IBM Area 2

Northeastern Regional Study

Final Report

Prepared for
IBM Corporation

April 17, 1992

INPUT®

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Published by
INPUT
1280 Villa Street
Mountain View, CA 94041-1194
U.S.A.

IBM Area 2—Northeastern Regional Study

Printed in the United States of America.

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YRINE • 301 • 1992

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I

Introduction

I

Introduction

A. Project Objectives and Scope

1. Objectives

- Provide current and projected market sizes for buyer's expenditures for the full spectrum of information and services and products

- Provide projected growth rates for each category of product and services for 1992-1993 and 1992-1996

- Segment the market size and growth rates by vertical industry

- Identify markets of significant size and potential

- Provide the above information for Area 2 and each Trading Area within Area 2

- Provide profiles of competing companies

2. Scope

- IBM's Area 2 and its trading areas, except Puerto Rico defines the geographic area.

- INPUT's standard market definitions except as modified defines the market structure.

  - Products and services or delivery modes—see Exhibit I-1 and Appendix A

  - Industry sectors as revised for IBM—see Appendix B

- Forecasts are based on INPUT's 1991-1996 Market Analysis Program, except where modifiable based on industry interviews.

  - Industry interviews are planned for the utilities and telecommunications sectors.

B. Project Methodology

1. Market Structure Definition

- Trading Areas were defined by IBM based on geography and industry assignments.
  - Each Trading Area is defined in the first exhibit of the corresponding chapter.
- INPUT's Industry Structure was revised to create the Media industry sector. Differences from INPUT structure are:
  - Publishing was removed from Discrete Manufacturing
  - Radio and TV Broadcasting were removed from Telecommunications
  - Publishing and Radio and TV Broadcasting were combined to create Media
  - State and Local Government was split into two parts

2. Market Forecast Process

- INPUT 1991-1996 forecast restated to full industry basis. Elements reallocated include:
  - Cross-industry sectors
  - Systems Software Products
  - Portions of Processing Services and Network Services
  - See Exhibit I-2—Delivery Mode versus Market Sector Forecast Content
- Computer Intelligence data used to determine geographic breakout of U.S. market
  - Number of employees
  - MIPS installed
- Local market defined by geography (counties) and Standard Industry Classification (SIC) Code.
- For each industry, the local market size is estimated based on employment and compute intensity (MIPS per employee) of the local market versus the national total within that industry.
- Forecast ground rules
  - Market sizes are rounded to the nearest million dollars.
  - Growth rates for each industry are based on the national forecasts by industry.
  - Growth rates for each geographic area are based on aggregate growth rates of the industry markets in that geographic area.
- Utilities and Telecommunications sector interviews
  - Trading area forecasts are based on above methodology
  - Summary and findings of sector interviews are presented in Chapter XIII

3. Trading Area Exhibits

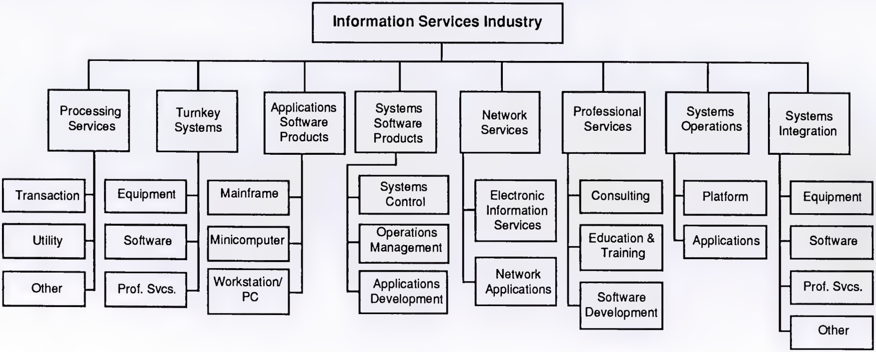
- The following exhibits are provided for each trading area except where not necessary:

  - Exhibit 1 - Geographic And Industry Description
  - Exhibit 2 - Area Demographics — Revenues
  - Exhibit 3 - Area Demographics — Employees
  - Exhibit 4a - Area Demographics — Computing Power
  - Exhibit 4b - Area Demographics — Compute Intensity
  - Exhibit 5 - Total Market Forecast
  - Exhibit 6a,b,c - Market Forecast by Delivery Mode
  - Exhibit 7 - Total Professional Services Forecast by Submode
  - Exhibit 8a,b,c - Market Forecast by Industry Sector
  - Exhibit 9 - Total Professional Services Market Forecast by Industry Sector — Top Industries by Size
  - Exhibit 10 - Market Forecast Data Table, 1992
  - Exhibit 11 - Market Forecast Data Table, 1993
  - Exhibit 12 - Market Forecast Data Table, 1996

- Similar exhibits are presented for Area 2.

