

INPUT Research Methodology

March 1991

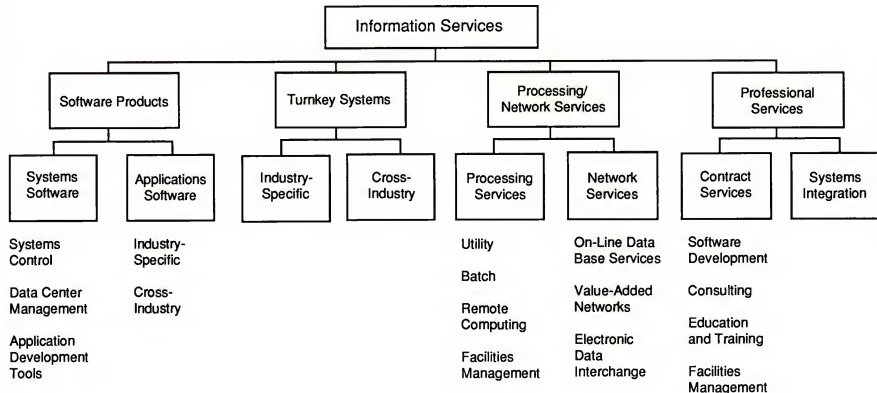


INPUT Research Methodology Topics

- Industry Structure
- Data Gathering
- Forecast Development



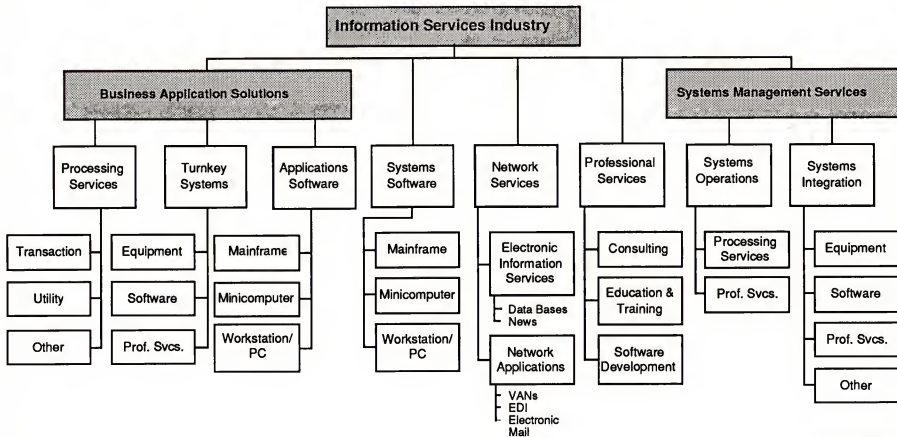
Information Services Industry Structure—1987



Source: INPUT



Information Services Industry Structure—1990



Source: INPUT



Industry Structure Changes Delivery Modes, 1988

Delivery Modes	Submodes	
	Prior	After
Professional Services	Consulting Software Development Education & Training Facilities Management Systems Integration	Consulting Software Development Education & Training Facilities Management
Systems Integration	NA	Equipment Software Professional Services Other

