

Market Analysis  
Program (MAP)

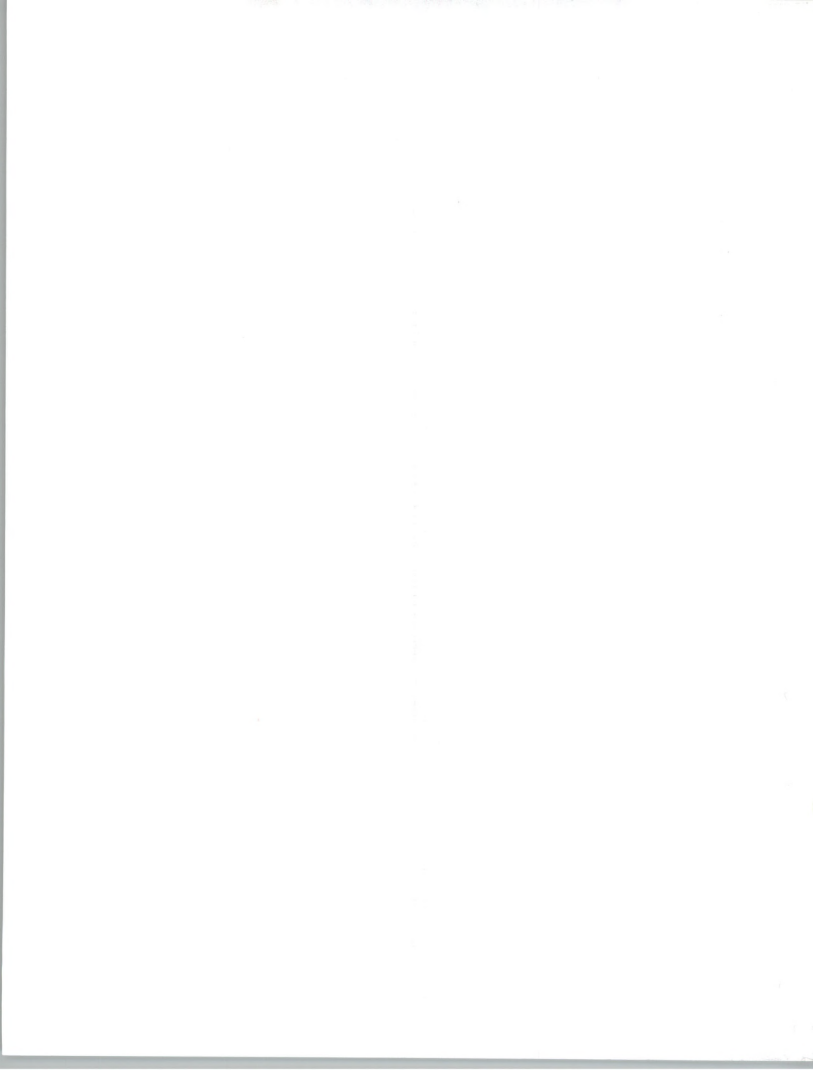
**Cross-Industry  
Markets  
1989-1994**

Accounting  
Sector

Forecast Update

**INPUT<sup>®</sup>**

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



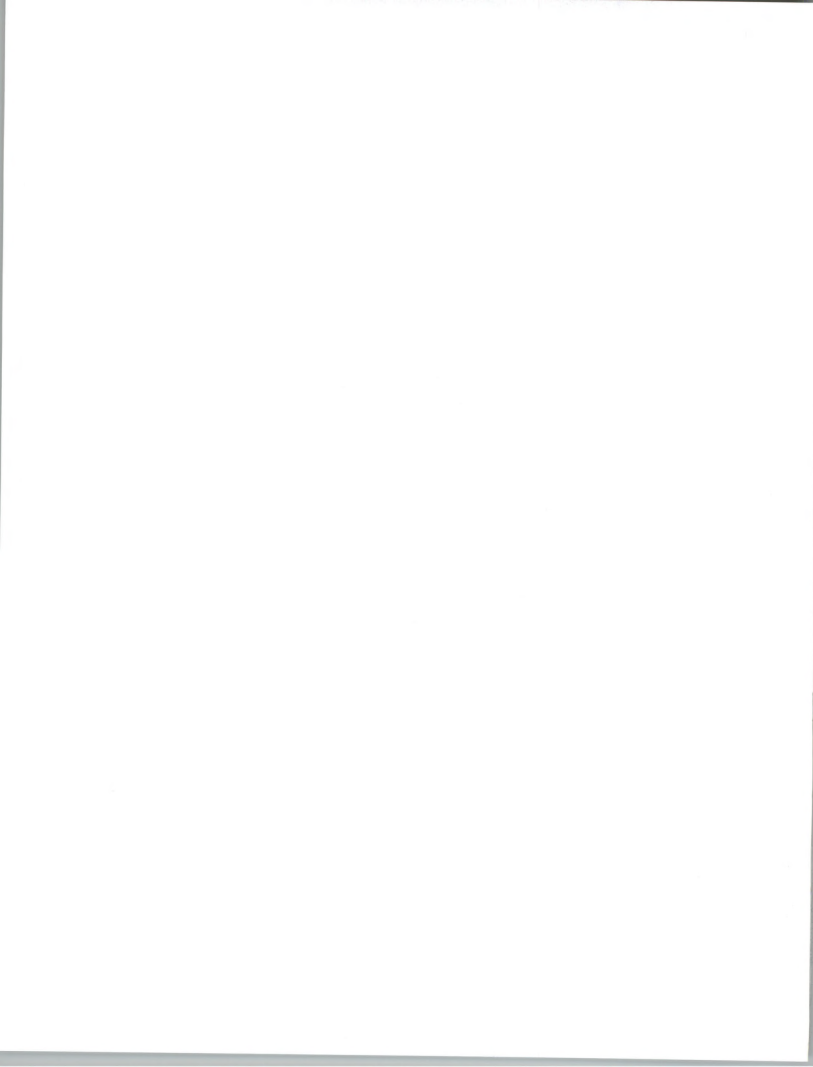
APRIL 1990

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**CROSS-INDUSTRY MARKETS  
1989-1994**

**ACCOUNTING SECTOR**

**FORECAST UPDATE**



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**Market Analysis Program**

***Cross-Industry Markets, 1989-1994***  
***Accounting Sector***

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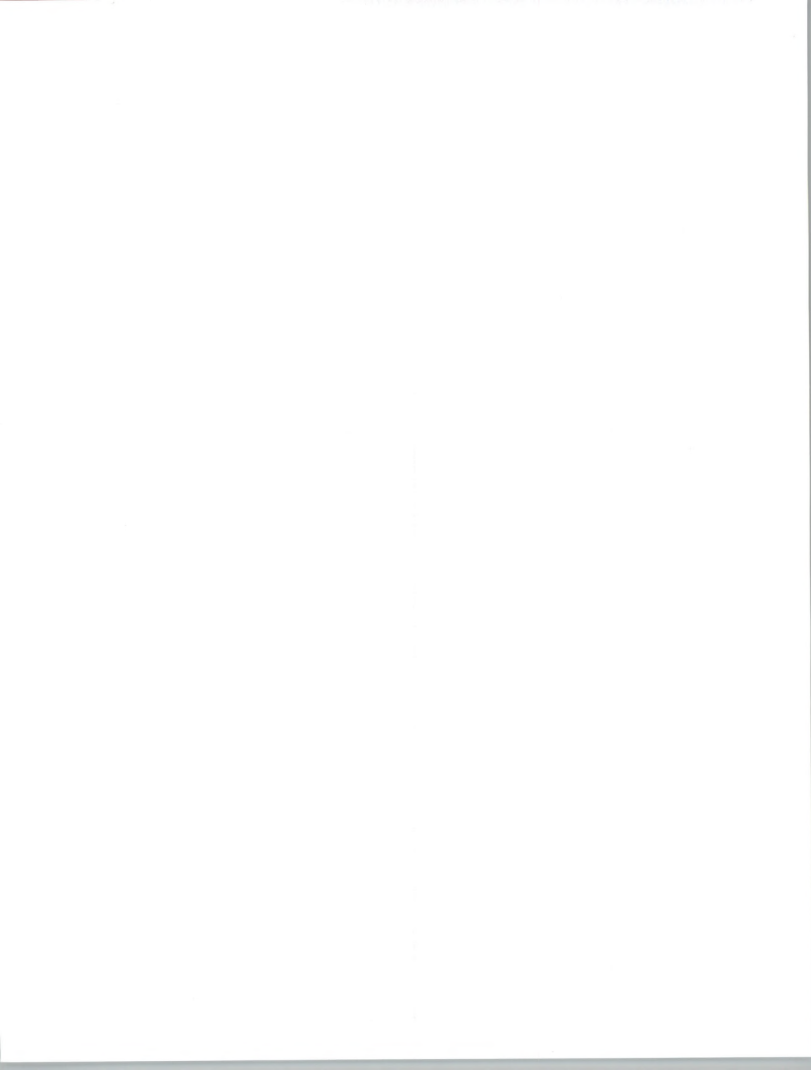




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## Introduction

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### A

#### Purpose

The purpose of this Forecast Update is to provide the 1989 INPUT forecasts for the accounting cross-industry sector and commentary on recent market and competitive issues.

This update should be used in conjunction with the cross-industry market report issued in December 1988. Forecasts contained in this Update are reconciled to the data in that report.

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### B

#### Environment and Market Changes

INPUT identified a number of changes to the business environment in the accounting cross-industry market. They are outlined below.

As more information about IBM's future directions in SAA becomes known, vendors of mainframe-based accounting application software packages must be positioned to follow this key aspect of IBM's software strategy.

Mainframe-based accounting application software vendors must closely follow IBM's releases of its DB2 relational data base management system software. A relational data base is crucial to supporting a distributed processing architecture. Vendors have begun developing DB2-based accounting software and using it to convert users of older, batch processing-based accounting software to the powerful, flexible DB2 environment.

More organizations are implementing new cost-accounting systems. Older systems have not kept up with the following changes in manufacturing environments:



Accounting software has not caught up with improvements in computer hardware; few accounting packages are written for distributed processing and decentralized processing computing environments. Truly decentralized processing will require a relational data base management system (RDBMS), since international records must be tied together.

Users have migrated from separate mainframe-based modules to integrated minicomputer-based accounting systems, especially those running on the Digital Equipment VAX minicomputer.

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**C****Accounting Sector  
Activities**

Resellers are playing an increasingly important role in the accounting software market. Telemarketing is also becoming important in this area.

Accountants and other resellers are playing an increasingly important role as qualified installers of accounting application software and are offering the following services:

- Assistance in closing sales
- Training in use of software
- Advice on adapting client's manual system
- Installing the software
- Initializing and setting up the software
- Developing an implementation plan and timetable
- Providing guidance throughout the implementation
- Providing ongoing support

To support this army of local support representatives, accounting software vendors are providing special services to qualified installers, including:

- Training in installing and using the software
- Demo versions of the software
- Preferential technical hotline support
- Advance notice of new software updates
- Qualified installer newsletter containing tips





## Market Forecast

### A

1989 - 1994 Forecast

#### 1. Overall Accounting Sector

Between 1988 and 1989, user expenditures in the accounting sector grew 12%, from \$2.9 billion to \$3.3 billion. Between 1989 and 1994, user expenditures will grow at a compound annual rate of 8% to \$4.9 billion.

The forecast 8% growth rate is driven by expenditures for workstation/personal computer-based application software products, which will grow significantly faster than the overall market.

#### 2. Processing Services

Expenditures in 1989 for processing services totaled \$1.0 billion and will grow at a 3% compound annual rate to \$1.2 billion in 1994.

Users purchase transaction processing services when they use accounting application software running on third-party computer systems. Vendors of such services include:

- National public accounting firms
- Regional public accounting firms
- Local bookkeeping firms
- Industry associations (American Institute of Certified Public Accountants)
- Traditional processing service bureaus





Medium-sized and smaller businesses will continue to use third-party application software services tailored to specific businesses. Although retail prices of computer systems and most application software are decreasing, support costs are rising. More importantly, many small businesses cannot afford paid staff to handle application software development, software maintenance, computer operations, and support of internal computer users.