YRINE I-1

Information Services Industry Structure—1991



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YRINE I-2

Delivery Mode versus Market Sector Forecast Content

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

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C
U.S. Information Services Market Overview

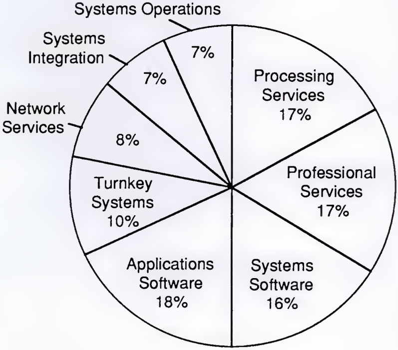
1. Overview

This information is drawn from INPUT's U.S. Market Analyis Program for 1991.

In 1990, overall United States information services user expenditures reached $100 billion, as INPUT had projected. Growth during 1990 was 11%, increasing from the $90 billion level in 1989. Exhibit I-3 shows the distribution of 1990 expenditures by delivery mode. The two software products sectors total 34% of the market, whereas processing services plus systems operations total 24%, and professional services plus systems integration represent another 24% of the industry.

EXHIBIT I-3

Information Services Industry Expenditures by Delivery Mode 1990

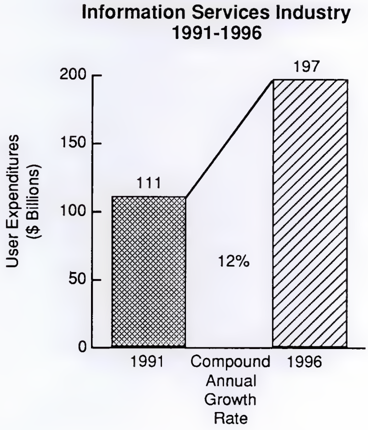


Total Size: $100 Billion

In 1990 INPUT created a new delivery mode—systems operations—by combining the systems operations (facilities management) submodes from processing services and professional services. This delivery mode is the focal point of the major outsourcing trend tracked by INPUT for the past two years and will be a continued focus of INPUT's 1992 Outsourcing and Market Analysis Programs.

The growth rate during 1991 is anticipated to have been 11%, with expenditures reaching $111 billion. This rate represents the second year of much more modest growth for the U.S. information services industry. For the five-year forecast period, INPUT projects a 12% compound annual growth rate (CAGR), resulting in a $197 billion market in 1996, as shown in Exhibit I-4. This CAGR is down from the 13% forecasted for the 1990-1995 period one year ago and is down from a 15% five-year CAGR forecasted in 1989.

EXHIBIT I-4

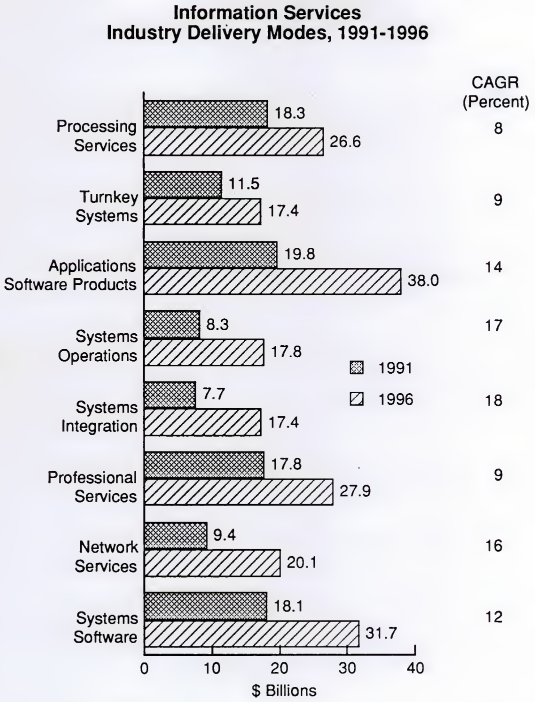


The revision in the five-year forecast reflects a downward revision in growth expectations for the information services industry. Chapter II discusses the factors behind this slowdown, including the economic environment.