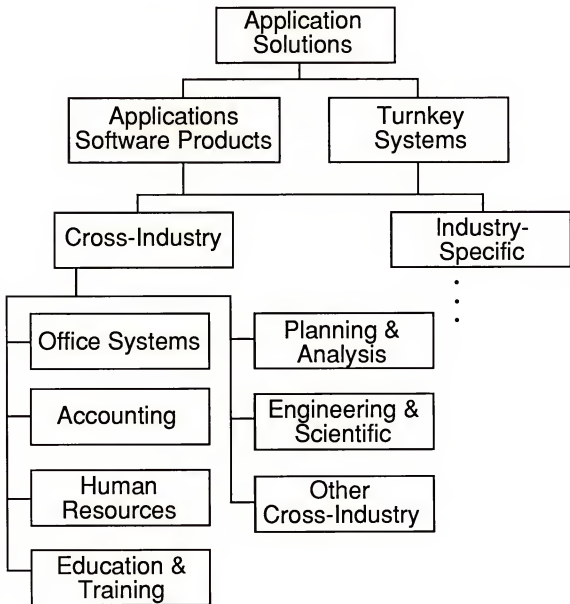


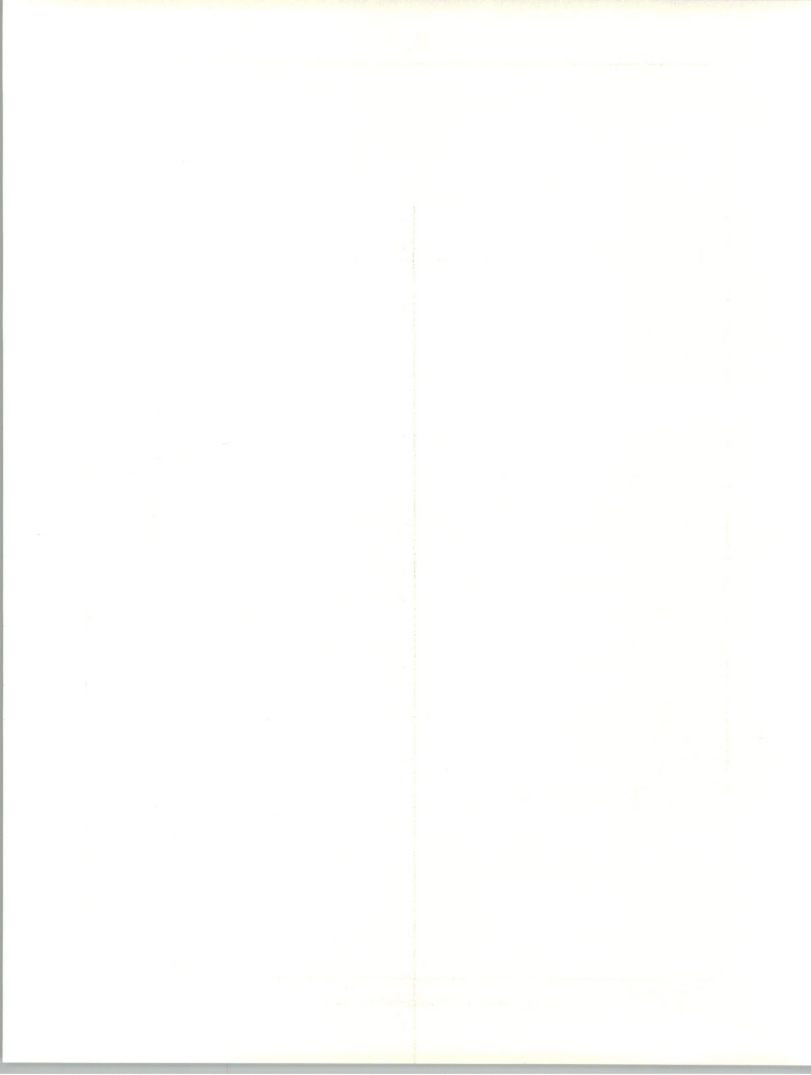
Industry Structure Changes Delivery Modes, 1990

Delivery Modes	Submodes	
	Prior	After
Professional Services	Consulting Software Development Education & Training Facilities Management	Consulting Software Development Education & Training
Processing Services	Transaction Processing Utility Processing Other Processing Facilities Management	Transaction Processing Utility Processing Other Processing Facilities Management
Systems Operations	NA	Professional Services (FM) Processing Services (FM)

