delivery modes defined by INPUT, six are considered primary products or services:

- *Processing Services*
- *Network Services*
- *Professional Services*
- *Applications Software Products*
- *Systems Software Products*
- *Equipment Services*

The remaining three delivery modes represent combinations of these products and services, combined with equipment, management and/or other services:

- *Turnkey Systems*
- *Systems Operations*
- *Systems Integration*

Section C describes the delivery modes and their structure in more detail.

4. Market Sectors

Market Sectors or markets are groupings or categories of the buyers of information services. There are three types of user markets:

- *Vertical Industry* markets, such as Banking, Transportation, Utilities, etc. These are called "industry-specific" markets.

- *Functional Application* markets, such as Human Resources, Accounting, etc. These are called "cross-industry" markets.

- *Other* markets, which are neither industry- nor application-specific, such as the market for systems software products and much of the on-line data base market.

Specific market sectors used by INPUT are defined in Section E, below.

5. Trading Communities

Information technology is playing a major role in re-engineering, not just companies but the value chain or *Trading Communities* in which these companies operate. This re-engineering is resulting in electronic commerce emerging where interorganizational electronic systems facilitate the business processes of the trading community.

- A trading community is the group or organizations—commercial and non-commercial—involved in producing a good or services.

- Electronic commerce and trading communities are addressed in INPUT's EDI and Electronic Commerce Program.

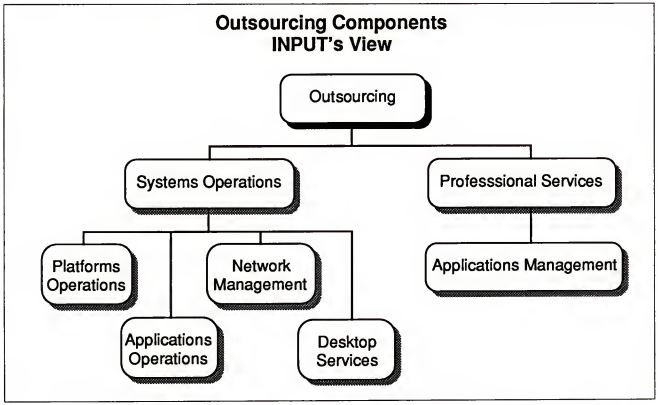
6. Outsourcing

Over the past few years a major change has occurred in the way clients are buying some information services. The shift has been labeled *outsourcing*.

INPUT views outsourcing as a change in the form of the client/vendor relationship. Under an outsourcing relationship, all or a major portion of the information systems function is contracted to a vendor in a long-term relationship. The vendor is responsible for the performance of the function.

INPUT considers the following submodes to be outsourcing-type relationships and in aggregate to represent the outsourcing market. See Exhibit A-1. Complete definitions are provided in Section C of this document. INPUT provides these forecasts as part of the corresponding delivery modes.

EXHIBIT A-1



- *Platform Systems Operations* - The vendor is responsible for managing and operating the client's computer systems.

- *Applications System Operations* - The vendor is responsible for developing and/or maintaining a client's applications as well as operating the computer systems.

☆*Network Management* - The vendor assumes full responsibility for operating and managing the client's data communications systems. This may also include the voice communications of the client.

☆*Applications Management/Maintenance* - The professional services vendor has full responsibility for developing and/or maintaining some or all of the applications systems that a client uses to support business operations. The services are provided on a long-term contractual basis.

☆*Desktop Services* - The vendor assumes responsibility for the deployment, maintenance, and connectivity between the personal computers and/or intelligent workstations in the client organization. The services may also include performing the help-desk function. The services are provided on a long-term contractual basis.

C
Delivery Modes and Submodes

Exhibit A-2 provides the overall structure of the information services industry as defined and used by INPUT. This section of *Definition of Terms* provides definitions for each of the delivery modes and their submodes or components.

1. Software Products

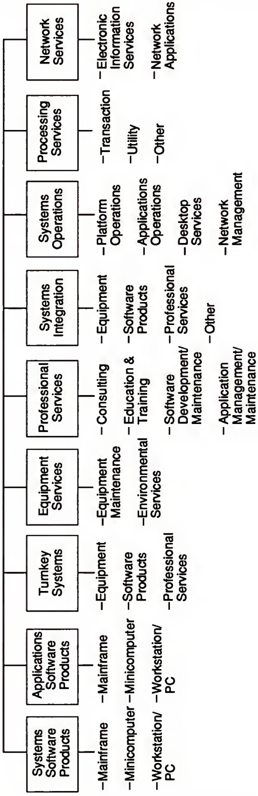
INPUT divides the software products market into two delivery modes: systems software and applications software.