The size and growth rates of the eight delivery modes tracked by INPUT are shown in Exhibit I-5. Systems operations, systems integration, and network services reflect the highest CAGRs for the 1991-1996 period. The growth rate projections are lower than last year's projections for all delivery modes except systems operations where the growth rate increased from 16% to 17%.

Overall, the information services industry remains stable and is growing much faster than the U.S. economy as a whole. However, the rate of growth continues to experience decline, and—as Chapter II discusses—there are a number of factors impacting the industry in addition to the economy. Opportunities remain numerous, but a number of underlying revolutions are causing significant disruption.

EXHIBIT I-5


Information Services
Industry Delivery Modes, 1991-1996
CAGR (Percent)
Processing Services
18.3
26.6
8
Turnkey Systems
11.5
17.4
9
Applications Software Products
19.8
38.0
14
Systems Operations
8.3
17.8
17
1991
1996
Systems Integration
7.7
17.4
18
Professional Services
17.8
27.9
9
Network Services
9.4
20.1
16
Systems Software
18.1
31.7
12
0
10
20
30
40
$ Billions

2. Primary Industry Forces

The primary forces impacting the information services market in the early 1990s are listed in Exhibit I-6.

EXHIBIT I-6

Primary Forces 1991-1996

- Weak economy
- Market size—$100 billion
- Increasing influence of large vendors
- Downsizing—shifting technology foundation
- The changing buyer
- Outsourcing—users making larger decisions
- The standards process

The economic slowdown and recession of 1990 and 1991 have caused a significant decrease in the year-to-year growth rates for the information services industry. Rates have decreased from typical annual rates of over 15% to just over 10% growth in 1991.

- The information services industry is still growing much faster than the overall economy, but the exciting growth of the 1980s is not expected in the near term.
- When the economy recovers in 1992 or beyond, the information services industry will see some improvement, but will not experience the quick recovery that followed prior recessions.

The market has reached some level of maturity, with $100 billion in expenditures in 1990 and a projected market size of $111 billion in 1991. An industry of this size finds it harder to grow, but also benefits from increased stability in downturns.

The largest vendors continue to increase in size at least as quickly as the industry grows. Through acquisition and merger as well as true revenue growth, the larger vendors are increasing their dominance. This dominance results in slower change within the industry as the smaller, more nimble vendors are absorbed. And in the information services industry, slower change tends to correlate with slower growth.

- The recent and continuing efforts by IBM to find a new organizational formula for growth exemplify this belief.

- Slower growth by Andersen Consulting and other large services firms in 1991 is a further measure of the challenge. Firms may grow faster than the overall industry, but not without some difficulty and retrenchment or acquisition activity.

Exhibit I-7 lists the leading vendors and their 1990 market share.

The newest major force in the information technology area is downsizing. Downsizing has numerous meanings, but in general relates to a fundamental shift within the information technology foundation from very singular large processing capability to distributed but integrated processors of all sizes. The more correct description for this trend may be rightsizing.

- In the immediate term, the apparent benefits of downsizing are very attractive and are causing many information systems organizations to rethink overall IT strategies. But gaining full benefit can require major re-engineering of key application systems and their underlying data bases, which takes time and resources in a period of economic recession.

- Over the next five years, INPUT believes that downsizing—or rightsizing—will become a revolution within the IT arena and cause major changes in the information systems function and process, as well as the information software and services industry.

EXHIBIT I-7

Selected Leading Information Services Vendors, 1990

Vendor	1990 U.S. Revenues ($ Billions)	Market Share (Percent)
IBM	5.8	6
EDS*	2.4	2
ADP	1.7	2
Computer Sciences	1.5	2
Digital Equipment	1.3	1
Andersen Consulting	1.2	1
Unisys	0.9	1
First Financial Mgmt.	0.9	1
Microsoft	0.8	1
Computer Associates	0.7	1
American Express ISC	0.7	1
PRC	0.7	1
Total	18.6	20

* Excluding GM

- Refer to the recently completed INPUT report, *Putting Downsizing in Perspective*, for an in-depth assessment of the downsizing revolution.