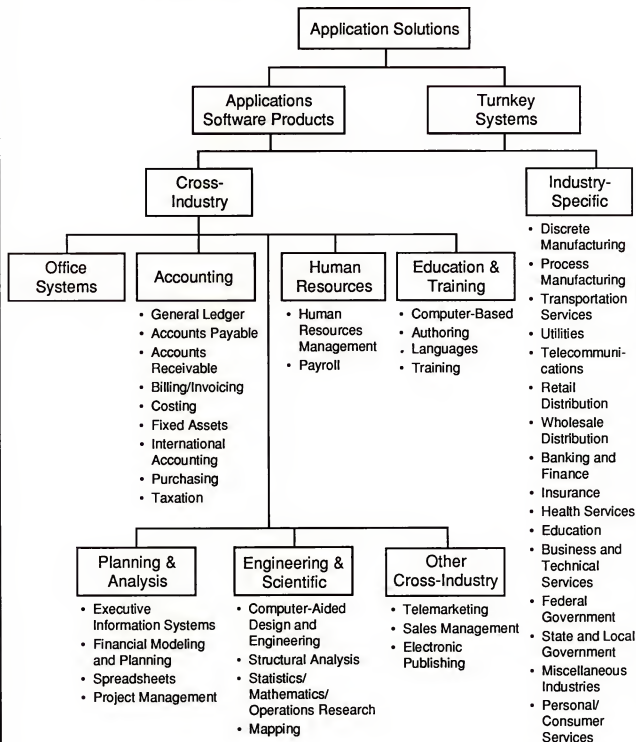


Application Solutions Market Structure, 1990



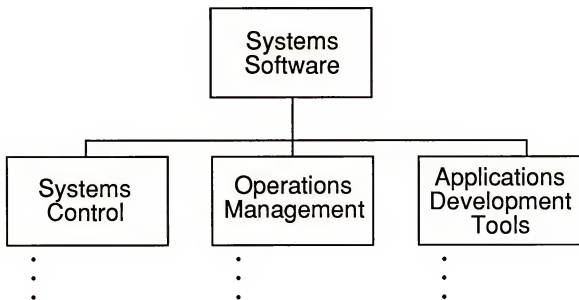


Application Solutions Market Structure, 1990



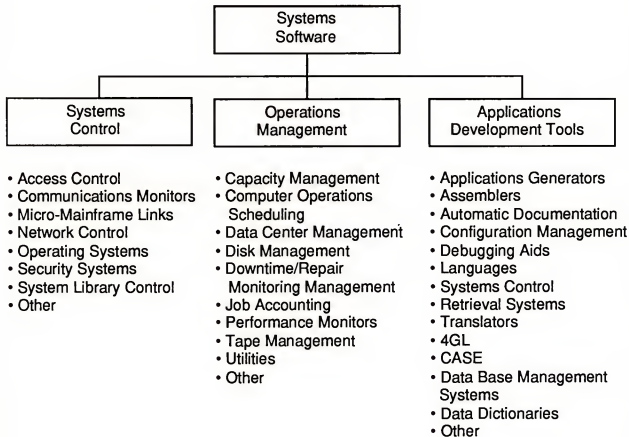


Systems Software Products Market Structure—1990



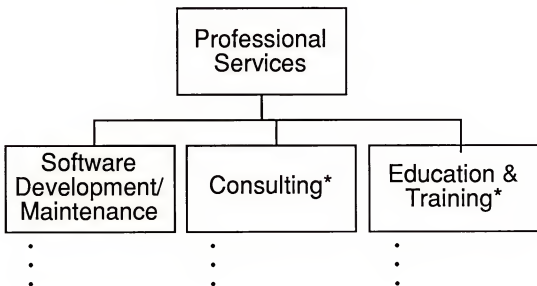


Systems Software Products Market Structure—1990





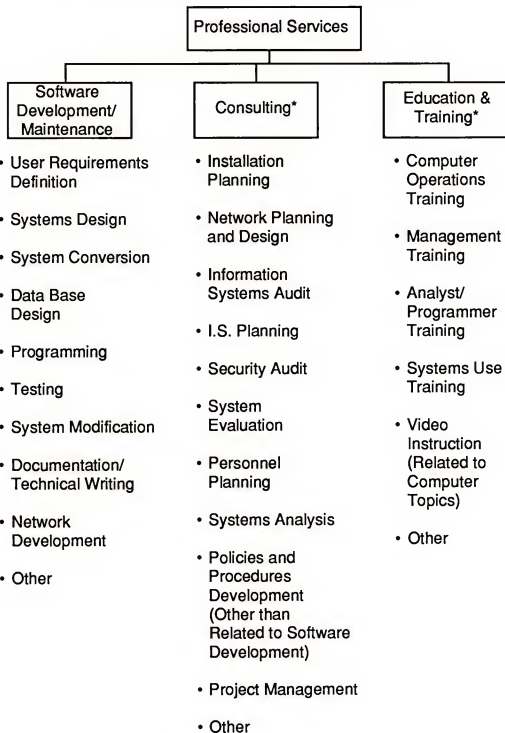
Professional Services Market Structure—1990



*Related to computer systems, topics, or issues



Professional Services Market Structure—1990



*Related to computer systems, topics, or issues



Systems Integration Market 1990—Definition

- Complete solution to complex requirement for:
 - Information systems
 - Networks
 - Automation
- Custom selection and implementation of products and services
- Single vendor responsibility



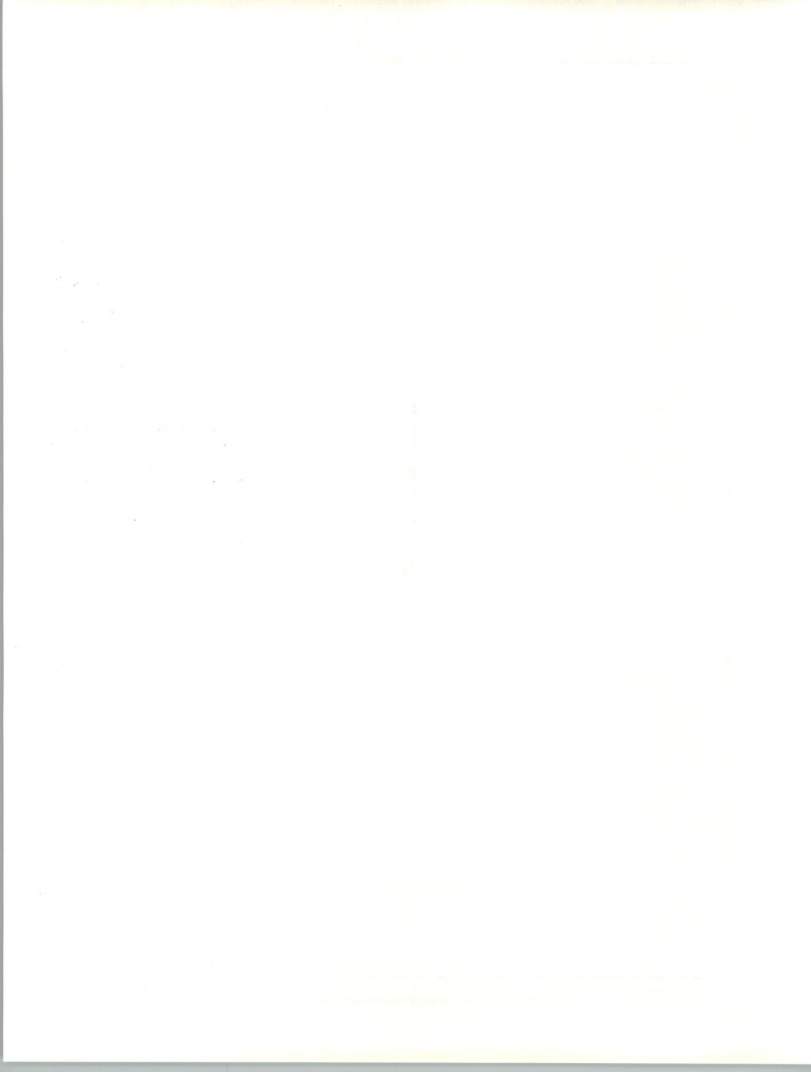
Differences between Professional Services and Systems Integration