### 3. Application Software Products

Between 1988 and 1989, user expenditures in the accounting sector for application software products grew 20%, from \$1.5 billion to \$1.8 billion. Between 1989 and 1994, user expenditures for packaged application software will grow at an overall compound annual rate of 12% to \$3.2 billion as:

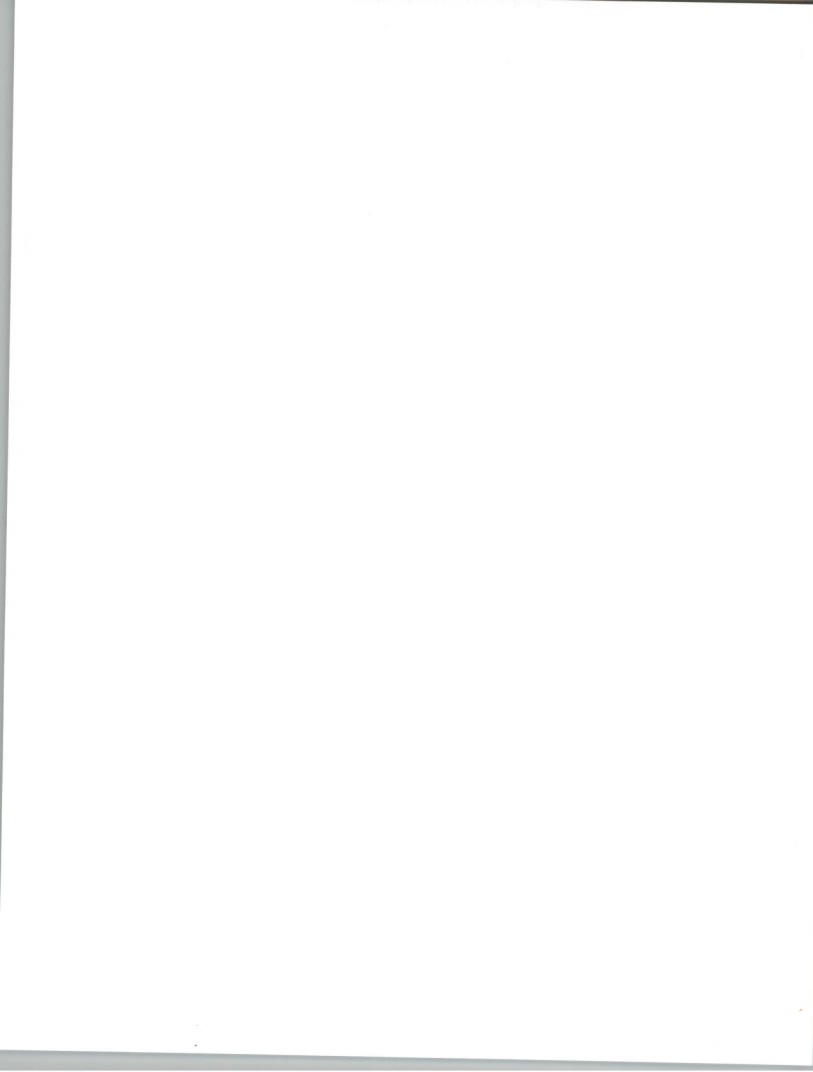
- More organizations change from developing accounting software in-house to using third-party-developed accounting software.
- More accounting software is available for non-IBM products, such as H-P and DEC computers.
- Accounting software offers seamless portability across different operating environments and versatile, user-friendly report-writing capabilities.

To better support users of decentralized accounting packages, vendors are providing:

- Better on-site user training in financial processing methodologies (previously controlled by in-house accountants)
- Improved 4GL interfaces

Application software running on mainframes and minicomputers will grow at a substantially slower rate than the forecast for application software running on workstations/PCs. During the next five years, unit shipments of mainframe computers and minicomputers will slow to 3-6% and 7-9%, respectively. The value of application software will grow near the overall system unit growth rate, reflecting the value of converting older batch accounting systems to decentralized environments.

User expenditures for workstation/PC-based accounting application software of \$637 million in 1989 will grow at a healthy 21% CAGR to reach \$1.7 billion in 1994. A key driving force is strong spending by organizations of all sizes for PC-based software for the following key accounting applications:

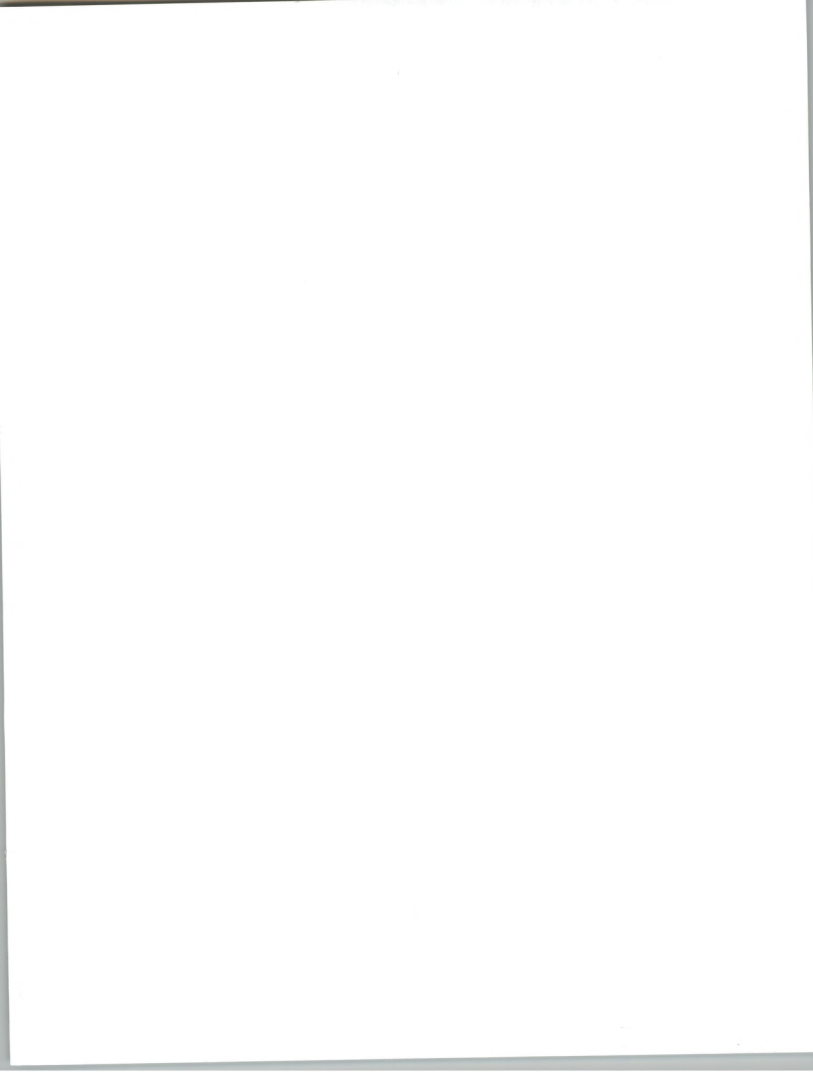


- Integrated accounting
- Financial analysis
- Financial modeling
- Financial planning
- Foreign currency translation
- Consolidation of international operations

#### 4. Turnkey Systems

Users spent \$410 million in 1989 for accounting-oriented turnkey systems, an increase of 3% from 1988. Over the next five years, user expenditures will grow 3% annually to reach \$480 million in 1994.

Sometimes, in marketing their systems to small businesses, vertically oriented value-added resellers (VARs) sell a computer with accounting software as a turnkey system as the first step. VARs then sell their industry-specialized software as add-ons.





## Competitive Developments

### A

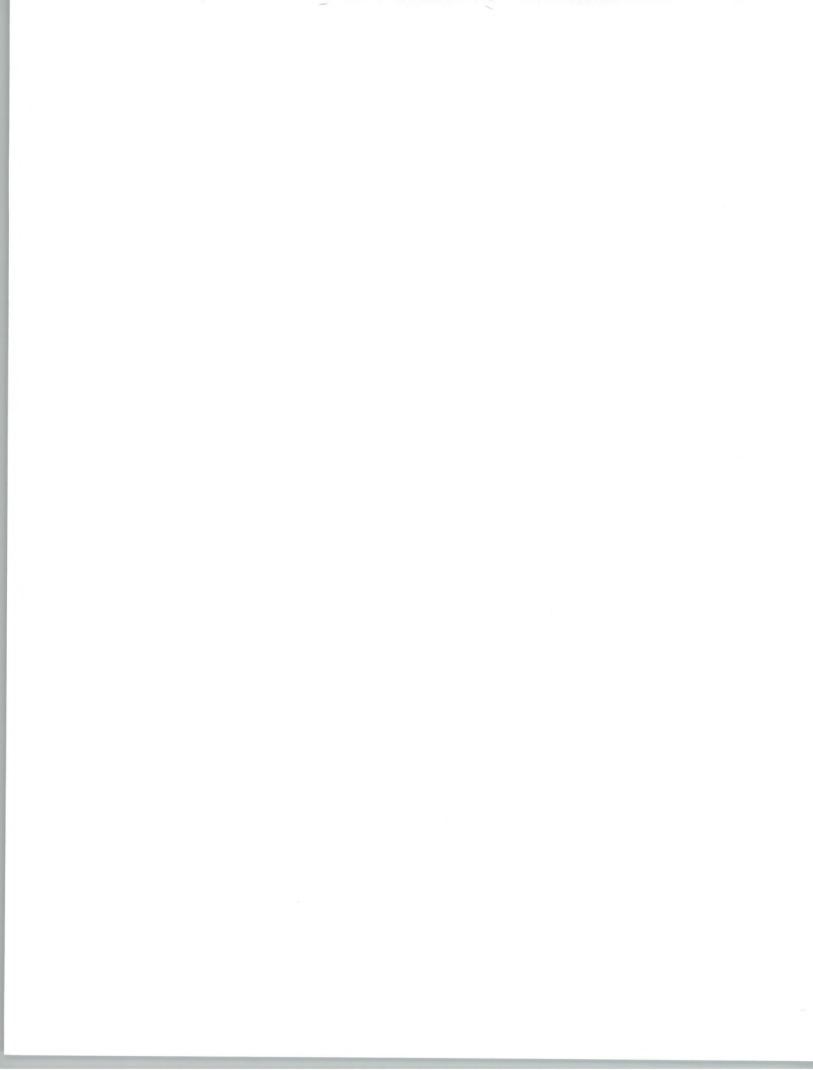
#### Events in the Accounting Sector

During 1989, the following mergers and acquisitions of information services vendors selling to the accounting sector occurred:

- In August 1989, Integral Systems Inc. (Walnut Creek, CA) merged with Data Design Associates (Sunnyvale, CA) through an exchange of stock valued at \$30 million.
- In November 1989, Dun & Bradstreet (New York, NY) acquired the outstanding common stock of Management Science America (Atlanta, GA) for \$333 million.

Other vendor activities included:

- IBM stopped selling (in May 1989) its accounting software. Telephone support of installed software continued through February 1990.
- Open Systems (Eden Prairie, MN), a subsidiary of Unisys Corp., created a telemarketing program to support its resellers by identifying potential buyers of its software.
- Peachtree Software continues to grow very rapidly by providing high-quality, low-cost accounting software through direct marketing. It went through an LBO in 1989.