The two delivery modes have many similarities. Both involve purchases of software packages for in-house computer systems. Included are both lease and purchase expenditures, as well as expenditures for work performed by the vendor to implement or maintain the package at the user's sites. Vendor-provided training or support in operation and use of the package, if part of the software pricing, is also included here.

Expenditures for work performed by organizations other than the package vendor are counted in the professional services delivery mode. Fees for work related to education, consulting, and/or custom modification of software products are also counted as professional services, provided such fees are charged separately from the price of the software product itself.

EXHIBIT A-2

Information Services Industry Structure—1992

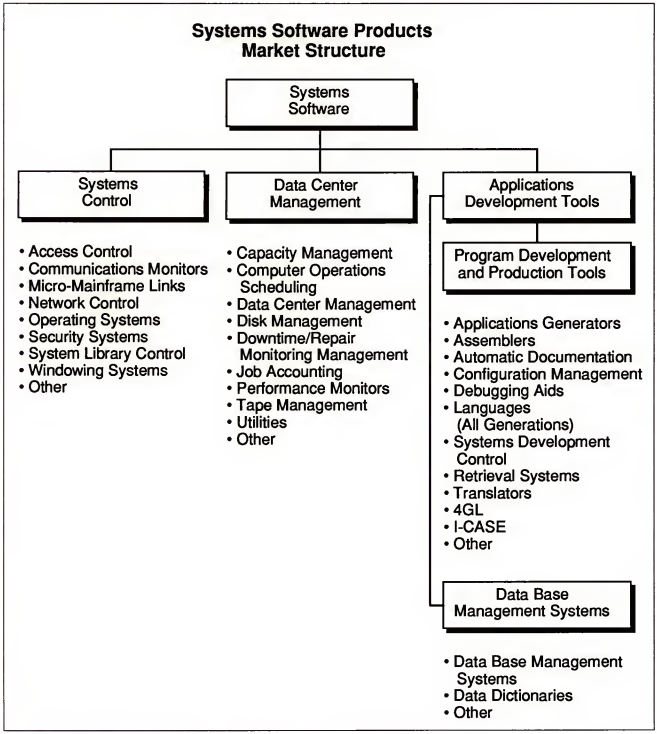


Source: INPUT

a. Systems Software Products

Systems software products enable the computer/communications system to perform basic machine-oriented or user interface functions. INPUT divides systems software products into three submodes. See Exhibit A-3.

EXHIBIT A-3



- *Systems Control Products* - Software programs that manage computer system resources and control the execution of programs. These products include operating systems, emulators, network control, library control, windowing, access control, and spoolers.

- *Operations Management Tools* - Software programs used by operations personnel to manage the computer system and/or network resources and personnel more effectively. Included are performance measurement, job accounting, computer operation scheduling, disk management utilities, and capacity management.

- *Applications Development Tools* - Software programs used to prepare applications for execution by assisting in designing, programming, testing, and related functions. Included are traditional programming languages, 4GLs, data dictionaries, data base management systems, report writers, project control systems, CASE systems and other development productivity aids.

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

b. 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 groups of market sectors. (See Exhibit A-4.)

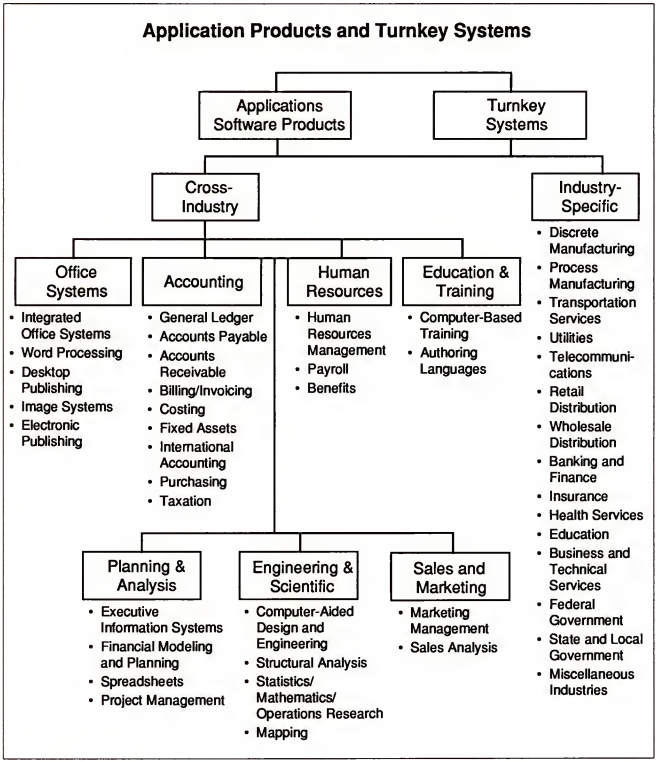
- *Industry Applications Software Products* - Software products that perform functions related to fulfilling business or organizational needs unique to a specific industry (vertical) market and sold to that market only. Examples include demand deposit accounting, MRPII, medical record keeping, automobile 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.