Category	Professional Services	Systems Integration
Project Duration	Can be continuous	Limited
Project Management Responsibility	Usually customer	Prime contractor
Computer Equipment Selection	Customer	Prime contractor
Services Provided	Often a single service	Usually multiservice
Pricing	Time and materials	Fixed-price
Item Purchased	Resources	Solution



Transaction Processing Services vs. Systems Operations Resources and Fees

Contract Characteristic	Transaction Processing Services	Systems Operations
Duration	Mid to long-term	Long-term
Resources provided	Everything necessary to process transaction	Flexible: - operations staff - hardware - facilities - programming staff - packaged software
Pricing	Per transaction	Fixed Negotiated revisions
Client control	Volume based	Change control process



Transaction Processing Services vs. Systems Operations Facilities

Contract Characteristic	Transaction Processing Services	Systems Operations
Facilities location	Vendor site	Client or vendor site
Facilities dedication	Always shared	May be client-dedicated or shared

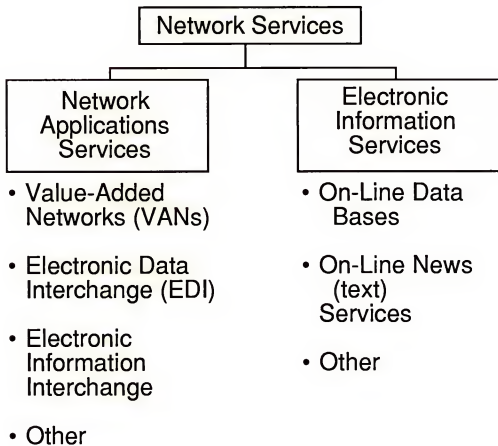


Transaction Processing Services vs. Systems Operations Applications Processed

Contract Characteristic	Transaction Processing Services	Systems Operations
Scope of applications	One or few	Many or all
Nature of applications	Based on proprietary software provided by vendor	Client-specific, based on purchased, vendor or client-provided software



Network Services Market Structure—1990





Industry Sectors, 1990

Industry Specific	Cross-Industry
Discrete Manufacturing	Accounting
Process Manufacturing	Education & Training
Transportation	Engineering & Scientific
Utilities	Human Resources/ Payroll
Telecommunications	Office Systems
Retail Distribution	Other
Wholesale Distribution	- Marketing & Sales
Banking & Finance	- Electronic Publishing
Insurance	
Medical (Health Serv.)	
Education	
Business Services	
Federal Government	
State & Local Government	
Personal (Consumer) Serv.	
Misc. Industries	

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Industry Structure Changes Industries, 1990

Industry	Sub-Industries	
	Prior	After
Transportation	4x All Transport 4512 Airline Reserv. 472x Travel Agencies	4x All Transport Except 4512 & 472x
(Business) Services	65x Real Estate 72x Personal Serv. 73x Business Serv. 76x Misc. Repair 81x Law 89x Misc. Serv.	65x Real Estate 73x Business Serv. 81x Law 89x Misc. Services 87x Engr., Acctg., Etc.
Personal (Consumer) Services	NA	4512 Airline Reserv. 452x Travel Agencies 70x Hotels, lodging 72x Personal Serv. 75x Auto Serv. 76x Misc. Repair 78x Motion Pictures 79x Amusement/Recr. 83x Social Serv. 84x Museums, Galleries 86x Membership Org.

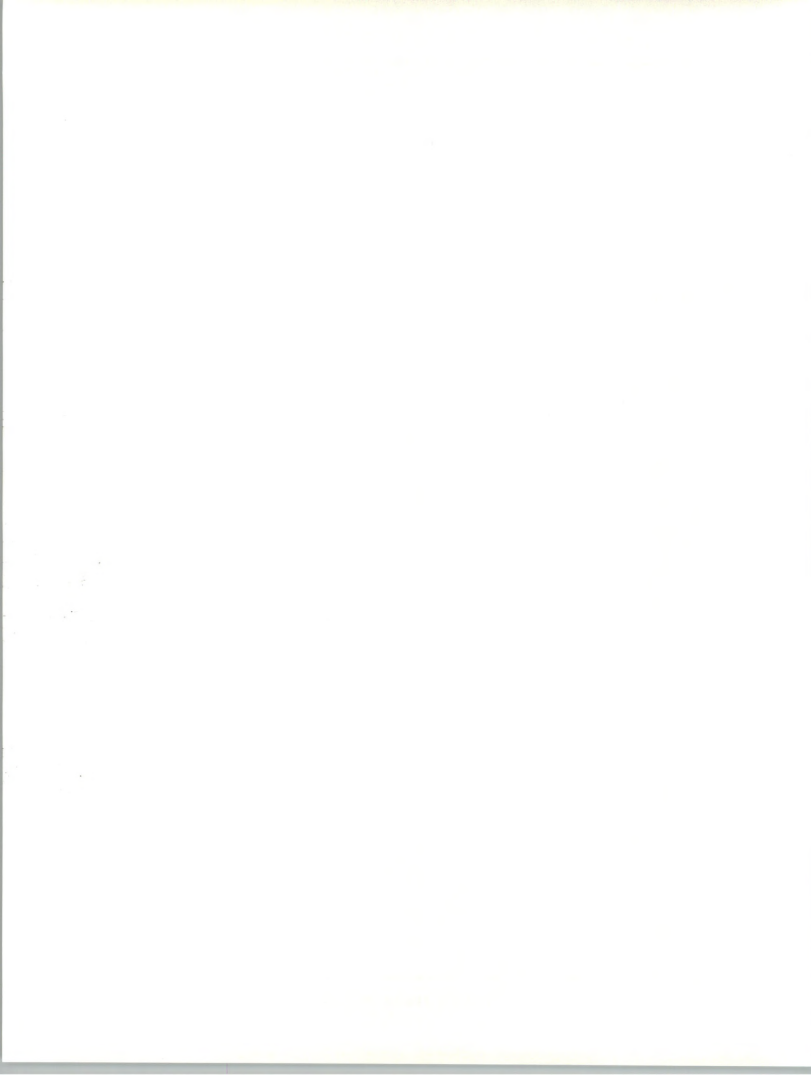
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Data Gathering Primary —1990