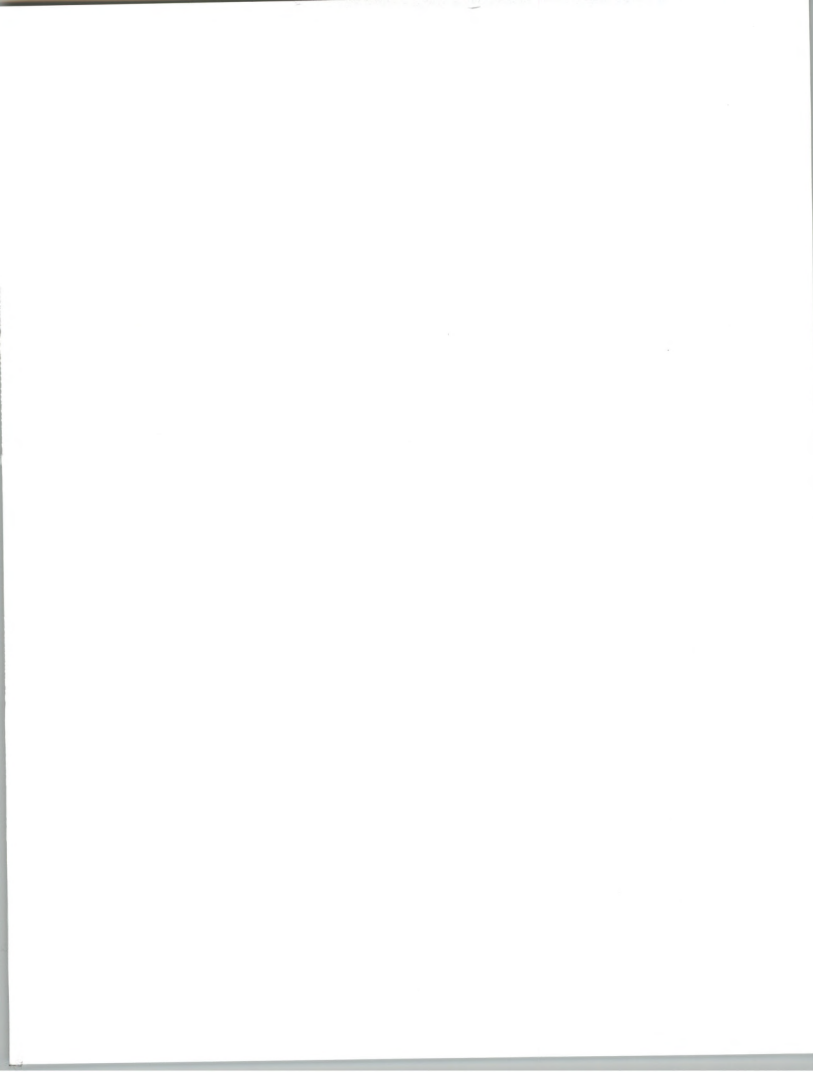
**B****Vendor Profiles  
Related to the  
Accounting Sector**

The following information services vendors selling to the accounting sector are profiled:

- Armor Systems, Inc.
- Integral Systems, Inc.
- Management Science America, Inc.
- MCBA, Inc.
- McCormack & Dodge Corporation
- PBL Associates
- Ross Systems Incorporated

Each profile contains the following information:

- The company
- Key products and services
- Industry markets
- Geographic markets
- Computer hardware and software





## COMPANY PROFILE

---

### **ARMOR SYSTEMS, INC.**

324 North Orlando Avenue  
Maitland, FL 32751  
(407) 629-0753

Richard Bourgie, President and CEO  
Private Corporation  
Total Employees: 100  
Total Revenue, Fiscal Year End  
12/31/88: \$10,000,000\*

\* INPUT estimate

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### **The Company**

Armor Systems, Inc. (Armor) provides microcomputer-based software for accounting and retail management functions. 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 for general applications, Excalibur Series<sup>®</sup>.

INPUT estimates that Armor's revenue has remained relatively stable from 1985 through 1989 at approximately \$10 million annually.

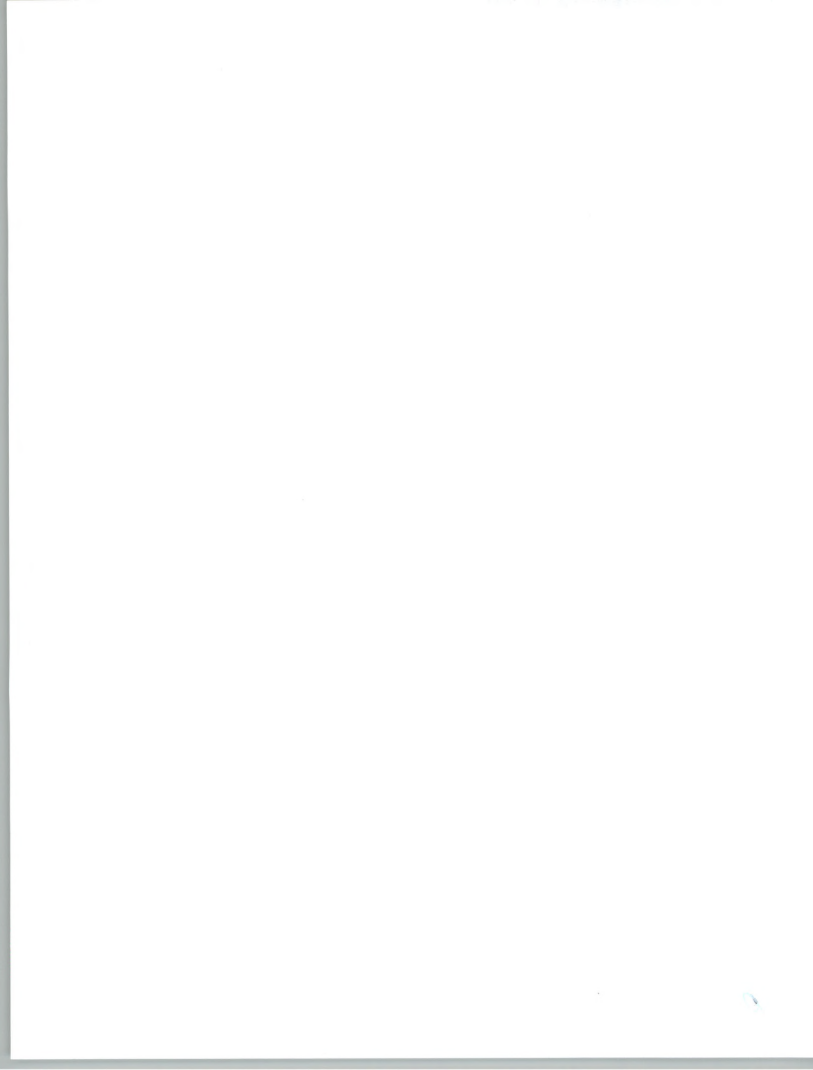
Armor currently employs 100 people.

### **Key Products and Services**

One hundred percent of Armor's 1988 revenue was derived from its microcomputer-based software products and associated support services.

In 1988 Armor released Excalibur+ Premier<sup>™</sup>, an updated version of its Excalibur business software.

- Excalibur+ Premier is an integrated 13-module business management system with built-in networking, multiuser and multitasking capabilities.
- The product is written in C.
- Excalibur+ Premier runs on most major hard-disk microcomputers and is compatible with a variety of operating systems and networks.
- Modules available include Accounts Payable, Accounts Receivable, Billing, General Ledger, Inventory Control, Job Cost, Order Entry, Payroll, Point of Sale, Quicksale, and Purchase Orders (all retail priced at \$695 per module), and



Customer Information/DataBase Management and Bank Reconciliation (retail priced at \$395). Special dealer pricing and dealer volume discounts are available.

- Excalibur + Premier allows up to 32 users in a network environment to access the same file.
- Armor offers an Import Data Utility to transfer ASCII files from third-party sources (e.g., catalog update services and productivity programs) into Excalibur + Premier.
- The company also offers a report generator to provide Excalibur + Premier users with customized reports.

In October of 1988, Armor introduced E + BASIC Retail Management and General Accounting systems for smaller businesses.

- E + BASIC Retail Management System provides point of sale, accounts receivable, and inventory control billing capabilities; prints price, shelf, and mailing labels; automatically computes FIFO, LIFO, and average cost; automatic cash drawer balancing; custom-report formatting; and bar-code reader support.
- E + BASIC General Accounting provides general ledger, accounts payable, and payroll applications.
- E + BASIC can be used with up to 12 workstations or check-out counters. Network compatibility is also available.
- E + BASIC is designed to be used by smaller retail and service businesses.
- The E + BASIC system is priced at \$695.

Armor provides various dealer and user-support services as follows:

- The Dealer Advantage Program provides dealer instruction relating to Armor products and marketing techniques, telephone support, newsletters, and point-of-purchase materials for specific vertical markets to its 3,000 dealer network.
- The Customer Assistance Program is designed to provide end users with additional technical and operational assistance over the telephone.



- On-line support and on-line demonstrations are also available to computer resellers.
- Armor provides dealers with a 90-day Risk-Free Guarantee that provides full refunds of dealer costs if a client returns his installed product within 90 days of purchase.

**Industry Markets**

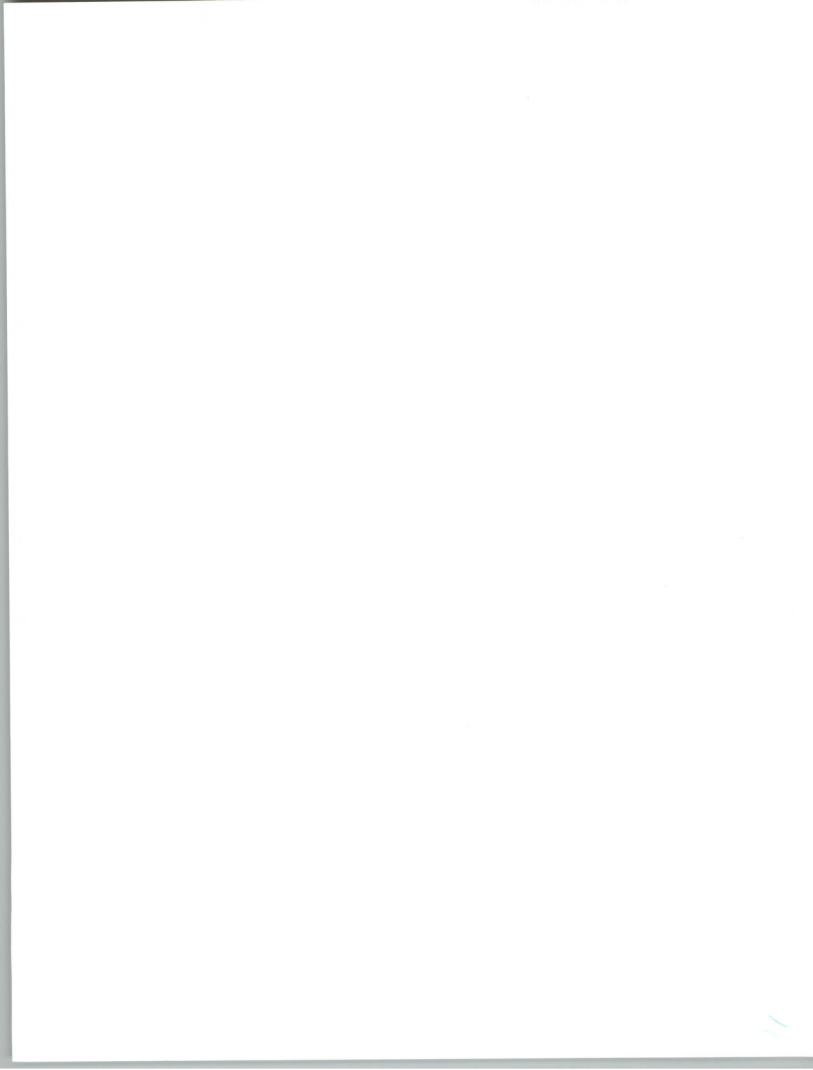
Armor's products are sold to small-to medium-sized businesses in the following industry sectors: retail distribution, wholesale distribution, discreet manufacturing, services, construction, and hospitality.

**Geographic Markets**

Approximately 99% of Armor's 1988 revenue was derived from the U.S. The remaining 1% was derived from Canada.

**Computer Hardware and Software**

Armor uses a variety of microcomputers installed for research and development and customer support.



## COMPANY PROFILE

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**INTEGRAL SYSTEMS, INC.**  
2185 North California Boulevard  
Walnut Creek, CA 94596-9496  
(415) 939-3900

Brian M. Aspland, President and CEO  
Private Corporation  
Total Employees: 420  
Total Revenue, Fiscal Year End  
12/31/88: \$57,000,000\*

\*Pro forma estimate

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### The Company

Integral Systems, Inc. develops, markets, and supports financial, accounting, and human resource management application software products for IBM mainframes and IBM System/38 and AS/400 midrange systems.

Effective August 10, 1989, Integral merged with Data Design Associates, Inc. of Sunnyvale (CA).

- Under the terms of the agreement between the privately held companies, Integral exchanged a combination of cash and stock for 100% of the outstanding stock of Data Design in a transaction valued at approximately \$30 million.
- Integral, founded in 1972, specializes in human resource management software for IBM mainframes. Its wholly-owned subsidiary, Sysgen, supplies financial and human resource application software for IBM midrange computers.
  - Integral has experienced a compound annual revenue growth over the past five years in excess of 44%. For the fiscal year ending December 31, 1988, the company had revenue of \$38.4 million and operating profit of \$5 million.
  - Integral had approximately 290 employees at the time of the merger.
- Data Design, founded in 1972, specializes in financial management software for IBM mainframes and intelligent workstation environments.
  - Data Design has recorded a compound annual revenue growth in excess of 23% over the past five years. For the fiscal year ending March 31, 1989, the company's revenue was \$19.2 million and operating profit was \$2.4 million, compared to revenue of \$17 million and operating profit of \$2.3 million for fiscal 1988.