EXHIBIT A-4

Application Products and Turnkey Systems



2. Turnkey Systems

A turnkey system is an integration of equipment (CPU, peripherals, etc.), systems software, and packaged applications 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 professional services provided. INPUT categorizes turnkey systems into two groups of market sectors as it does for applications software products. (See Exhibit A-4.)

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.

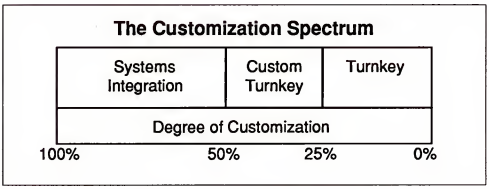
- *Value-Added Reseller (VAR):* A VAR adds value to computer hardware and/or software and then resells it to an end user. The major value added is usually applications software for a vertical or cross-industry market, but also includes many of the other components of a turnkey systems solution, such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

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

Exhibit A-5 contrasts turnkey systems with systems integration. Turnkey systems are based on available software products that a vendor may modify to a modest degree.

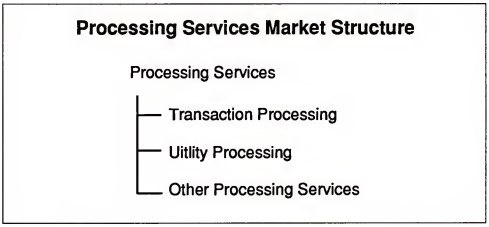
EXHIBIT A-5



3. Processing Services

This delivery mode includes three submodes: transaction processing, utility processing, and "other" processing services. See Exhibit A-6.

EXHIBIT A-6



- *Transaction Processing* - Client uses vendor-provided information systems—including hardware, software and/or data networks—at the vendor site or customer site to process specific applications and update client data bases. The application software is typically provided by the vendor.

- *Utility Processing* - Vendor provides basic software tools (language compilers, assemblers, DBMSs, graphics packages, mathematical models, scientific library routines, etc.), enabling clients to develop and/or operate 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.

4. Systems Operations

Systems operations as a delivery mode was introduced in the 1990 Market Analysis and Systems Operations programs. Previously called Facilities Management, this delivery mode was created by taking the Systems Operations submode out of both Processing Services and Professional Services. For 1992 the submodes have been defined as follows.

Systems operations involves the operation and management of all or a significant part of the client's information systems functions under a long-term contract. These services can be provided in either of two distinct submodes where the difference is whether the support of applications, as well as data center operations, is included.

- *Platform systems operations* - The vendor manages and operates the computer systems, to perform the client's business functions, without taking responsibility for the client's application systems.

- *Applications systems operations* - The vendor manages and operates the computer systems to perform the client's business functions, and is also responsible for maintaining, or developing and maintaining, the client's application systems.

☆*Network Management* - The vendor assumes responsibility for operating and managing the client's data communications systems. This may also include the voice communications of the client. A network management outsourcing contract may include only the management services or the full costs of the communications services and equipment plus the management services.

☆*Desktop Services* - The vendor assumes responsibility for the deployment, maintenance, and connectivity among the personal computers and/or workstations in the client organization. The services may also include performing the help-desk function. Equipment as well as services can be part of a desktop services outsourcing contract.

Note: This type of client service can also be provided through traditional professional services where the contractual criteria of outsourcing are not present.

Systems operations vendors now provide a wide variety of services in support of existing information systems. The vendor can plan, control, provide, operate, maintain and manage any or all components of the client's information systems environment (equipment, networks, applications systems), either at the client's site or the vendor's site.

Note: In the federal government market, systems operation services are also defined by equipment ownership with the terms "COCO" (Contractor-Owned, Contractor-Operated), and "GOCO" (Government-Owned, Contractor-Operated).

5. Systems Integration (SI)

Systems integration is a vendor service that provides a complete solution to an information system, networking or automation development requirement through the custom selection and implementation of a variety of information system products and services. A systems integrator is responsible for the overall management of a systems integration contract and is the single point of contact and responsibility to the buyer for the delivery of the specified system function, on schedule and at the contracted price. (Refer to Exhibit A-7.)