Throughout the 1980s, business managers at all levels became more involved in the information systems processes of their organizations—first as users of fourth-generation languages, then of personal computers, and finally of LANs, relational data bases, etc. At the same time, information systems became more essential in tying the organization together. A direct result—which will have significant impact in the early 1990s—is general management is now deeply involved in major information systems decisions. General management often totally controls the budget decision.

- For the using organization this control means that the information systems executive is more defensive and more fully drawn into the operation, thus the decision criteria changes.

- For the information services vendor this control means there are often two buyers with different priorities and needs. The selling process may be harder and more complex.

- In the 1990s, INPUT believes the buyer of information technology and services will become—to a major degree—the true end user, not the traditional information systems manager of the 1970s and 1980s.

The end of the 1980s saw the beginning of a major shift in the information services market—the movement to outsourcing. Information services and products have always been outsourced, but the degree or breadth of many outsourcing decisions and the amount of risk that the vendor was willing to accept were different.

INPUT recorded these shifts with the definition of two new delivery modes—systems integration and systems operations—over the past three years. These two delivery modes are now the fastest growing delivery modes (17% CAGR for systems operations and 18% CAGR for systems integration). Together they comprise 15% of the information services market and their share will increase throughout the 1990s.

- The movement toward outsourcing offers major opportunities to the aggressive and larger vendors and signals a need for major changes in the strategies of information services vendors of all sizes.

- Outsourcing also creates significant new challenges for information services vendors. A true outsourcing relationship increases the business risk assumed by the vendor, broadens the level of responsibility assumed and the skills required by the vendor, and typically shifts the financial relationship toward a fixed-price structure.

Outsourcing will be the fastest growing sector of the market for the next five years. Buyers and vendors have much to learn about how this type of relationship evolves and brings financial benefit to both organizations.

In the late 1980s and to date in the 1990s, the standards process has had major impact on the information services industry. Although most of the impacts are beneficial to users, INPUT believes that these impacts currently negatively affect growth within the industry.

- Usually progress in standards is slow and causes a wait-and-see attitude among users or buyers. The benefits are attractive and appear worth waiting for.

- The current open systems phenomenon has both crystallized and confused the impacts of standards. Promises of true interoperability and all that it implies suggest there is great value in an open systems-based IT strategy, but the technology is not really available. The result is a slowdown in long-range IT decisions and an inclination to make current, short-range IT decisions.

- INPUT believes that by the middle of the decade (perhaps as early as 1993) the impacts of the standards process on industry growth will be much more favorable.

a. Industry Sector Markets

The 15 standard INPUT industry market sectors are displayed in Exhibit I-8.

Banking and finance, historically the largest sector, has experienced perhaps the greatest impacts of the current economic slowdown as well as most of the other primary forces affecting the information services industry. Banking is now the primary market for outsourcing services, but overall the projected growth is just 11% CAGR over the next five years and may decline further,

The two manufacturing sectors continue to provide growth levels at or above the industry average.

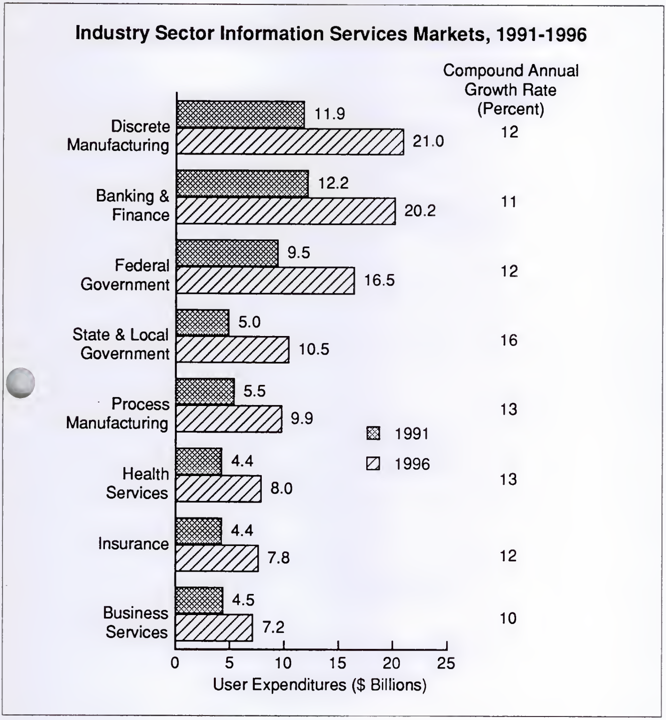
Industries expected to experience below industry-average growth over the next five years are transportation, business services, education, miscellaneous industries, and banking and finance.