- Data Design had approximately 145 employees at the time of the merger.

Integral management projects that the company's calendar 1989 revenue will exceed \$65 million.

Integral's strategy is to offer a complete portfolio of financial, accounting, and human resource management software across all of IBM's SAA-compliant platforms.

- Over the next six months, Integral product/technological announcements will include: DB2 versions of its financial applications; the approach to full Common User Access (CUA); OfficeVision capabilities for both financial and human resources products; availability of the company's first integrated financial/human resources application, GL/Payroll; and common access tools across all applications.
- Integral is currently developing a mainframe Accounts Receivable product, scheduled for availability in the fourth quarter of 1990.
- On an annualized basis, the company invests an average of 25% of every revenue dollar on ongoing development projects.

Integral's operations are currently organized into three divisions as follows:

- The Human Resources Division, based in Walnut Creek with 235 employees, supports Integral's IBM mainframe human resource management software products.
- The Financials Division, based in Walnut Creek with 135 employees, supports the financial/accounting products formerly provided by Data Design.
- The Midrange Systems Division, based in Raleigh (NC) with 50 employees, supports Sysgen's financial and human resource management products for IBM midrange systems.

Integral's 420 employees are segmented as follows:

Marketing/sales	90
Research and development	130
Customer support	90
Consulting, education, and training	70
General and administrative	40
	420



Integral's primary competitors include McCormack & Dodge, Computer Associates, and Management Science America.

### Key Products and Services

Approximately 50% of Integral's revenue is derived from software license fees and royalties, 30% from software maintenance, and 20% from consulting, training, and other support services.

Integral currently has more than 4,500 software products installed in 1,500 client locations.

A summary of Integral's current software product offerings is shown in the exhibit.

Integral's mainframe products run under various operating systems, including MVS, MVS/XA, DOS/VSE, and OS, and support various data base environments, including DB2.

- Integral was the first independent software vendor to market DB2 applications for its human resources products, and has now sold over 60 licenses.

Integral's midrange products run on IBM System/38 and AS/400 systems.

Integral participated in the early test program and IBM's official announcement of OfficeVision with its integrated office systems product, HR Vision.

- HR Vision, introduced in 1989, combines microcomputer productivity tools with enterprise-wide connectivity, using IBM's Presentation Manager menus and windows and icon-driven tools.

Equal is the software architecture that underlies all Data Design financial management software applications. It allows users to operate identical, fully-featured Data Design applications on a variety of mainframe, midrange, and PC systems. Common modules and application tailoring tools include:

- DD-VIEW, an on-line, interactive query system
- DD-LINK, a micro-to-mainframe link
- DD-AIM, a general translator program
- DD-EDI, for electronic data interchange
- DD-PAINT, for customizing PC screens



## EXHIBIT

## INTEGRAL SOFTWARE PRODUCTS

HUMAN RESOURCE PRODUCTS	FINANCIAL PRODUCTS
<b>Mainframe</b> Personnel Administration Payroll Processing Applicant Management Position Control Benefits Administration Pension Administration Flexible Compensation	<b>Mainframe</b> General Ledger Accounts Payable Purchasing Fixed Asset Accounting Capital Projects
<b>Midrange</b> Personnel Administration Payroll Processing	<b>Midrange</b> General Ledger Accounts Payable Purchase Order Fixed Asset Accounting Accounts Receivable
<b>Microcomputer</b> Affirmative Action Organizational Charting Distributed Personnel Administration Compensation Planning Job Tracking HR Vision	<b>Microcomputer</b> Equal



Support services provided by Integral include the following:

- Implementation and customer support
- Administrative and operational training
- Documentation
- System upgrades and ongoing maintenance
- 24-hour, seven-day hotline access

**Industry Markets**

Integral's products are targeted to medium- to large-sized organizations.

The company has clients in the manufacturing, banking and finance, telecommunications, education, retail, insurance, oil, health care, energy, and entertainment industries, as well as state and local government.

**Geographic Markets**

Approximately 90% of Integral's revenue is derived from the U.S., 5% from Canada, and 5% from other international sources.

Integral markets its products through its nationwide direct sales organization. Regional sales offices are located in Greenwich (CT), Teaneck (NJ), Raleigh (NC), Downers Grove (IL), Los Angeles (CA), Atlanta (GA), Richardson (TX), Walnut Creek (CA), and Willowdale (Ontario, Canada).

During 1989, Integral initiated an international expansion program. Integral's products are now marketed in New Zealand through a distribution agreement with Government Computing Service, Ltd., a full-service computer consulting and support organization in New Zealand.

**Computer Hardware and Software**

Integral has the following computers installed at its data centers in Walnut Creek, Sunnyvale, and Raleigh for research and development and customer support:

- 3 IBM 4381s, MVS, MVS/XA, DOS/VSE, and OS
- 1 IBM System/38, DOS
- 2 IBM AS/400s, RPG III





## COMPANY PROFILE

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### **MANAGEMENT SCIENCE AMERICA, INC.**

3445 Peachtree Road, N.E.  
Atlanta, GA 30326-1276  
(404) 239-2000

John P. Imlay, Jr., Chairman, President,  
and CEO  
Public Corporation, OTC  
Total Employees: 2,369 (12/88)  
Total Revenue, Fiscal Year End  
12/31/88: \$250,009,000

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### **The Company**

Management Science America, Inc. (MSA), founded in 1963, develops, markets, and supports a range of application software packages primarily for use on medium- to large-scale mainframes. These packages include financial and human resources products for cross-industry applications, as well as functionally specific applications for manufacturers, financial institutions, government organizations, health care providers, educational institutions, distributors, and insurance firms.

During the third quarter of 1988, in order to improve operating efficiency and profitability, MSA elected to recast its operations and reposition itself in the software industry.

- As part of this recasting decision, MSA committed to make its products compliant with IBM's Systems Application Architecture (SAA) and consolidate the development of its mainframe manufacturing software into one product line.
- MSA also significantly reduced its staff level, closed certain offices, reorganized its operations, and wrote-off certain capitalized software that was no longer part of the company's strategic direction.
- As a result, MSA's 1988 financials include recasting charges of \$32.6 million representing write-offs of capitalized software, accruals for severance payments, office shut-down costs, and other liabilities.

In May 1989, MSA and IBM announced that IBM had made a 5% equity investment in MSA. Under the terms of the agreement, IBM purchased directly from MSA 882,060 shares of MSA common stock at \$11.50 per share for a total purchase price of \$10.14 million. MSA will use the proceeds of the transaction for general corporate purposes, including continued product development based on IBM's SAA.



MSA's 1988 revenue was \$250 million, a 3% decrease from 1987 revenue of \$258.5 million.

- Losses of \$33.6 million for 1988 include \$32.6 million in recasting charges as previously described.
- During 1987, MSA changed its method of accounting for revenue to recognize software license fees upon delivery of software to customers instead of the former practice of recognizing a substantial portion of the fees upon contract execution.
  - As a result, net losses of nearly \$71 million for 1987 include a charge of approximately \$70.2 million for cumulative effect on prior years of changes in accounting for revenue recognition and income taxes.
  - Although financials prior to 1987 have not been restated, on a pro forma basis (assuming the change in revenue recognition methods was applied retroactively), net losses for 1987 would have been \$726,000.
- A five-year financial summary follows:



**MANAGEMENT SCIENCE AMERICA, INC.  
FIVE-YEAR FINANCIAL SUMMARY  
(\$ thousands, except per share data)**

ITEM	FISCAL YEAR				
	1988	1987	1986	1985	1984
Revenue	\$250,009	\$258,543	\$193,449	\$151,661	\$141,816
• Percent increase (decrease) from previous year	(3%)	(a) 34%	28%	7%	21%
Income (loss) before taxes extraordinary items	\$(33,559)	\$948	\$36,142	\$10,544	\$25,393
• Percent increase (decrease) from previous year	*	(97%)	243%	(58%)	30%
Net income (loss)	\$(33,559)	\$(70,959)	\$18,741	\$6,860	\$243
• Percent increase (decrease) from previous year	*	(c) *	173%	*	(98%)
Earnings (loss) per share	\$(2.02)	\$(4.11)	\$1.03	\$0.39	\$0.01
• Percent increase (decrease) from previous year	*	*	(98%)	2%	51%
Pro forma amounts (d)					
• Net income (loss)	--	\$726	\$13,193	\$3,665	\$(7,286)
• Earnings (loss) per share	--	\$(0.04)	\$0.73	\$0.21	\$(0.43)

\* Percent change not meaningful.

- (a) If pro forma amounts are used, 1987 revenue increased approximately 43% over 1986 pro forma revenue of \$180.8 million.
- (b) Includes recasting charges of approximately \$32.6 million.
- (c) Includes approximately \$71 million in charges from the cumulative effect on changes in accounting for revenue.
- (d) Assumes the change in revenue recognition methods is applied retroactively.

MSA management attributes revenue declines during 1988 to a decline in deliveries of software and a change in the product mix of the items delivered. The change in the mix of revenues in 1988 resulted in part from a change in marketing strategy and price allocation to place greater emphasis on support services, thus increasing the service revenue portion of the initial software package contract compared with the license fee amount.



Revenue for the six months ending June 30, 1989 was \$130.4 million, compared to \$131.9 million for the same period in 1988. Net income was \$6.5 million, compared to net income of \$8.2 million for the first half of 1988.

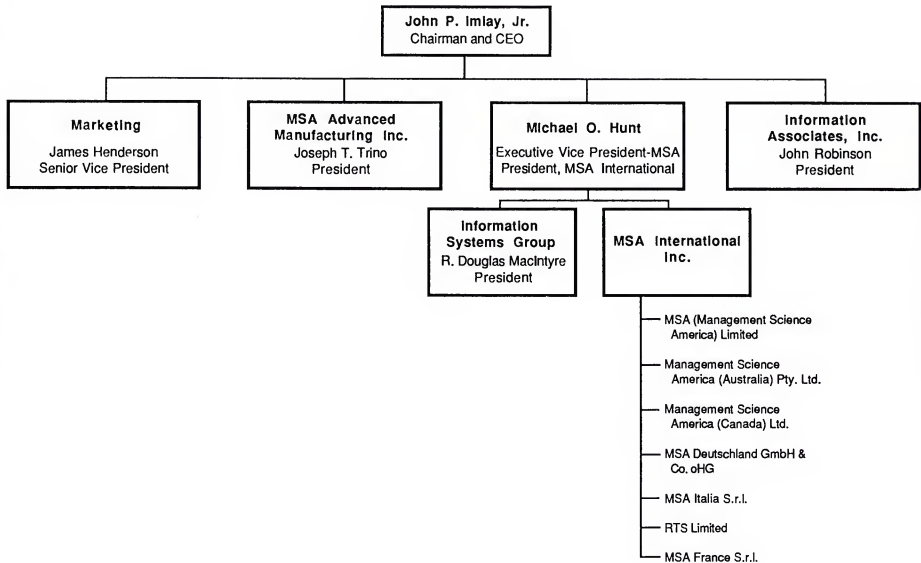
MSA's current organization structure is shown in the exhibit. The company operates through the following units:

- MSA Advanced Manufacturing, Inc. (AMI), formed in 1987, combines the product line acquired with Comserv Corporation in 1986 and MSA's manufacturing products. AMI provides manufacturers with complete MRP II, financial, distribution, and human resource applications. AMI also offers a complete line of educational products including video instruction and training, as well as on-site consulting services.
- MSA Information Systems Group (ISG) markets and supports MSA software products to U.S. customers in banking, insurance, general business, government, utilities, health care, and the services industries. ISG also manages MSA's Market Alliance Program, which involves cooperative product development, support, and marketing with Honeywell Bull, NCR, and Unisys.
- Information Associates, Inc. (IA), headquartered in Rochester (NY), was acquired by MSA in 1986. IA provides application software to the higher education market.
- MSA International, Inc., markets and supports MSA's software products outside the U.S. International operations include:
  - Management Science America (Canada) Ltd., headquartered in Toronto
  - MSA (Management Science America) Limited, headquartered in Maidenhead, Berkshire (U.K.)
  - Management Science America (Australia) Pty. Ltd., in North Sydney
  - MSA Deutschland GmbH & Co. OHG, headquartered in Munich
  - MSA Italia S.r.l., headquartered in Milan
  - MSA France S.A., headquartered in Paris





EXHIBIT  
MSA ORGANIZATION CHART





- RTS Limited, based in Dublin, provides AMAPS manufacturing and financial software products for IBM System 36 and 38 computers. RTS was acquired by MSA in 1986.