Topics	Interviews		Total
	User	Vendors	
Industries-16	150	150	300
Cross-Industry-7	75	75	150
Delivery Modes-8		120	120
Vendor Revenue Survey*		200	200
Vendor Analysis Profiles		200	200
Economic Impact	100	40	140
Total	325	785	1110

* In 1989 this survey was over 1000 vendors



Data Gathering Secondary—1990

Interviews

Topics	User	Vendors	Total
Technology Trends	100		100
Executive Information Systems	125	10	135
IS and Outsourcing	20	10	30
Systems Operations	120	75	195
Systems Integration	120	90	210
EDI	75	50	125
Total	560	235	795



Forecast Development Overview

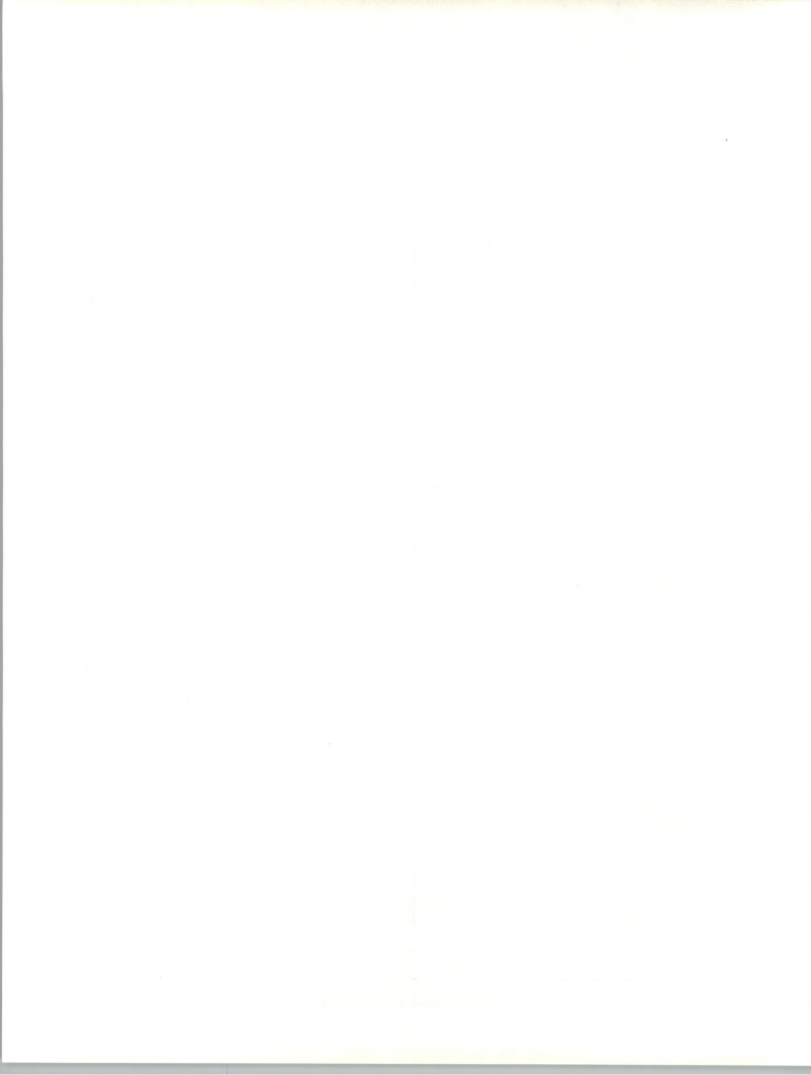
- 15-Year Foundation
- Industry Structure Discipline
- User Expenditures versus Vendor Revenues
- Economic Assumptions
- Current Dollar Forecasts