Above industry-average growth is projected for telecommunications, state and local government, and the retail distribution industry.

The information services industry has always contained significant opportunities at the vertical-industry level. INPUT believes opportunities will increase in importance throughout the 1990s as organizations seek ever more specialized applications solutions.

During 1991 INPUT began to analyze the U.S. information services industry on a regional basis. Early studies have confirmed that there are significant variations in markets across the U.S. and within vertical-industry sectors in different parts of the U.S.

EXHIBIT I-8


Industry Sector Information Services Markets, 1991-1996
Compound Annual Growth Rate (Percent)
Discrete Manufacturing
11.9
21.0
12
Banking & Finance
12.2
20.2
11
Federal Government
9.5
16.5
12
State & Local Government
5.0
10.5
16
Process Manufacturing
5.5
9.9
13
Health Services
4.4
8.0
13
Insurance
4.4
7.8
12
Business Services
4.5
7.2
10
1991
1996
0
5
10
15
20
25
User Expenditures ($ Billions)

II

Area 2 Summary

II

Area 2

A. Summary

1. Overview

- Area 2 represents 18% of the total U.S. information services market.
  - Percentages of U.S. market by industry range from 6% (Federal Government) to 32% (Banking and Finance)—see Exhibit II-5d.
  - Percentages of U.S. market by delivery mode range from 12% (Systems Integration with Federal Government sector impact) to 21% (Processing Services)—see Exhibit II-3c.
- Industry markets range from $300 million (Utilities) to $6.8 billion (Banking and Finance).
- Trading areas range from $600 million (Lower Connecticut) to $5.6 billion (Northern New England).

2. Growth Rates

- Growth rates by delivery mode do not vary measurably from U.S. market growth rates.

- Growth rates by trading area do not vary measurably whether large or smaller.
  - Finance & Securities is lowest (10%) because of single industry
  - G&PS is highest (14%) because of industries excluded

B. Services Market Opportunities

- Total professional services—Exhibit II-7 identifies the industry/trading area sectors that are over $25 million in 1992.
  - 32 of the 128 industry/trading area sectors are over $25 million; many over $100 million
  - All 7 Discrete Manufacturing trading areas
  - Banking and Finance - 5 trading areas
  - State Government - 5 trading areas
  - G&PS has 6 industry sectors over $25 million
  - Northern New England has 7 industry sectors over $25 million
- Systems operations—Exhibit II-8 identifies the industry/trading area sectors that are over $15 million in 1992.
  - 24 of the 128 sectors are over $15 million
  - Banking and Finance - 6 trading areas
  - Health Services - 5 trading areas
  - Insurance - 3 trading areas

YRINE II-1

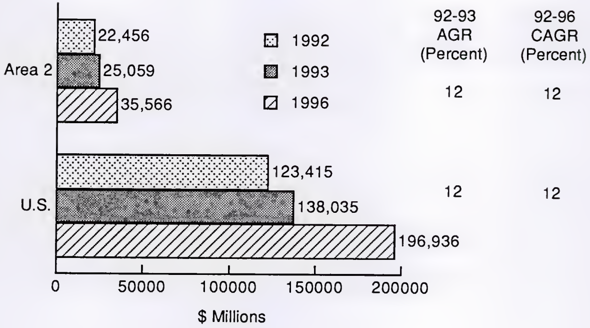
Trading Area Definition by Industry Sector