As of December 31, 1988, MSA had 2,369 employees. Of these, 1,902 were located in the U.S. and 467 were employed in other countries. The current number of employees is approximately the same.

Major competitors for MSA's financial management software include McCormack & Dodge (Dun & Bradstreet) and Computer Associates. Competition in the manufacturing software area comes from IBM and Martin Marietta Data Systems.

### Key Products and Services

A three-year summary of source of revenue follows:

**MANAGEMENT SCIENCE AMERICA, INC.**  
**THREE-YEAR SOURCE OF REVENUE SUMMARY**  
**(\$ millions)**

ITEM	FISCAL YEAR					
	1988		1987		1986 (a)	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
Software package license fees	\$94.4	38%	\$126.0	49%	\$90.8	50%
Support services	153.6	61%	130.5	50%	88.9	49%
Other	2.0	1%	2.0	1%	1.1	1%
<b>TOTAL</b>	<b>\$250.0</b>	<b>100%</b>	<b>\$258.5</b>	<b>100%</b>	<b>\$180.8</b>	<b>100%</b>

(a) For comparative purposes, pro forma results have been used for 1986.

MSA has licensed over 24,500 of its products to more than 7,500 customers in 61 countries worldwide.

- Approximately 75% of the Fortune 500 companies use one or more of the company's packages.
- MSA offers cross-industry application products for IBM 370, 43XX, 30XX, 9370, System 36 and 38; Unisys 1100, 2200, V series, A series, 39XX, 39XX, 49XX, 59XX, and 7XXX;



Honeywell Bull DPS 8, DPS 88, DPS 90, and DPS 8000; and NCR 85XX, 86XX, 88XX, and 9800 series computers.

- Manufacturing applications are also provided for the HP 3000 and IBM 36/38 minicomputers, as well as IBM mainframes.
- Higher education administrative software is available for DEC VAX and MicroVAX systems, as well as IBM mainframes.
- MSA supports the major IBM operating environments and popular data base management systems such as IBM's DB2, IMS, and DL/I; Computer Associates' DATACOM/DB and IDMS/R; and Software AG's ADABAS.

MSA provides the Expert Series, a line of software products for financial, human resources, and manufacturing applications.

Cross-industry products available include the following:

- Accounts Payable provides control of the disbursement process, from document matching, invoice entry, and approval, to payment processing and reconciliation.
- Accounts Receivable provides credit and collection management, interactive cash application facilities, and customer correspondence.
- ALLTAX<sup>®</sup> provides tax coverage by calculating payroll and withholding taxes for businesses in the U.S. and Canada.
- Budgetary Control manages the budgeting, accounting, and procurement process in government, education, and other public-sector environments.
- Distribution Resource Planning monitors inventories, customer service levels, and other resources to develop an integrated time-phased inventory plan that drives the purchasing scheduling process. The system supports economic ordering, safety stock management, inventory allocation, transportation planning, and performance reporting.
- Expert EDI is MSA's electronic data interchange product.
- Financial Controller provides validation, data interchange, and total information access to integrate all financial applications.



- Fixed Assets Accounting provides property control and tax accounting, including compliance with tax and regulatory changes.
- Forecasting and Modeling provides complete decision support for "what if?" analysis and planning through integration with the MSA General Ledger, Accounts Payable, Accounts Receivable, and Payroll/Personnel Systems, as well as with in-house systems.
- Foreign Exchange provides multicurrency processing through integration with MSA's General Ledger, Accounts Payable, and Accounts Receivable Systems, as well as in-house systems.
- General Ledger provides accounting and auditing functions, including realtime budgeting and planning facilities, cost-accounting functions, and management reporting.
- Health Care Decision Support provides a data base of clinical and financial information for case mix management, offers detail or summary-level cost determination of products or services for comprehensive product line costing, and provides productivity analysis for variances between actual and earned labor, material, and overhead costs. In addition, Patient Accounting from TDS Healthcare Systems Corporation is marketed by MSA to provide integrated financial and patient accounting.
- Payroll/Personnel meets internal, regulatory, accounting, and auditing requirements in producing payroll checks, labor distribution reports, salary reviews, manpower planning, and other human resource reports. The system fully supports recruiting, hiring, payment policies, taxing considerations, benefits administration, compensation administration, and employee relations.
- International Personnel and Payroll, marketed outside North America, provides a range of business applications required by the personnel, benefits, employee relations, payroll, and accounting departments.
- Inventory provides control of obtaining, storing, and issuing inventory. The system can help reduce the cost of inventory, ensure satisfactory stock levels, and streamline replenishment.
- Order Processing supports customer service by controlling order entry, shipment support and billing, and other order





management activities through easy-to-use, interactive, realtime facilities.

- Project Tracking monitors, controls, and reports on all kinds of major projects, from budget to completion.
- Purchasing provides on-line facilities that streamline the entire purchasing cycle, including processing requisitions, quotations, purchase orders, receipts, and inspections.
- Sales Forecasting supports the requirements of manufacturers, wholesalers, and retailers by providing decision support tools for structured management planning and forecast management. The system supports multilevel forecasts, group level adjustments, new product forecasts, and performance reporting.

Information Expert<sup>R</sup> is MSA's information management environment that integrates MSA applications with in-house-developed and other third-party systems. Since its introduction in 1985, Information Expert has been delivered to more than 3,000 customers. Information Expert components include the following:

- Expert Reporting<sup>TM</sup> guides users through retrieval and reporting of information from multiple data bases and applications.
- ExpertLink<sup>R</sup> permits two-way communications between microcomputers and mainframes.
- Expert Query<sup>TM</sup> provides natural language interfaces to allow users to interact with management information systems.
- Expert Screen Painting<sup>TM</sup> provides end users with realtime screen building facilities.
- Expert Language is a fourth-generation language.
- Expert Data Dictionary allows users to integrate all their software under one centralized environment.

The BrightView<sup>TM</sup> series of cooperative processing application software products, announced in November 1988, is designed specifically for MIS staff and application users. The products allow a portion of the information processing previously executed on the mainframe to be performed on an intelligent workstation.

SmartView<sup>TM</sup>, introduced in June 1989, is an executive information facility that is targeted to senior executives. This



facility will initially be available for MSA's General Ledger product in the fourth quarter of 1989. SmartView is a result of an agreement signed earlier this year between MSA and Comshare.

In addition to cross-industry software for financial management and human resources applications, MSA also offers versions of its products for specific industry markets, as follows:

*Manufacturing:*

MSA Advanced Manufacturing Inc., provides systems that support repetitive/just-in-time (JIT), process, and government contract manufacturing environments. This unit serves over 3,000 customers, including 75% of the Fortune 500.

- AMAPS/Q manufacturing system is marketed to repetitive/just-in-time discrete manufacturers and has capabilities to support process manufacturers. It is used in both single-plant and multiple-plant environments. It runs on IBM and compatible mainframes and is supported by all major data base environments, including DATACOM/DB, IDMS/R, and ADABAS, in addition to IBM's IMS, DL1, and future support of DB2. Modules include:
  - Bill of Materials
  - CADlink
  - Capacity Requirements Planning
  - Contract Engineering System
  - Cost Development System
  - Cost Management System
  - Lot Traceability System
  - Management Reporting System
  - Master Production Scheduling
  - Material Control System
  - Multiproduct Management System
  - Process and Routing System
  - Purchasing Control System
  - Schedule-Managed Production
  - Shop Floor Control
- The AMAPS/M manufacturing system for discrete and repetitive/just-in-time manufacturers is no longer actively marketed.
- AMAPS/3000 manufacturing system is marketed to manufacturers looking for an integrated manufacturing and financial application solution. It is used by repetitive/just-in-time, discrete, and process manufacturers in both single-plant



and multiple-plant environments. It runs on HP 3000 and Spectrum minicomputers. Modules include:

- Accounts Payable
  - Accounts Receivable
  - Bill of Materials
  - Capacity Requirements Planning
  - Cost Management
  - General Ledger
  - Lot Traceability
  - Master Production Scheduling
  - Material Control
  - Material Requirement Planning
  - Order Management
  - Process and Routing
  - Purchasing Control
  - Schedule-Managed Production
  - Shop Floor Control
  - Standard Costing
- AMAPS/36 and AMAPS/38 are marketed primarily to large-system customers with distributed environments, multinational manufacturers, and manufacturers migrating from a mainframe to minicomputer environment. The products run on IBM System 36 and 38 computers.
    - AMAPS/36 and AMAPS/38 Manufacturing Systems are software applications designed to meet production control requirements. System modules include Inventory Management, Material Requirements Planning, Purchasing, Order Processing, and Production Cost Management. The Manufacturing System is fully integrated with the AMAPS/36 and AMAPS/38 Financial System.
    - The MSA AMAPS/36 and AMAPS/38 Financial Systems provide cash and financial management with special features for consolidation, currency conversion, and intercompany reporting. The system also conforms to local, legal, fiscal, and language requirements throughout the world. The AMAPS/36 and AMAPS/38 Financial Systems consist of integrated accounting applications that are fully integrated with the AMAPS/36 and AMAPS/38 Manufacturing Systems. Modules include Accounts Payable, Accounts Receivable, Cash Controller, General Ledger, and Fixed Assets.
  - AMAPS/G manufacturing system is marketed to manufacturers who manufacture to contractors, primarily government



contractors. The system addresses the special reporting requirements of contract manufacturers. The system runs on IBM and compatible mainframes. Modules include:

- Costing System
  - Bill of Materials System
  - Capacity Requirements Planning
  - Contract Engineering System
  - Master Production Scheduling
  - Material Control System
  - Material Requirements Planning
  - Process and Routing System
  - Purchasing Control System
  - Shop Floor Control
- MSA's CIM Partners Program provides for the cooperative development of interfaces between MSA manufacturing products and products from other vendors. MSA currently has CIM Partners agreements with the following companies: Tandem Computers; Rexnord, Inc.; Infolink Corp.; Metro Controls; and Aion Corp.

*Health Care:*

MSA provides an integrated line of patient accounting and information systems for hospitals with 300 or more beds.

- MSA applications include Cost Accounting, Case Mix Management, General Ledger, Accounts Payable, Patient Accounting, Purchasing, Inventory, Fixed Assets, and Payroll/Personnel.
- There are currently over 200 health care customers.

*Higher Education:*

Through Information Associates, Inc. (IA), MSA markets the Series Z product line to colleges and universities.

- The products, which run on DEC and IBM mid-range systems, include Financial Records System, Student Information System, Human Resource System, and Alumni/Development System.
- There are currently over 450 customers worldwide.





*Financial Services:*

MSA provides integrated financial accounting software to over 750 banks, savings and loans, and insurance companies located in 30 countries. Clients use MSA products for property control, financial and tax accounting, depreciation forecasting, disbursement control, purchasing, personnel management, and payroll.

*Government:*

To serve the information management needs of city, county, state, and federal governments, MSA's products can be used individually or integrated into a complete system. Products include Budgetary Control, General Ledger, Accounts Payable, Accounts Receivable, EDI, Purchasing, Human Resources, Inventory, and Fixed Assets.

*Logistics:*

Integrated systems include Demand Management, for manufacturers with integrated distribution; Materials Management, for organizations that consume materials internally; and Distribution Management, for wholesalers/distributors, retailers, and manufacturers with separate distribution operations. Products include Accounts Payable, Accounts Receivable, EDI, Inventory, Distribution Resource Planning, Order Processing, Purchasing, and Sales Forecasting.

- MSA's Expert EDI product allows purchasing, order processing, accounts payable, and accounts receivable systems to communicate directly with customer and supplier systems.

MSA/vendor agreements include the following:

- MSA's Market Alliance Program manages the cooperative product, support, and development and marketing efforts between MSA and Honeywell Bull, NCR, and Unisys.

MSA offers the following customer support services:

- Consulting services include on-site implementation planning, project management, data conversion, system design, and general consulting. MSA can also customize its software to meet user-specific requirements.



- MSA offers its customers over 150 different education courses from major training centers worldwide. More than 100,000 students were trained in MSA systems during 1988.
- The company also offers the following computer-based services:
  - Expert Insight gives customers 24-hour access to MSA's Client Support Center in Atlanta through a PC-to-PC link and allows the customer to browse a data base of timely product information and system corrections.
  - Computer-Based Diagnostics provides a direct, interactive link between the customer's mainframe computer and the MSA Client Support Center. With this service, customers give MSA selective access to their relevant system files or programs.