Delivery Modes versus Industry Sectors

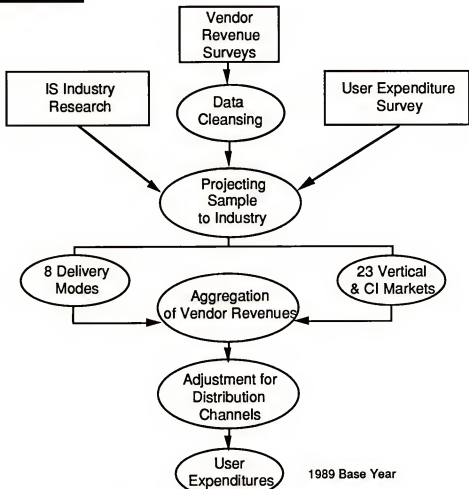
Delivery Mode	Industry Related				Generic
	Vertical		Cross		
	Disc Mfg	Etc	Acctg	Etc	
Processing Services					
Transaction	X	X	X	X	
Utility					X
Other					X
Turnkey Systems	X	X	X	X	
Application Software Products	X	X	X	X	
Systems Operations	X	X			
Systems Integration	X	X			
Professional Services	X	X			
Network Services					
Electronic Info. Services	X	X			X
Network Application	X	X			X
Systems Software Products					X

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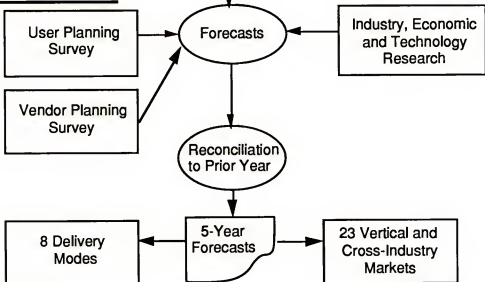