The components of a systems integration project are the following:

- *Equipment* - information processing and communications equipment required to build the systems solution. This component may include custom as well as off-the-shelf equipment to meet the unique needs of the project. The systems integration equipment category excludes turnkey systems by definition.

- *Software products* - prepackaged applications and systems software products.

- *Professional services* - the value-added component that adapts the equipment and develops, assembles, or modifies the software and hardware to meet the system's requirements. It includes all of the professional services activities required to develop, implement, and if included in the contract, operate an information system, including consulting, program/project management, design and integration, software development, education and training, documentation, and systems operations and maintenance.

- *Other services* - most systems integration contracts include other services and product expenditures that are not classified elsewhere. This category includes miscellaneous items such as engineering services, automation equipment, computer supplies, business support services and supplies, and other items required for a smooth development effort.

EXHIBIT A-7

Products/Services in Systems Integration Projects

Equipment

- Information systems
- Communications

Software Products

- Systems software
- Applications software

Professional Services

- Consulting
  - Feasibility and trade-off studies
  - Selection of equipment, network and software
- Program/project management
- Design/integration
  - Systems design
  - Installation of equipment, network, and software
  - Demonstration and testing
- Software development
  - Modification of software packages
  - Modification of existing software
  - Custom development of software
- Education/training and documentation
- Systems operations/maintenance

Other Miscellaneous Products/Services

- Site preparation
- Data processing supplies
- Processing/network services
- Data/voice communication services

6. Professional Services

This category includes four submodes: consulting, education and training, software development, and applications management. Exhibit A-8 provides additional detail.

- *Consulting:* Services include management consulting (related to information systems), information systems re-engineering, information systems consulting, feasibility analysis and cost-effectiveness studies, and project management assistance. Services may be related to any aspect of the information system, including equipment, software, networks and systems operations.

- *Education and Training:* Services that provide training and education or the development of training materials related to information systems and services for the information systems professional and the user, including computer-aided instruction, computer-based education, and vendor instruction of user personnel in operations, design, programming, and documentation. Education and training provided by school systems are not included. General education and training products are included as a cross-industry market sector.

- *Software Development:* Services include user requirements definition, systems design, contract programming, documentation, and implementation of software performed on a custom basis. Conversion and maintenance services are also included.

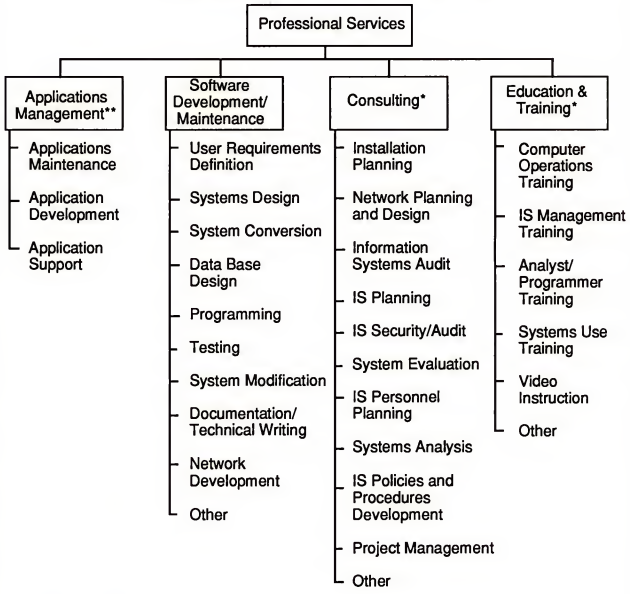
☆*Applications Management*: The vendor has full responsibility for maintaining and upgrading some or all of the application systems that a client uses to support business operations and may develop and implement new application systems for the client.

An applications management contract differs from traditional software development in the form of the client/vendor relationship. Under traditional software development services the relationship is project based. Under applications management it is time and function based.

These services may be provided in combination or separately from platform systems operations.

EXHIBIT A-8

Professional Services Market Structure



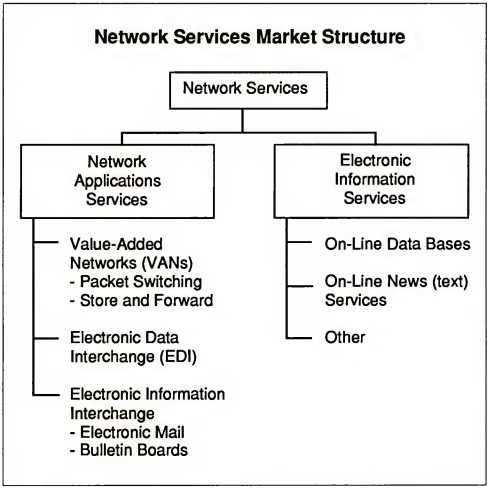
*Related to computer systems, topics, or issues

**Vendor assumes full responsibility on contracted longer term basis

7. Network Services

Network services are a variety of telecommunications-based functions and operations. Network service includes two submodes, as shown in Exhibit A-9.