**Industry Markets** MSA's revenue is derived approximately as follows:

Manufacturing	45%
Banking and finance	14%
Government/education	12%
Distribution	6%
Commercial/transportation	5%
Medical	5%
Utilities	4%
Services	3%
Insurance	3%
Other	<u>3%</u>
	100%

More than three-fourths of the Fortune 500 companies use one or more of MSA's packages.

**Geographic Markets**

Approximately 76% of MSA's 1988 revenue was derived from North America and 24% from international sources. A three-year summary of source of revenue follows:



**MANAGEMENT SCIENCE AMERICA, INC.**  
**THREE-YEAR SOURCE-OF-REVENUE SUMMARY**  
 (\$ millions)

ITEM	FISCAL YEAR					
	1988		1987		1986	
	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL	REVENUE \$	PERCENT OF TOTAL
North America	\$190.0	76%	\$208.6	81%	\$145.6	75%
Europe	43.6	18%	36.3	14%	34.1	18%
Other	15.5	6%	13.6	5%	13.7	7%
<b>TOTAL</b>	<b>\$250.0</b>	<b>100%</b>	<b>\$258.5</b>	<b>100%</b>	<b>\$193.4</b>	<b>100%</b>

U.S. offices are located in Atlanta, Boston, Boulder, Chicago, Columbus, Dallas/Ft. Worth, Denver, Detroit, Houston, Los Angeles, Minneapolis/St. Paul, Nashville, New Haven, New York City, Omaha, Philadelphia, Phoenix, Rochester, San Diego, San Francisco, Seattle, Syracuse, and Washington, D.C.

Foreign offices are located in Canada, the U.K., Belgium, France, West Germany, Italy, Spain, Australia, and The Netherlands. MSA also has representatives in Brazil, Mexico, Peru, and Puerto Rico.

**Computer  
Hardware and  
Software**

MSA maintains various equipment at its Atlanta headquarters, including the following:

- 1 IBM 3090-400, operating under MVS/XA
- 1 IBM 3081-K32, operating under MVS/XA
- 1 IBM 4381-P14, operating under VM/DOS VSE
- 1 IBM 4381-Q24, operating under MVS/XA



## COMPANY PROFILE

**MCBA, INC.**  
425 West Broadway  
Glendale, CA 91204-1269  
(818) 242-9600

Stina Hans, Chairman and CEO  
Private Corporation  
Total Employees: 146  
Total Revenue, Fiscal Year End  
3/31/89: \$11,500,000

### The Company

MCBA, Inc. (MCBA), established in 1974, originally developed and marketed accounting software for minicomputers. Currently, MCBA provides accounting, distribution, and manufacturing application software for minicomputers and also offers professional services.

Revenue increased 15% from \$10 million in fiscal 1988 to \$11.5 million in fiscal 1989. A five-year revenue summary follows:

**MCBA, INC.**  
**FIVE-YEAR REVENUE SUMMARY**  
(\$ millions)

ITEM	FISCAL YEAR				
	3/89	3/88	3/87	3/86	3/85
Revenue	\$11.5	\$10.0	\$9.0	\$8.1	\$7.7
• Percent increase from previous year	15%	11%	11%	5%	5%

As of March 31, 1989, MCBA had 146 employees, segmented as follows:

Marketing and sales	52
Customer support (software)	23
Professional services	20
Development/operations	21
General and administrative	<u>30</u>
	146

### Key Products and Services

MCBA offers 19 software packages, as shown in the exhibit. Application software accounted for approximately 85% of MCBA's fiscal 1989 revenue.





**EXHIBIT**  
**MCBA, INC.**  
**SOFTWARE PRODUCTS**

PRODUCT NAME	NUMBER INSTALLED
• Accounts Payable	10,000
• Accounts Receivable	10,000
• Bill of Materials Processor	500
• Customer Order Processing	1,500
• Fixed Assets and Depreciation	1,000
• General Ledger	10,000
• Inventory Management	1,500
• Job Costing	600
• Labor Performance	100
• Mailing List (a)	900
• Master Scheduling (b)	100
• Material Requirements Planning	250
• Payroll	9,000
• Purchase Order and Receiving	900
• Report Writer	150
• Sales History (a)	900
• Shop Floor Control	400
• Standard Product Costing	250
• Standard Product Routing	250

*(a) Available for Wang VS Series only.*

*(b) Available for Wang VS Series and IBM PC/AT only.*



- MCBA software operates on Hewlett Packard 3000, DEC PDP and VAX series, Wang VS series, and Texas Instruments 990 or Business Systems microcomputers running PC-DOS, MS-DOS, UNIX, or XENIX operating systems.
- Each package ranges in price from \$900 to \$1,700 for the microcomputer versions, and from \$2,000 to \$9,000 for the minicomputer versions.
- Report Writer is available in the minicomputer versions only and is priced from \$750 to \$1,000.
- MCBA claims to have over 30,000 installations of its application software products.
- Approximately 90% of MCBA's application software sales are for minicomputer platforms the remaining 10% are designed for microcomputers.

Approximately 15% of MCBA's 1989 revenue was derived from its professional services division.

- MCBA's professional services include custom programming and industry consulting primarily to the discrete manufacturing and wholesale distribution industries.
- MCBA also provides optional education and training services for its software packages at its headquarters location.

### **Industry Markets**

The primary industries served by MCBA are wholesale distribution and discreet manufacturing, but MCBA's accounting software is marketed across industry segments.

MCBA targets its products at mid-range companies with revenue in the \$5 to \$100 million range annually.

### **Geographic Markets**

Approximately 88% of fiscal 1989 revenue was derived from the U.S., 5% from Europe, 5% from Asia, and the remaining 2% from Canada.

### **Computer Hardware**

MCBA has more than 30 computers installed including DEC PDP and VAX series, Wang VS, HP 3000, TI Business System, IBM PC/XT and PC/AT, NCR, Altos, Intel, and Motorola computers.



## COMPANY PROFILE

**MCCORMACK & DODGE CORPORATION**  
1225 Worcester Road  
Natick, MA 01760  
(617) 655-8200

Frank H. Dodge, President  
Division of The Dun & Bradstreet Corporation  
Total Employees: 1,900  
Total Revenue, Fiscal Year End  
11/30/88: \$175,000,000\*

\*INPUT estimate

### The Company

McCormack & Dodge Corporation (M&D), formed in 1969 and acquired by Dun & Bradstreet in 1983, develops, markets, and supports software products for financial and human resources applications. The company also offers software tools for application development, micro-to-mainframe links, and report writing.

M&D's fiscal 1988 revenue reached an estimated \$175 million, a 16% increase over estimated fiscal 1987 revenue of \$151 million. A four-year revenue summary follows:

#### MCCORMACK & DODGE CORPORATION FOUR-YEAR REVENUE SUMMARY\* (\$ millions)

ITEM	FISCAL YEAR			
	11/88	11/87	11/86	11/85
Revenue	\$175.0	\$151.0	\$122.0	\$100.0
• Percent increase from previous year	16%	24%	22%	N/A

\* INPUT estimates

M&D management attributes revenue growth to strong domestic sales and significant gains in international markets, including Australia and the U.K.

- M&D's annual sales have increased 40 times in ten years.
- Since its acquisition by Dun and Bradstreet in 1983, M&D's revenue has grown on average by more than 25% per year.



The company has operated profitably since inception and achieved record operating income in fiscal 1988.

Recent acquisitions and divestitures made by M&D include the following:

- In January 1989, Andersen Consulting acquired M&D's PIOS and C/PIOS manufacturing resource planning systems. M&D employees who had worked on PIOS development and marketing were offered positions with Andersen Consulting. Terms of the purchase were not disclosed.
  - With an installed base of over 75 sites, the systems are used by a number of large defense contractors.
  - The transaction is part of an agreement between M&D and Andersen Consulting under which the two firms will jointly sell M&D's financial and human resources software and Andersen Consulting's MAC-PAC family of manufacturing software products.
- In January 1989, M&D acquired the assets of The Lawson Group of Tampa (FL). Terms of the purchase were not disclosed.
  - Lawson develops and markets the Resource family of integrated human resource software products for IBM and compatible microcomputers.
  - Lawson has an installed base of approximately 20 customers. Its operations have been merged in M&D's Human Resources Business Unit.
- In March 1988, M&D acquired Neller Software's Austpay Australian payroll/personnel package. Terms of the purchase were not disclosed.
  - Introduced by Neller Software in 1983, Austpay is installed throughout Australia and New Zealand at more than 50 customer sites, including L.M. Ericsson, Mitsubishi Motors, and Air New Guinea. The system runs on IBM, DEC, ICL, and Fujitsu computers.
  - The Austpay business will become part of McCormack & Dodge Australia Pty. Ltd., M&D's Australian operation headquartered in Sydney. All nine former Neller Software employees who worked on Austpay development and





support will join M&D Australia and will work to integrate Austpay with M&D's Millennium execution environment.

- Initial target markets for Austpay are Australia and New Zealand. M&D will consider selling Austpay in other international markets in the future.

In December 1988, M&D signed an agreement with IBM to jointly market M&D financial and human resource applications on all IBM processors.

- Under the agreement, M&D will receive IBM marketing support and may attend IBM user conferences.
- This agreement is the successor to the IBM Industry Marketing Assistance Program pacts and allows IBM to designate M&D as an Authorized Industry Application Specialist.

In early 1988 M&D announced an agreement with GE Information Services whereby M&D will incorporate electronic data interchange (EDI) capabilities into two of its software products.

- Upcoming releases of PO:Millennium (Purchase Order) will allow the users to create EDI-formatted purchase orders directly from within those applications.
- Users will be able to send electronic purchase orders straight into EDI\*T, GE Information Services' EDI translation software. Formatted electronic documents can then be transmitted via GE Information Services' EDI\*Express network into the EDI mailboxes of their suppliers.

M&D is currently organized into the following business units:

- The Financial Systems Business Unit markets and supports the company's Millennium mainframe financial/accounting software products for IBM and compatible mainframes, the Satellite Series product line, the PLUS line of financial/accounting products for IBM System 36, 38, and AS/400 computers, and PC MinLink, a micro-to-minicomputer link.
- The Human Resources Business Unit markets and supports the Millennium human resource management product line as well as the Lawson products acquired earlier this year.



- The DEC VAX Business Unit develops, markets, and supports the company's Millennium financial/accounting software products for DEC VAX systems.
- The Application Tools Business Unit markets and supports Millennium application tools and its micro-to-mainframe link, Interactive PC Link.
- The Documentation and Training Business Unit provides documentation and customer training, including instructor-led courses and computer-based programs.
- The Consulting Business Unit provides implementation services to M&D's software customers.
- M&D also has foreign subsidiaries in Australia, Belgium, Brazil, Canada, France, Japan, The Netherlands, New Zealand, Saudi Arabia, Singapore, Spain, the U.K., and West Germany.

As of November 30, 1988 M&D had approximately 1,900 employees. The company currently has approximately 1,900 employees.

M&D's primary competitor is Management Science America. Other competitors include Computer Associates International, Cullinet, and Data Design Associates.

#### **Key Products and Services**

One hundred percent of M&D's revenue is derived from software products and associated support services. The company has more than 10,000 systems installed worldwide.

- M&D's line of financial information systems represent the largest contribution to revenue.
- The company also markets human resource management software products as well as application development tools.
- A list of the software products marketed by M&D is presented in the exhibit.