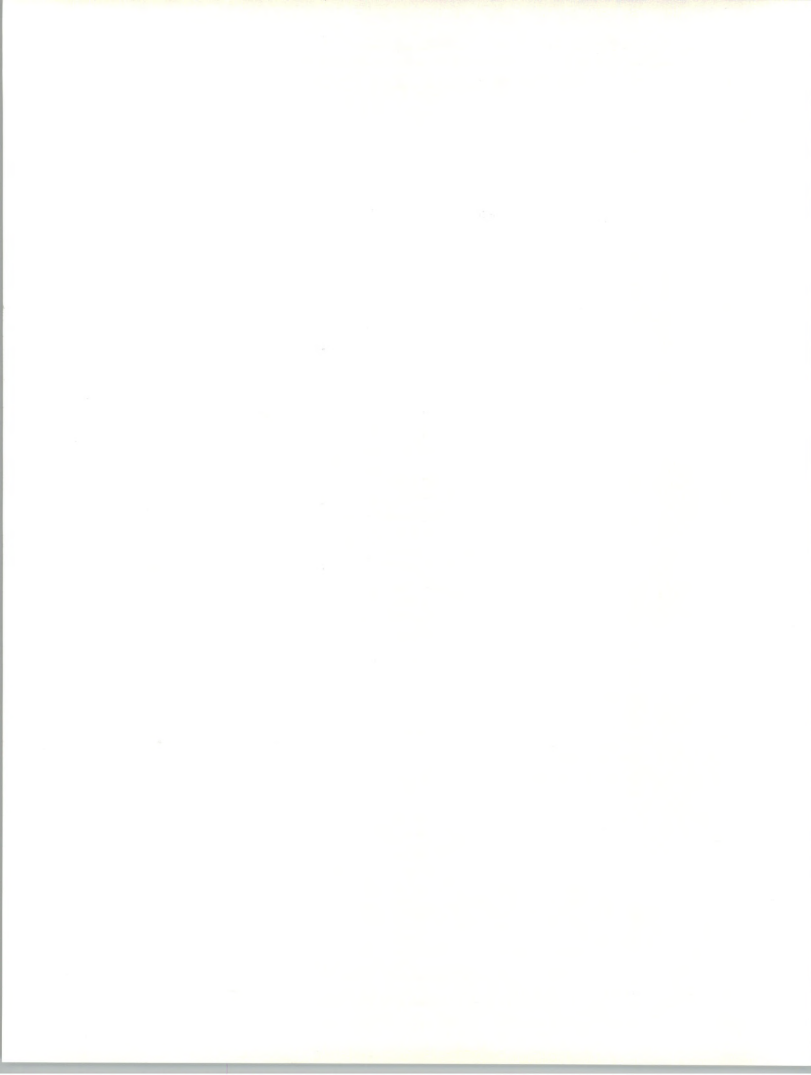
INPUT Research Methodology

I. Base Year



II. Market Forecasts





GNP and Inflation Growth Rate Assumptions 1989-1995

1989 Report Assumptions

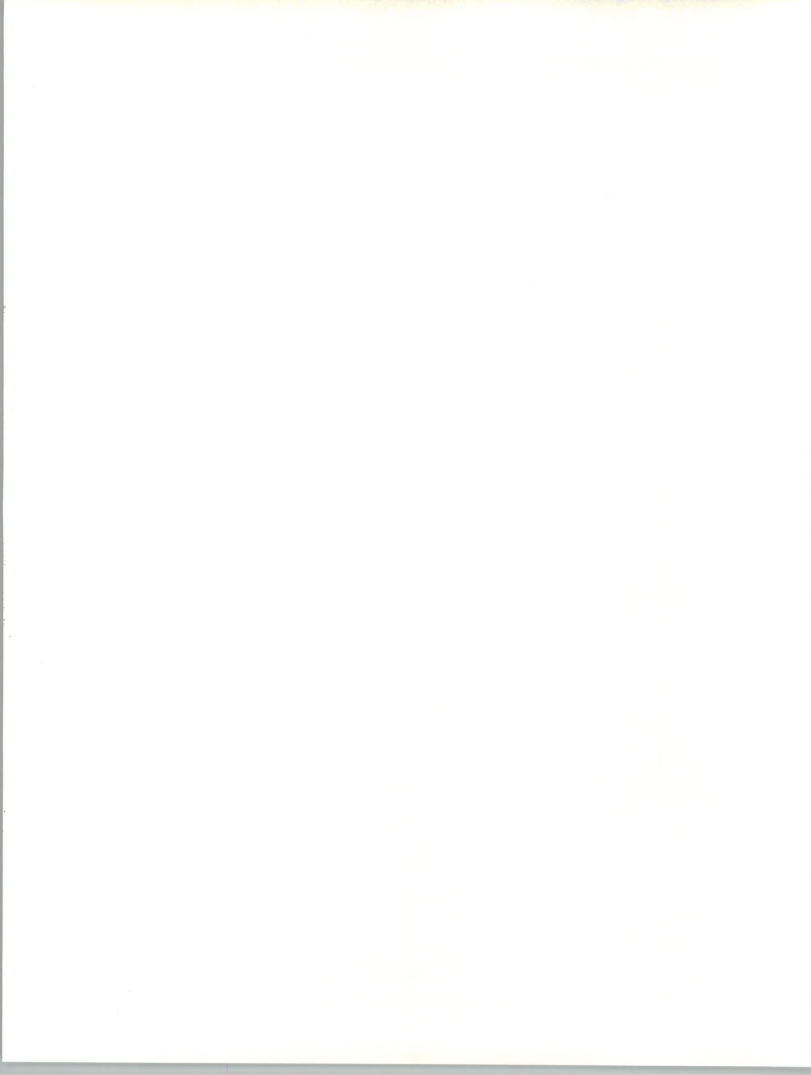
Overall Economy	1989E	1990E	1991E	1992E	1993E	1994E	1995E	CAGR 89-94 (%)	CAGR 90-95 (%)
Nominal GNP	7.6	7.7	7.8	7.0	6.5	6.5	6.5	7.1	--
GNP Deflator	4.8	5.2	5.5	5.0	4.5	4.5	4.5	4.9	--
Real GNP	2.8	2.5	2.3	2.0	2.0	2.0	2.0	2.2	--

1990 Assumptions (Preliminary Estimate)

Overall Economy	1989A	1990E	1991E	1992E	1993E	1994E	1995E	CAGR 89-94 (%)	CAGR 90-95 (%)
Nominal GNP	6.7	5.4	5.4	6.8	6.8	6.8	6.5	6.2	6.5
GNP Deflator	4.1	4.4	4.6	4.1	4.0	4.0	3.9	4.2	4.1
Real GNP	2.5	1.0	0.8	2.6	2.7	2.7	2.5	1.8	2.2

Note: 1989A based on final figures reported by U.S. Commerce Department

1990 onward from CONSENSUS™ economic forecast reported by Blue Chip Economic Indicators,
Sedona, AZ (Vol 15, No 10, October 10, 1990)



Forecast Development Information Sources

- INPUT Direct Research
- INPUT Vendor Files - 3000 Information Services Vendors
 - Datamation 100
 - CIO Magazine
 - Adapso
 - POSPP



Forecast Development Issues

- Noncaptive versus Captive Revenue
- Shifting Control of IS Expenditures
- Length of Vendor/User Agreements
 - Systems Integration
 - Systems Operations
- Major vendors versus secondary vendors
- Vendor versus INPUT Industry Definitions
 - Delivery Modes
 - Industries
- Calendar versus Fiscal Year
- Industry Sector versus Delivery Mode Reconciliation









Appendix: Questionnaire











Appendix: Questionnaire

Impacts of Economic Conditions on Information Systems

Introduction

Hello, This is _____ from INPUT consultants (city/state). Can you give me 30 seconds to see if you are the right person for me to speak with?

We are researching how information systems budgets might be impacted by a possible recession. I would like to trade 20 minutes of your time for a summary of the findings from 100 interviews with individuals like yourself.

Are you the right person to answer some questions about information systems budgets for _____ (organization name). If not, who would you suggest I talk to?

Is this a good time to conduct this interview? (If no ask to set a time to call back.)

Company: _____

Name: _____

Telephone: _____



Demographics

Though I will not be quoting you or citing the firm's answers specifically (as we are looking for industry-wide trends), I would like to make note of your title for perspective.

1. What is your title? _____
2. Is your information systems organization at the corporate or division level?
 Corporate IS Division IS Other (explain)
3. I want to confirm that your organization is in the _____ industry.
 (Check category below).