EXHIBIT A-9



a. Electronic Information Services

Electronic information services are data bases that provide specific information via terminal- or computer-based inquiry, including items such as stock prices, legal precedents, economic indicators, periodical literature, medical diagnosis, airline schedules, automobile valuations, etc. The terminals used may be computers themselves, such as communications servers or personal computers.

Users inquire into and extract information from the data bases. They may load extracted data into their own computer systems; the vendor does not provide data processing or manipulation capability as part of the electronic information service and users cannot update the vendor's data bases. However, the vendor may offer other services (network applications or processing services) that do offer processing or manipulation capability.

The two kinds of electronic information services are:

- *On-line Data Bases* - Structured, primarily numerical data on economic and demographic trends, financial instruments, companies, products, materials, etc.

- Unstructured, primarily textual information on people, companies, events, etc. These are often news services.

While electronic information services have traditionally been delivered via networks, there is a growing trend toward the use of CD ROM optical disks to support or supplant on-line services, and these optical disk-based systems are included in the definition of this delivery mode.

b. Network Applications

Value-Added Network Services (VAN Services) - VAN services are enhanced transport services which involve adding such functions as automatic error detection and correction, protocol conversion, and store-and-forward message switching to the provision of basic network circuits.

While VAN services were originally provided only by specialized VAN carriers (Tymnet, Telenet, etc.), today these services are also offered by traditional common carriers (AT&T, Sprint, etc.). Meanwhile, the VAN carriers have also branched into the traditional common carriers' markets and are offering unenhanced basic network circuits as well.

Electronic Data Interchange (EDI) - Application-to-application electronic exchange of business data between trade partners or facilitators using a telecommunications network.

Electronic Information Interchange- The transmission of messages across an electronic network managed by a services vendor, including electronic mail, voice mail, voice messaging, and access to Telex, TWX, and other messaging services. This also includes bulletin board services.

8. Equipment Services

☆The equipment services delivery mode includes two submodes. Both deal with the support and maintenance of computer equipment.

☆*Equipment Maintenance* - Services provided to repair, diagnose problems and provide preventive maintenance both on-site and off-site for computer equipment. The costs of parts, media and other supplies are excluded. These services are typically provided on a contract basis.

☆*Environmental Services* - Composed of equipment and data center related special services such as cabling, air conditioning and power supply, equipment relocation and similar services.

D
Computer Equipment

☆These definitions have been included to provide the basis for market segmentation in the software products markets.

☆*Computer Equipment* - Includes all computer and telecommunications equipment that can be separately acquired with or without installation by the vendor and not acquired as part of an integrated system. Unless otherwise noted in an INPUT forecast, computer equipment is only included where it is part of the purchase of services or software products (e.g., turnkey systems and systems integration).

☆*Peripherals* - Includes all input, output, communications, and storage devices (other than main memory) that can be channel connected to a processor, and generally cannot be included in other categories such as terminals.

☆*Input Devices* - Includes keyboards, numeric pads, card readers, light pens and track balls, tape readers, position and motion sensors, and analog-to-digital converters.

☆*Output Devices* - Includes printers, CRTs, projection television screens, micrographics processors, digital graphics, and plotters

☆*Communication Devices* - Includes modem, encryption equipment, special interfaces, and error control

☆*Storage Devices* - Includes magnetic tape (reel, cartridge, and cassette), floppy and hard disks, solid state (integrated circuits), and bubble and optical memories

☆*Computer Systems* - Includes all processors from personal computers to supercomputers. Computer systems may require type- or model-unique operating software to be functional, but this category excludes applications software and peripheral devices and processors or CPUs not provided as part of an integrated (turnkey) system.

☆*Personal computers* - Smaller computers using 8-, 16-, or 32-bit computer technology. Generally designed to sit on a desktop and are portable for individual use. Price generally less than $5,000.

☆*Workstations* - High-performance, desktop, single-user computers often employing Reduced Instruction Set Computing (RISC). Workstations provide integrated, high-speed, local network-based services such as data base access, file storage and back-up, remote communications, and peripheral support. These products usually cost from $5,000 to $15,000.

☆*Minicomputer or midsize computers* - Minicomputers are generally priced from $15,000 to $350,000. Many of the emerging client/server computers are in this category.

☆*Mainframe or large computers* - Traditional mainframe and supercomputers costing more than $350,000.