## EXHIBIT

MCCORMACK & DODGE CORPORATION  
SOFTWARE PRODUCTS

Product	Application	Number Installed	Price
<b>Millennium Series</b>			
GL:M	General Ledger	2,800	\$100,000-\$215,000
AR:M	Accounts Receivable	300	\$130,000-\$170,000
AP:M	Accounts Payable	1,800	\$95,000-\$135,000
PO:M	Purchase Order	550	\$95,000-\$135,000
FA:M	Fixed Assets	1,500	\$56,000-\$97,000
CP:M	Capital Project	400	\$47,000-\$51,000
CM:M	Currency Management	50	\$65,000
HR:M	Human Resource Management System		
	- Payroll	400	\$120,000-\$170,000
	- Personnel	400	\$99,000-\$145,000
	- Applicant Flow	-	\$15,000-\$20,000
	- Position Control	-	\$20,000-\$25,000
	- Safety and Health	-	\$15,000-\$20,000
	- Benefits Administration	-	\$50,000-\$75,000
M:SDT	Application development tool	500	\$80,000-\$150,000
M:MRW	Mainframe report writer	300	\$35,000
M:FYI	Memorandum system	150	\$10,000
M:ViewPrint	Report writer	200	\$35,000
Interactive PC Link	Micro-to-mainframe link	950	\$35,000/mainframe
		(mainframe)	
		7,000	\$1,100/micro
		(micro)	
Batch Transaction Processor	Batch processor	100	\$30,000-\$40,000
<b>Satellite Series</b>			
AP:Satellite	Accounts Payable	50	\$13,000
GL:Satellite	General Ledger	50	\$13,000
<b>PLUS Products</b>			
A/P PLUS	Accounts Payable	900	\$35,000-\$40,000
G/L PLUS	General Ledger	1,450	\$40,000-\$45,000
PC MinLink	Micro-to-minicomputer link	100	\$4,500
<b>Micro-Based Human Resource Products</b>			
Personnel Resource	Personnel management system	25	\$10,000-\$15,000
Payroll Resource	Payroll management system	25	\$15,000-\$20,000
COBRA Resource	COBRA administrative system	25	\$3,500
Profit Sharing Resource	Defined contribution management system	25	\$25,000
Pension Resource	Defined benefit management system	25	\$25,000



M&D's Millennium Series of products, introduced in 1983, were originally designed for IBM 370, 30xx, and 43xx mainframes running under OS and DOS. The products are available for VSAM and IMS environments. The products are also available for Fujitsu and ICL computers in certain international markets (primarily in Japan, Australia, and the U.K.). At its user conference in August 1988, M&D introduced DEC VAX versions of its Millennium products.

- M&D offers Millennium products for financial/accounting and human resource management applications. Tools for application development, report writing, micro-to-mainframe linking, and office communications are also available.
- In April 1988, M&D announced GL:Millennium 3.0, a newly designed General Ledger Information System that allows users to define key fields and record lengths so that the general ledger data base reflects their own individual reporting and storage needs.
- In April 1988, the company introduced CM:Millennium, a Currency Management System that allows companies to manage their businesses in multiple currencies.
- HR:M, the Millennium Series of Human Resource Management Systems, offers systems for Payroll and Personnel.
  - Optional modules that run with HR:M include Applicant Flow, Position Control, Safety and Health, and Benefits Administration.
  - HR:M systems run on OS, DOS, as well as VS/MVS/VSE operating systems.
  - In March 1988, M&D introduced HR TAX, an automated tax update service that provides customers of HR:M with immediate access to tax updates via a PC-to-PC telecommunications link. HR TAX runs on IBM and compatible microcomputers and is now available to HR:M customers as a part of their maintenance contract.
- M:SDT, M&D's application development tool, works with most major data base management systems, including IMS, VSAM, and DB2. M:SDT is M&D's first product that supports DB2. The company plans to move its full line of applications to DB2.





- In August 1987, M&D announced M:ViewPrint, a cross-application detail report writer that allows users to develop and run reports on-line or in batch.

The Satellite Series of products, announced in August 1987, process data on microcomputers for mainframe consolidation.

- AP:Satellite and GL:Satellite allow users to process accounts payable and general ledger mainframe transactions on IBM and compatible microcomputers, offloading mainframe work functions.
- The products work in conjunction with Interactive PC Link, M&D's micro-to-mainframe link.
- According to M&D management, the Satellite Series is an important step in the company's distributed processing strategy to offer compatible functionality on mainframes, minicomputers, and microcomputers.

The PLUS line of financial/accounting software products are available for IBM System 36, 38 and AS/400 computers. M&D has migrated its DEC-based products to the Millennium environment.

- PLUS products are also available in France on Honeywell Bull computers.
- During 1987 M&D introduced PC MinLink, a micro-to-minicomputer link for the DEC VAX and IBM System 36, 38, AS/400 systems that handles general ledger data.

As a result of the acquisition of The Lawson Group in January 1989, M&D also offers integrated human resource management software products for IBM PC XT/AT, PS/2, and compatible microcomputers running MS-DOS.

- The products also run in a local-area network environment and are written in dBASE III.
- Modules include the following:
  - Personnel Resource is a personnel management system that provides basic recordkeeping, applicant tracking, EEO, and affirmative action reporting.
  - Payroll Resource is a payroll information management system that allows payroll processing, withholding of taxes,



and generation of checks and deposit advices.

- COBRA Resource is an administrative system for compliance with the Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA).
- Profit Sharing Resource is a defined contribution and 401k administrative system that features basic recordkeeping, reports of plan activity, unlimited number of accounts (sources of money), and multiple investment funds per account.
- Pension Resource is a defined benefit administrative system that provides basic recordkeeping, reporting, benefit calculations (including normal or early retirement, vested, disability, and death benefits).
- When Lawson products are used with M&D's Interactive PC Link, they will be able to automatically transfer data on-line to HR:M mainframe systems. This distributed processing strategy is targeted to divisions of large companies that prefer to maintain autonomy managing divisional-level information, while allowing headquarters to maintain control of corporate-wide human resource information.

M&D offers its customers support through its field support offices, a toll-free help line, remote diagnostics, and individual product group support. User group meetings are held during the year to offer users further support and to obtain user input on system enhancements.

- Customers receive all system enhancements and full technical support at no charge for a full year after the purchase of an M&D system. Thereafter, M&D provides software maintenance services for its products for an annual fee of approximately 13 1/2% of the current product purchase price.
- The company also offers product training at its Customer Education Centers located across the U.S. and in M&D offices worldwide.
  - Courses last from three to five days and are staffed by M&D instructors who train customers in both application and data processing aspects of the system.
  - M&D also offers computer-based training programs to help users learn Millennium topics at their own pace.



**Industry Markets**

M&D's clients are generally large corporations with revenue in excess of \$100 million. Over half of the Fortune 500 companies use one or more of the company's products.

- With the acquisition of the Lawson micro-based products, M&D clients will also include smaller clients and divisions of large corporations.

The manufacturing industry is the company's largest revenue contributor. The company also has customers in the banking, insurance, utilities, health care, education, retail, oil and gas, and real estate markets, as well as state and local governments.

M&D has joint marketing agreements with Avatar Technologies, DEC, IBM, GE Information Services, Aion Corp, and Programmed Intelligence Corp. In addition, the company has joint initiatives with Arthur Andersen, Arthur Young, Coopers & Lybrand, and Price Waterhouse.

**Geographic Markets**

Approximately 67% of M&D's fiscal 1988 revenue was derived from the U.S. and 33% from international sources.

U.S. regional offices are located in Natick (MA), Atlanta (GA), Schaumburg (IL), Cleveland (OH), Irving (TX), Lakewood (CO), Southfield (MI), Huntsville (AL), Los Angeles and San Mateo (CA), Brookfield (WI), Minneapolis (MN), Teaneck (NJ), Bellevue (WA), and McLean (VA).

M&D Education Centers are located in Atlanta, Huntsville, Natick, Schaumburg, and Los Angeles.

International subsidiaries are located in Australia, Belgium, Brazil, Canada, France, Japan, The Netherlands, New Zealand, Saudi Arabia, Singapore, Spain, the U.K., and West Germany.

M&D distributors are located in Argentina, Denmark, Finland, Hong Kong, Indonesia, Italy, Malaysia, Mexico, Norway, Peru, the Philippines, Singapore, Sweden, Taiwan, Thailand, Turkey, and Venezuela.

**Computer Hardware and Software**

M&D has a range of computers installed for product development and customer support, including IBM mainframes, minicomputers, and microcomputers, DEC VAX systems, and a NAS 90/60.



## COMPANY PROFILE

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### **PBL ASSOCIATES**

10 Cottage Avenue  
Point Richmond, CA 94801  
(415) 234-4338

C. Paul Buist III, President  
Private Company  
Total Employees: 45  
Total Revenue, Fiscal Year End  
12/31/89: \$4,000,000\*

\*INPUT estimate

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#### **The Company**

PBL Associates, founded in 1969, provides accounting application software products and systems software products for Tandem NonStop computers. The company also provides custom software development, consulting, and education and training professional services.

INPUT estimates PBL Associates' 1989 revenue was approximately \$4 million, the same as 1988 revenue. The company has been profitable nearly every year since its inception.

#### **Key Products and Services**

Approximately 80% of PBL Associates' revenue is derived from application software products and associated support services, 5% from systems software products, and 15% from professional services.

PBL Associates offers accounting and distribution application software products for Tandem NonStop computers. There are currently close to 300 application software product installations worldwide.

- Accounting packages include the following:
  - PBL General Ledger provides on-line processing analysis, control, and reporting of financial transactions.
  - PBL Accounts Payable controls payables, cash disbursements, and check writing.
  - PBL Accounts Receivable provides on-line management of receivables, credit, and cash receipts.
  - PBL Fixed Assets performs on-line property control, tax accounting, and regulatory reporting.





- Distribution application software products include the following:
  - PBL Inventory Management and Accounting System provides finished goods inventory control for single and multiple warehouse companies.
  - PBL Purchasing Management System tracks purchasing costs.
  - PBL Order Entry and Invoicing System provides on-line sales order processing, sales analysis, and billing.
  - PBL Inventory Financial Analysis provides financial analysis of overall inventory as well as inventory of individual items.
  - PBL Sales Analysis builds a sales data base for on-line inquires and furnishes reports on customers and sales.
- PBL Associates no longer markets but continues to support its fund accounting application software products.

PBL Associates also provides systems software products for Tandem NonStop computers running EXT, CLX, VLX, TXP, or Cyclone that are generally sold to its application software clients.

- PBL TAPQueue schedules and controls batch job execution.
- PBL TAPMap reads COBOL source code and generates system documentation.
- PBL Utilities System integrates and secures PBL software, Tandem utilities, and software from other vendors.
- PBL Micro-Tap links Tandem computers with IBM microcomputers.
- PBL is currently developing the PBL TAP System for common security, company accounting and control, and batch report control.

Professional services provided by PBL Associates include the following:

- The company provides modification of its application software products, as well as custom software development services.



- The company also provides systems consulting, education and training services, and some facilities management.

**Industry Markets**

PBL Associates derives its revenue from clients across most industries.

PBL Associates' accounting software is used by companies of any size. Distribution software is generally used by any firm with large distribution operations or distribution companies with over \$80 million in annual sales.

The company has clients in the manufacturing, banking and finance, medical, retail and wholesale distribution, transportation, and telecommunications industries, and well as federal and state government.

**Geographic Markets**

Approximately 75% to 80% of PBL Associates' 1989 revenue was derived from the U.S. and Canada and the remainder from international sources. Significant sales were made in Australia during 1989.

PBL Associates sells its products and services through its direct sales force in the U.S., Canada, Australia, and New Zealand.

Other international sales (primarily in South America and the U.K.) are handled by distributors.



## COMPANY PROFILE

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**ROSS SYSTEMS,  
INCORPORATED**  
1860 Embarcadero Road  
Palo Alto, CA 94303  
(415) 856-1100

Dennis Vohs, Chairman and CEO  
Richard Giordanella, President  
Private Corporation  
Total Employees: 300 (3/90)  
Total Revenue, Fiscal Year End  
6/30/89: \$23,000,000

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### The Company

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

Ross Systems' overall strategy is to build a broad-based VAX application software company by acquiring other companies offering complementary cross-industry or specific vertical market software products. Through a combination of accelerated internal growth and acquisitions, Ross Systems' target is to reach \$100 million in annual revenue by 1992.

- Ross Systems was founded in 1972 to provide consulting professional services. In 1975 the company expanded its business to include software products and processing services.
- Ross Systems operated as a private independent company through November 1986, when it merged with Virtual Microsystems of Berkeley (CA) to form ROSSDATA Corporation.
- In November 1988, ROSSDATA announced a management buyout of Ross Systems for an undisclosed sum. The purchase was led by management and a group of outside investors led by Dennis Vohs. Other investors include Welsh, Carson, Anderson and Stowe; Citicorp; Morgan Stanley & Co.; and Greylock Management Corp. Founder Kenneth Ross, also an investor, remains at Ross Systems as an advisor.
- In June 1989, Ross Systems acquired Cardinal Data Corporation of Needham Heights (MA). Cardinal Data, with



50 employees, provides accounting and distribution application software and associated support services for DEC VAX systems.

- In January 1990, Ross Systems purchased Argonaut Information Systems' (AIS) line of human resource application software products for DEC VAX systems.