<input type="checkbox"/> Discrete Manufacturing <input type="checkbox"/> Process Manufacturing <input type="checkbox"/> Transportation <input type="checkbox"/> Utilities <input type="checkbox"/> Telecommunications <input type="checkbox"/> Retail Distribution <input type="checkbox"/> Wholesale Distribution <input type="checkbox"/> Banking & Finance	<input type="checkbox"/> Insurance <input type="checkbox"/> Medical <input type="checkbox"/> Education <input type="checkbox"/> Services <input type="checkbox"/> Federal Government <input type="checkbox"/> State & Local Gov't. <input type="checkbox"/> Consumer & Home <input type="checkbox"/> Other (Specify)
--	---
4. What is the revenue and number of employees of your organization?

a. Revenue <input type="checkbox"/> Over \$10 billion <input type="checkbox"/> Over \$1 billion <input type="checkbox"/> Over \$500 million <input type="checkbox"/> Over \$100 million <input type="checkbox"/> Over \$50 million <input type="checkbox"/> Under \$50 million	b. Number of Employees <input type="checkbox"/> Over 10,000 <input type="checkbox"/> Over 5,000 <input type="checkbox"/> Over 1,000 <input type="checkbox"/> Over 500 <input type="checkbox"/> Under 500
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Information Systems Budget

5. What is the level of your organization's annual Information Systems expenditures?

<input type="checkbox"/> Over \$500 million <input type="checkbox"/> Over \$100 million <input type="checkbox"/> Over \$50 million <input type="checkbox"/> Over \$10 million <input type="checkbox"/> Over \$5 million <input type="checkbox"/> Under \$5 million



6. Do you know what percent of revenue your company spends on information systems?
- 0.5%
 - 1.0%
 - 1.5%
 - 2.0%
 - 2.5%
 - 3.0%
 - 3.5%
 - Greater than 3.5%
7. What percent of the firm's total information systems expenditure is directly controlled by your information systems organization?
- % controlled
8. How is the percentage that is directly controlled changing?
- % controlled in 1985
- % expected to be controlled in 1995
9. If there is considerable change, ask what factors are responsible for the change.
- _____
- _____
- _____
10. By what percentage and in what direction did your IS budget change in 1990 versus 1989?
- Decreased more than 10%
 - Decreased more than 5%
 - Decreased less than 5%
 - Unchanged
 - Increased less than 5%
 - Increased more than 5%
 - Increased more than 10%
11. If +/- 5% or more ask—What were the three primary factors in the change from 1989 to 1990?
- 11a. _____
- 11b. _____
- 11c. _____



12. How much is your IS budget planned to change in 1991 versus 1990?
- Decrease more than 10%
- Decrease more than 5%
- Decrease less than 5%
- Unchanged
- Increase less than 5%
- Increase more than 5%
- Increase more than 10%
13. If +/- 5% or more ask—What are the three primary factors in the change in the 1991 budget?
- 13a. _____
- 13b. _____
- 13c. _____
14. Has the 1991 versus 1990 percentage changed in the past two months?
- Yes No
- If yes, what was it before? _____
- If yes, why the change? _____

Planning Assumptions

15. Do your planning assumptions include a recessionary scenario?
- Yes No (If NO, skip to 18)
16. When does your scenario assume that a recession will start? _____
17. What level of recessionary assumptions is your company currently using in its planning?
- Shallow—lasting through first quarter 1991
- Modest—lasting through the third quarter 1991
- Deep—lasting through 1991 and into 1992
18. What budgetary restrictions are now being applied within your firm?
- 18a. _____
- 18b. _____
- 18c. _____



19. What budgetary restrictions are being discussed for use within your firm over the next few months?

19a. _____

19b. _____

19c. _____

20. How much is your information systems budget for each of the following categories planned to change in 1991 versus 1990?

Category	Staff	Hardware	Software	Outside Services	Telecoms	Other
Decr. over 10%						
Decr. over 5%						
Decr. less than 5%						
Unchanged						
Incr. less than 5%						
Incr. over 5%						
Incr. over 10%						

Please comment on the reasons for any changes over +/- 5%:

Staff _____

Hardware _____

Software _____

Outside Services _____

Telecommunications _____

Other _____



21. Which of the following types of outside services do you use, and what impact will there be on your spending for each that you use (if the recession scenario is played out) or (if a recession starts in the next few months) ?

Change	Use	-10%	-5%	None	+5%	+10%
Consulting						
Systems Development						
Processing Services						
Systems Integration						
Systems Operations (Outsourcing)						

Please comment on any reasons for the changes over +/- 5%:

Consulting _____

Systems Development _____

Processing Services _____

Systems Integration _____

Systems Operations _____

Information Systems Strategy

22. What applications projects will be impacted (if your recession scenario is played out) or (if a recession starts in the next few months)?

22a. Applications that will be accelerated:

22b. Applications that will be delayed:



22c. Applications that will be cancelled:

Note: Questions 23, 24, 25, 26 deleted.

27. Would (your recession scenario becoming reality) or (a recession starting in the next few months) cause you to change your information systems organizational structure?

___ Yes ___ No

How? _____

28. (Under your recession scenario) or (if a recession starts in the next few months) what might the impacts be on your hardware programs in the following categories?

28a. Mainframes

28b. Midrange

28c. Servers & LANS

28d. PC/Workstations

28e. Data Communications



29. Does (your recession scenario) or the start of a recession in the next few months) call for any speeding of the implementation of cooperative processing (PC and mainframe) or networked server/workstation-based applications?

___ Yes ___ No

How?

30. Is there anything else in terms of the impacts of a possible 1991 recession that would be of help to our research?

30a. _____

30b. _____

30c. _____

Thank you for your time. Let me get your correct address. You can expect to receive the summary of this research in January 1991.



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.

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