E
Sector Definitions

1. Industry Sector Definitions

INPUT structures the information services market into industry sectors such as process manufacturing, insurance, transportation, etc. The definitions of these sectors are based on the 1987 revision of the Standard Industrial Classification (SIC) code system. The specific industries (and their SIC codes) included under these industry sectors are detailed in Exhibit A-10.

INPUT includes all delivery modes except systems software products and equipment services in industry market sectors. See Exhibit A-9 and section E-3 (Delivery Mode Reporting by Sector).

Note: SIC code 88 is Personal Households. INPUT does not currently analyze or forecast information services in this market sector.

EXHIBIT A-10

Industry Sector Definitions

Industry Sector	SIC Code	Description
Discrete Manufacturing	23xx	Apparel and other finished products
	25xx	Furniture and fixtures
	27xx	Printing, publishing and allied industries
	31xx	Leather and leather products
	34xx	Fabricated metal products, except machinery and transportation equipment
	35xx	Industrial and commercial machinery and computer equipment
	36xx	Electronic and other electrical equipment and components, except computer equipment
	37xx	Transportation equipment
	38xx	Instruments; photo/med/optical goods; watches/clocks
	39xx	Miscellaneous manufacturing industry
Process Manufacturing	10xx	Metal mining
	12xx	Coal mining
	13xx	Oil and gas extraction
	14xx	Mining/quarrying nonmetalic minerals
	20xx	Food and kindred products
	21xx	Tobacco products
	22xx	Textile mill products
	24xx	Lumber and wood products, except furniture
	26xx	Paper and allied products
	28xx	Chemicals and allied products
	29xx	Petroleum refining and related industries
	30xx	Rubber and miscellaneous plastic products
	32xx	Stone, clay, glass and concrete products
	33xx	Primary metal industries
Transportation Services	40xx	Railroad transport
	41xx	Public transit/transport
	42xx	Motor freight transport/warehousing
	43xx	U.S. Postal Service
	44xx	Water transportation
	45xx	Air transportation (including airline reservation services in 4512)
	46xx	Pipelines, except natural gas
	47xx	Transportation services (including 472x, arrangement of passenger transportation)

EXHIBIT A-10 (CONT.)

Industry Sector Definitions

Industry Sector	SIC Code	Description
Telecommunications	48xx	Communications
Utilities	49xx	Electric, gas and sanitary services
Retail Distribution	52xx	Building materials
	53xx	General merchandise stores
	54xx	Food stores
	55xx	Automotive dealers, gas stations
	56xx	Apparel and accessory stores
	57xx	Home furniture, furnishings and accessory stores
	58xx	Eating and drinking places
	59xx	Miscellaneous retail
Wholesale Distribution	50xx	Wholesale trade - durable goods
	51xx	Wholesale trade - nondurable goods
Banking and Finance	60xx	Depositary institutions
	61xx	Nondepositary institutions
	62xx	Security and commodity brokers, dealers, exchanges and services
	67xx	Holding and other investment offices
Insurance	63xx	Insurance carriers
	64xx	Insurance agents, brokers and services
Health Services	80xx	Health services
Education	82xx	Educational services

EXHIBIT A-10 (CONT.)

Industry Sector Definitions

Industry Sector	SIC Code	Description
Business Services	65xx	Real estate
	70xx	Hotels, rooming houses, camps, and other lodging places
	72xx	Personal services
	73xx	Business services (except hotel reservation services in 7389)
	7389x	Hotel reservation services
	75xx	Automotive repair, services and parking
	76xx	Miscellaneous repair services
	78xx	Motion pictures
	79xx	Amusement and recreation services
	81xx	Legal services
	83xx	Social services
	84xx	Museums, art galleries, and botanical/zoological gardens
	86xx	Membership organizations
	87xx	Engineering, accounting, research, management, and related services
	89xx	Miscellaneous services
Federal Government	9xxx	
State and Local Government	9xxx	
Miscellaneous Industries	01xx	Agricultural production - crops
	02xx	Agricultural production - livestock/animals
	07xx	Agricultural services
	08xx	Forestry
	09xx	Fishing, hunting and trapping
	15xx	Building construction - general contractors, operative builders
	16xx	Heavy construction - contractors
	17xx	Construction - special trade contractors

2. Cross-Industry Sector Definitions

INPUT has identified seven cross-industry market sectors. These sectors or markets involve multi-industry applications such as human resource systems, accounting systems, etc.

- In order to be included in an industry sector, the service or product delivered must be specific to that sector only. If a service or product is used in more than one industry sector, it is counted as cross-industry.

- INPUT only includes the turnkey systems, applications software products, and transaction processing services in the cross-industry sectors.