Ross Systems' fiscal 1989 revenue reached an estimated \$23 million, a 31% increase over fiscal 1988 revenue of \$17.5 million. A three-year revenue summary follows:

**ROSS SYSTEMS, INCORPORATED  
THREE-YEAR REVENUE SUMMARY  
(\$ millions)**

ITEM	FISCAL YEAR		
	6/89	6/88	6/87
Revenue	\$23.0	\$17.5	\$11.2
• Percent increase from previous year	31%	56%	24%

Ross Systems management estimates that fiscal 1990 revenue will exceed \$36 million.

During fiscal 1989, software sales rose 21% and revenue from client services increased more than 50%.

During fiscal 1988, software sales rose 66%, revenue from client services increased more than 123%, and after-tax profit was nearly 20%.

Approximately 16% of fiscal 1989 revenue was spent on research and development.

Recent announcements made by Ross Systems include the following:

- In November 1989, Ross Systems and SmartStar Corporation announced a strategic partnership involving cooperative marketing and joint product development. SmartStar supplies the VAX community with a fourth-generation language applications development environment.





- In May 1989, Ross Systems announced a cooperative marketing agreement with Ingres Corporation under which the two companies will cooperatively market the INGRES toolset with Ross Systems' Renaissance Series of financial management and accounting software and will work to prototype an INGRES-based version of Renaissance applications for DEC's ULTRIX operating system.
- In March 1989, Ross Systems announced it will develop a VAX Rdb/VMS-based version of its Renaissance Series software in addition to its current RMS-based version. Ross Systems also announced support of DEC's Compound Document Architecture.

Major competitors include McCormack & Dodge (Dun & Bradstreet), Computer Associates, ISI, and Collier Jackson (CompuServe).

#### Key Products and Services

INPUT estimates that approximately 60% of Ross Systems' fiscal 1989 revenue was derived from application software products and 40% from services and support.

Ross Systems, with over 650 customers in 21 countries, currently has over 1,850 installations of its software products worldwide.

In October 1988, Ross Systems introduced the Renaissance Series™ product line for DEC VAX computers running under VAX/VMS. This next generation environment, which supercedes the company's MAPS family of financial products, integrates Ross Systems' "Mainframe Class" financial/accounting software products with business productivity tools. The Renaissance Series also allows the user to integrate any other VAX software into the system.

- Renaissance Series accounting applications are fully integrated and include the following:
  - Renaissance Series General Ledger (Renaissance/GL)
  - Renaissance Series Accounts Payable (Renaissance/AP)
  - Renaissance Series Purchase Order (Renaissance/PO)
  - Renaissance Series Accounts Receivable (Renaissance/AR)
  - Renaissance Series Fixed Assets (Renaissance/FA)



- Encumbrance Accounting, announced in June 1989, was co-developed with Price Waterhouse.
- Allocations, announced in August 1989, is a cost allocations accounting product co-developed with Microsoft.
- Intercompany Accounting, introduced in September 1989, facilitates the entry of transactions affecting multiple companies.
- Renaissance Series business productivity tools (Executive Information Systems) allow users to access, manipulate, report, and graph data from Ross Systems' accounting software and from PC-based spreadsheets. These tools include the following:
  - 20/20™, a spreadsheet for multiuser computer systems from Access Technology, Inc., integrates graphics, data base management, and project modeling with spreadsheet functionality. Ross Systems has nonexclusive rights to sell and support the 20/20 spreadsheet for use on VAX computers, and to train customers who purchase it.
  - CrossView™ is a cross-product inquiry and reporting tool that allows simultaneous retrieval of information from Ross Systems' accounting applications.
  - Microlink™, Ross Systems' PC-to-VAX link, permits users to transfer financial data between PC-based spreadsheets and centralized VAX-based general ledger or model financial data bases.
  - Model is a financial modeling tool that provides a range of features to allow the user to set up corporate financial models for planning, forecasting, budgeting, and other financial functions.

Ross Systems' Distribution Series™ products include the following:

- Distribution/SOM, a sales order management system
- Distribution/SA, an integrated sales analysis tool
- Distribution/AR, an accounts receivable system for effective receivables and credit management
- Distribution/PO, a customizable purchase order management system



- Distribution/IC, an inventory system integrated with SOM and PO for control and analysis of stores and products

Ross Systems' human resources applications, acquired from Argonaut Information Systems, include Payroll and Human Resources.

Ross Systems' Client Services Organization provides implementation and ongoing support to its clients. These services include education and training, software support, professional services, and processing services.

- Formal classroom training for the company's products and the VAX computer is provided on a regular basis, both in the U.S. and Europe.
  - Classes are held at Ross Systems' offices in Palo Alto, New York City, London, Brussels, Hong Kong, and Sydney. Customer site classes are also available.
- Professional services are offered in three categories:
  - Management Consulting provides high-level expertise in the implementation of a new accounting system.
  - Applications Consulting services include developing new systems or providing interfaces from existing in-house applications to the Ross product line.
  - Systems Consulting provides specific expertise in managing and operating DEC VAX computers.
- Clients may access Ross Systems' software products on DEC VAX computers located at Ross Systems' data center in Palo Alto.

### Industry Markets

Ross Systems' fiscal 1989 revenue was derived from clients in various industries, including process and discrete manufacturing, banking and finance, media, telecommunications, and health care.

Nearly 30% of Ross Systems' product installations are at the headquarters or in a division of a Fortune 500 company.

Clients include DEC, Citicorp, Quaker Oats, Butler Manufacturing, Security Pacific, Ford, Scherring Plough, and Genentech.



In December 1988, Ross Systems signed a licensing agreement with The Saddlebrook Corporation granting Saddlebrook exclusive rights to sell and support Ross Systems' Renaissance Series of application products to thrift and mortgage banking institutions.

### **Geographic Markets**

Approximately 88% of Ross Systems' fiscal 1989 revenue was derived from the U.S. The remaining 12% was derived from international sources, including Europe, Canada, Australia, and the Far East.

Ross Systems has North American offices in Atlanta (GA), Chicago (IL), Dallas (TX), Denver (CO), New York (NY), Nashua (NH), Needham Heights (MA), Palo Alto (CA), Pittsburgh (PA), and Toronto and Vancouver (Canada).

Ross Systems Europe, formed in April 1989 and headquartered in Brussels (Belgium), markets and supports Ross Systems' products throughout continental Europe. Other European offices are located in Bristol (England), Paris, and Utrecht (the Netherlands).

Ross Systems Asia, formed in July 1989 and headquartered in Hong Kong, markets and services Ross Systems products throughout the Far East. Offices are also located in Kuala Lumpur and Singapore.

Ross Systems Australia, with offices in Sydney and Melbourne, markets and supports Ross Systems products in Australia and New Zealand.

### **Computer Hardware and Software**

Ross Systems has the following computers installed at its Palo Alto data center:

- 4 DEC VAX-11/780s, VMS
- 3 DEC PDP-11/70s, RSTS/E

Clients access the Palo Alto data center via ROSS/NET, the company's communications network, which provides direct access through dedicated lines from each of Ross Systems' regional offices, or through Telenet.







## Appendix: Data Base

### A

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#### Data Base

The INPUT data base presents user expenditures for information services in the accounting sector by delivery mode and submode.

User expenditures are shown for the U.S. in current dollars (i.e., expenditures include inflation).

### B

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#### Data Base Reconciliation, 1988-1993

The 1988 revenues forecast for each delivery mode in INPUT's 1988 report are the same as the actual 1988 revenues reported in this report.

The only forecast that is noticeably different in this report compared to the previous report is the forecast for application software products for workstations and PCs. This forecast has been revised downward from a 30% to a 25% CAGR.



EXHIBIT A-1

**Accounting Cross-Industry Sector  
User Expenditure Forecast  
by Delivery Mode, 1989-1994  
(\$ Millions)**

Sector by Delivery Mode	1988	Growth 88-89 (%)	1989	1990	1991	1992	1993	1994	CAGR 89-94 (%)
Total Accounting Sector	2,905	12	3,264	3,513	3,790	4,112	4,480	4,904	8
Processing Services	990	4	1,030	1,060	1,092	1,125	1,159	1,194	3
-Transaction Processing Services	990	4	1,030	1,060	1,092	1,125	1,159	1,194	3
Application Software Products	1,515	20	1,825	2,028	2,263	2,537	2,856	3,230	12
-Mainframe	630	10	693	728	764	802	842	884	5
-Minicomputer	430	15	495	529	566	606	648	694	7
-Workstation/PC	455	40	637	771	933	1,128	1,365	1,652	21
Turnkey Systems	400	3	410	425	435	450	465	480	3



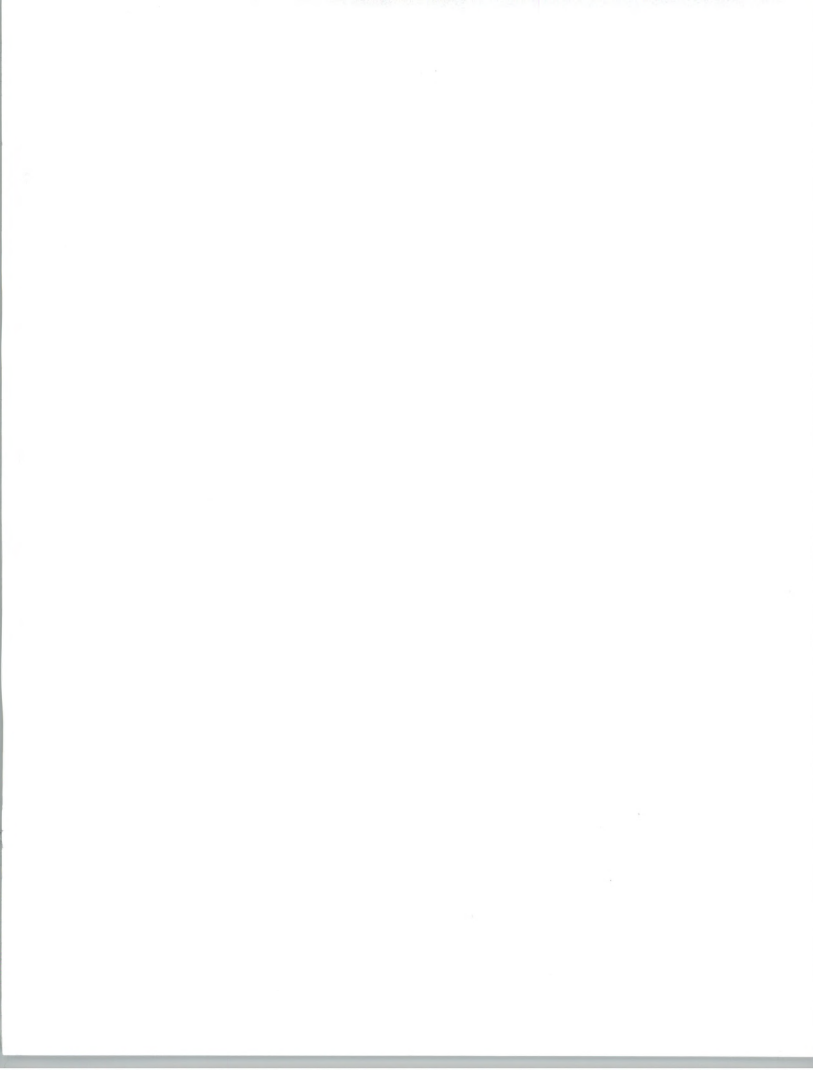
EXHIBIT A-2

### Accounting Sector Data Base Reconciliation 1988-1993

Delivery Mode	1988 Market			1993 Market			88-93 CAGR per data 88 Rpt. (%)	88-93 CAGR per data 89 Rpt. (%)
	1988 Report (Forecast) (\$M)	1989 Report (Actual) (\$M)	Variance as % of 1988 Report	1988 Report (Forecast) (\$M)	1989 Report (Forecast) (\$M)	Variance as % of 1988 Report		
Total Accounting Sector	2,905	2,905	0	4,790	4,480	(6)	11	9
Processing Services	990	990	0	1,150	1,159	0	3	3
- Transaction Processing Services	990	990	0	1,150	1,159	0	3	3
Application Software Products	1,515	1,515	0	3,165	2,856	(10)	16	14
- Mainframe	630	630	0	810	842	4	5	6
- Minicomputer	430	430	0	690	648	(6)	10	9
- Workstation/PC	455	455	0	1,665	1,365	(18)	30	25
Turnkey Systems	400	400	0	475	465	0	3	3









## About INPUT

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

Continuous-information advisory services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services (software, processing services, turnkey systems, systems integration, professional services, communications, systems/software maintenance and support).

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

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