The seven cross-industry markets are:

Accounting - consists of applications software products and information services that serve such functions as:

- General ledger
- Financial management
- Accounts payable
- Accounts receivable
- Billing/invoicing
- Fixed assets
- International accounting
- Purchasing
- Taxation
- Financial consolidation

- Excluded are accounting products and services directed to a specific industry, such as tax processing services for CPAs and accountants within the business services industry sector.

Human Resources - consists of application solutions purchased by multiple industry sectors to serve the functions of human resources management and payroll. Examples of specific applications within these two major functions are:

- Employee relations
- Benefits administration
- Government compliance
- Manpower planning
- Compensation administration
- Applicant tracking
- Position control
- Payroll processing

Education and Training - consists of education and training for information systems professionals and users of information systems delivered as a software product, turnkey system or through processing services. The market for computer-based training tools for the training of any employee on any subject is also included.

Office Systems consists of the following:

- Integrated office systems (IOS)
- Word processing
- Desktop publishing
- Electronic publishing
- Image systems

- IOSs—such as IBM's OfficeVision, HP's NewWave Office and DEC's All-In-1—typically include the following core functions, all of which are accessed from the same desktop: electronic mail, decision support systems, time management and filing systems.

- Office systems graphics include presentation graphics (which represent the bulk of office systems graphics), paint and line art, page description languages, and electronic form programs.

- The fundamental difference between electronic publishing and desktop publishing (within the office systems sector) is that electronic publishing encompasses a method of document management and control from a single point—regardless of how many authors/locations work on a document—whereas desktop publishing is a personal productivity tool and is generally a lower end product residing on a personal computer.

- Electronic or computer publishing systems that are sold strictly and specifically to commercial publishers, printers, and typesetters are excluded from cross-industry consideration and are included in the discrete manufacturing industry.

Engineering and Scientific encompasses the following applications:

- Computer-aided design and engineering (CAD and CAE)
- Structural analysis
- Statistics/mathematics/operations research
- Mapping/GIS

- Computer-aided manufacturing (CAM) or CAD that is integrated with CAM is excluded from the cross-industry sector as it is specific to the manufacturing industries. CAD or CAE that is dedicated to integrated circuit design is also excluded because it is specific to the semiconductor industry.

Planning and Analysis consists of software products and information services in four application areas:

- Executive Information Systems (EIS)
- Financial modeling or planning systems
- Spreadsheets
- Project management

Sales and Marketing encompasses marketing management and sales analysis application solutions.

- Sales and marketing includes:

  - Sales analysis
  - Marketing management
  - Demographic market planning models

3. Delivery Mode Reporting by Sector

This section describes how the delivery mode forecasts relate to the market sector forecasts. Exhibit A-11 summarizes the relationships.

- *Processing services* - The transaction processing services submode is forecasted for each industry and cross-industry market sector. The utility and other processing services submodes are forecasted in total market in the general market sector.

- *Turnkey systems* - Turnkey systems is forecasted for the 15 industry and 7 cross-industry sectors. Each component of turnkey systems is forecasted in each sector.

- *Applications software products* - The applications software products delivery mode is forecasted for the 15 industry and 7 cross-industry sectors. In addition, each forecast is broken down by platform level: mainframe, minicomputer and workstation/PC.

- *Systems operations* - Each of the systems operations submodes is forecasted for each of the 15 industry sectors.

- *Systems integration* - Systems integration and each of the components of systems integration are forecasted for each of the 15 industry sectors.

- *Professional services* - Professional services and each of the submodes is forecasted for each of the 15 industry sectors.

EXHIBIT A-11

Delivery Mode versus Market Sector Forecast Content

Delivery Mode	Submode	Market Sectors		
		Industry Sectors	Cross-Industry Sectors	General
Processing Services	Transaction	X	X	
	Utility			X
	Other			X
Turnkey Systems		X	X	
Applications Software Products		X	X	
Systems Operations	Platform	X		
	Applications	X		
Systems Integration		X		
Professional Services		X		
Network Services	Network Applications	X		
	Electronic Information Services	X		X
Systems Software Products				X
Equipment Services				X

- *Network services* - The network applications submode of network services forecasted for each of the 15 industry sectors.

  Industry and cross-industry electronic information services are forecast in relevant market sectors. The remainder of electronic information services is forecasted in total for the general market sector.

- *Systems software products* - Systems software products and its submodes are forecasted in total for the general market sector. Each submode forecast is broken down by platform level: mainframe, minicomputer and workstation/PC.

- *Equipment services* - Equipment services and its submodes are forecasted in total in the general market sectors.

F

Vendor Revenue and User Expenditure Conversion

The size of the information services market may be viewed from two perspectives: vendor (producer) revenues and user expenditures. INPUT defines and forecasts the information services market in terms of user expenditures. User expenditures reflect the markup in producer sales when a product such as software is delivered through indirect distribution channels (such as original equipment manufacturers (OEMs), retailers and distributors). The focus on user expenditure also eliminates the double counting of revenues that would occur if sales were tabulated for both producer (e.g., Lotus) and distributor (e.g., ComputerLand).

For most delivery modes, vendor revenues and user expenditures are fairly close. However, there are some areas of significant difference. Many microcomputer software products, for example, are marketed through distribution channels. To capture the valued added through these distribution channels, adjustment factors are used to convert estimated information services vendor revenues to user expenditures.

For some delivery modes, including software products, systems integration and turnkey systems, there is a significant volume of intra-industry sales. For example, systems integrators purchase software and subcontract the services of other professional services vendors. Turnkey vendors incorporate purchased software into the systems they sell to users.

To account for such intra-industry transactions, INPUT uses conversion ratios to derive the estimate of end-user expenditures.

Exhibit A-12 summarizes the net effect of the various ratios used by INPUT to convert vendor revenues to user expenditure (market size) figures for each delivery mode.

EXHIBIT A-12

Vendor Revenue to User Expenditure Conversion

Delivery Mode	Vendor Revenue Multiplier
Applications Software Products	1.18
Systems Software Products	1.10
Systems Operations	0.95
Systems Integration	0.95
Professional Services	0.99
Network Services	0.99
Processing Services	0.99
Turnkey Systems	0.95
Equipment Services	0.99

Forecast Data Base

Based on vendor and user interview data, INPUT believes expenditures for the sales and marketing cross-industry sector were overstated in the past.

EXHIBIT B-1

Sales and Marketing Cross-Industry Sector
User Expenditure Forecast by Delivery Mode, 1991-1997

Delivery Modes	1991 ($ M)	Growth 90-91 (%)	1992 ($ M)	1993 ($ M)	1994 ($ M)	1995 ($ M)	1996 ($ M)	1997 ($ M)	CAGR 92-97 (%)
Sector Total	1,166	6	1,232	1,316	1,408	1,510	1,629	1,778	8
Processing Services	556	4	575	600	625	650	675	700	4
- Transaction Processing	556	4	575	600	625	650	675	700	4
Turnkey Systems	275	8	297	324	353	385	420	457	9
Applications Software Products	335	5	360	392	430	475	534	621	12
- Mainframe	190	6	200	213	225	240	254	270	6
- Minicomputer	75	6	80	84	90	95	100	106	6
- Workstation/PC	70	15	80	95	115	140	180	245	25

EXHIBIT B-2

Sales and Marketing Cross-Industry Sector
1992 MAP Data Base Reconciliation by Delivery Mode

Delivery Modes	1991 Market				1996 Market				91-96 CAGR per data 91 rpt (%)	91-96 CAGR per data 92 rpt (%)
	1991 Report (Fcst) ($ M)	1992 Report (Actual) ($ M)	Variance from 1991 Report ($ M)	Variance from 1991 Report (%)	1991 Report (Fcst) ($ M)	1992 Report (Fcst) ($ M)	Variance from 1991 Report ($ M)	Variance from 1991 Report (%)		
Sector Total	1,513	1,166	-192	-13	2,344	1,629	-715	-31	9	7
Processing Services	556	556	0	0	676	675	-1	0	4	4
- Transaction Processing	556	556	0	0	676	675	-1	0	4	4
Turnkey Systems	471	275	-196	-42	725	420	-305	-42	9	9
Applications Software Products	486	335	-151	-31	943	534	-409	-43	14	10
- Mainframe	191	190	-1	-1	268	254	-14	-5	7	6
- Minicomputer	129	75	-54	-42	208	100	-108	-52	10	6
- Workstation/PC	166	70	-96	-58	467	180	-287	-61	23	21

About INPUT

INPUT is a worldwide consulting and market research firm uniquely focused on the information technology services and software markets. Executives in many technically advanced companies in North America, Europe, and Japan rely on INPUT for data, objective analysis, and insightful opinions to support their business plans, market assessments, and technology directions. By leveraging INPUT's considerable knowledge and expertise, clients make informed decisions more quickly, and benefit by saving on the cost of internal research.

Since 1974, INPUT has compiled the most extensive research base available on the worldwide information services market and its key segments, providing detailed market forecasts, vertical industry sector analysis and forecasts and analysis of vendor strategies and products. INPUT delivers specific expertise in the fast changing areas of outsourcing, systems integration, EDI/electronic commerce, software development/CASE, and on the impact of downsizing.

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