Industry Sector	New York Metro*	Long Island	New Jersey	N New England	Central Conn.	Lower Conn.	NE New York	Cent./West New York
Discrete Manufacturing	NJ	X	X	X	X	X	X	X
Process Manufacturing	NJ	X	X	X	X	X	X	X
Transportation	G&PS	X	G&PS	X	X	X	X	X
Utilities	G&PS	G&PS	X	X	X	X	X	X
Telecommunications	G&PS	G&PS	G&PS	X	X	X	X	X
Media (Brdcst/Publish)	G&PS	X	G&PS	X	X	X	X	X
Retail Distribution	I&D	X	I&D	X	X	X	X	X
Wholesale Distribution	I&D	X	X	X	X	X	X	X
Banking & Finance	F&S	X	X	X	X	X	X	X
Insurance	I&D	I&D	I&D	X	X	X	X	X
Health Services	G&PS	X	X	X	X	X	X	X
Education	G&PS	X	X	X	X	X	X	X
Business Services	G&PS	X	X	X	X	X	X	X
Federal Government	G&PS	X	X	X	X	X	X	X
State Government	G&PS	X	X	X	X	X	X	X
Local Government	G&PS	X	X	X	X	X	X	X
Misc. Industries	G&PS	X	X	X	X	X	X	X

*New York Metro includes:
Manhattan
Bronx
Brooklyn
Queens
Staten Island
Westchester
Rockland

YRINE II-2

Total Market Forecast—1992, 1993, 1996
Area 2



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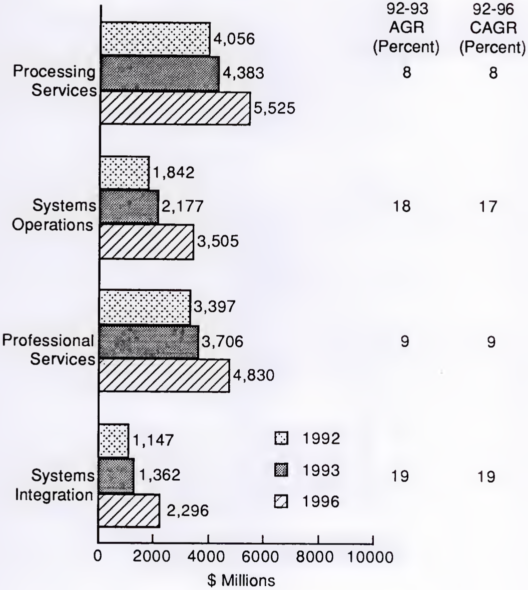
YRINE II-3a

Market Forecast by Delivery Mode—1992, 1993, 1996
Area 2



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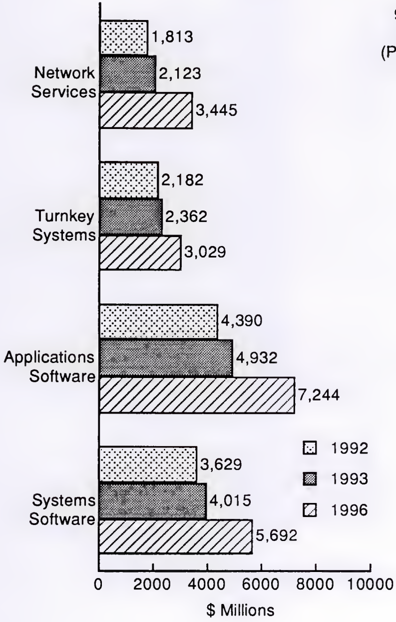
YRINE II-3b

Market Forecast by Delivery Mode—1992, 1993, 1996
Area 2



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Network Services	17	17
Turnkey Systems	8	9
Applications Software	12	13
Systems Software	11	12

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YRINE II-3c

Area 2 Compared to U.S. by Delivery Mode

Industry Sector	1992 Market		
	Area 2 Market ($B)	U.S. Market ($B)	Area 2 Percent of U.S. Market
Processing Services	4.1	19.7	21
Systems Operations	1.8	9.7	19
Professional Services	3.4	19.4	18
Systems Integration	1.1	9.0	12
Network Services	1.8	10.8	17
Turnkey Systems	2.2	12.5	18
Applications Software Products	4.4	22.4	20
Systems Software Products	3.6	19.9	18
Total	22.4	123.4	18

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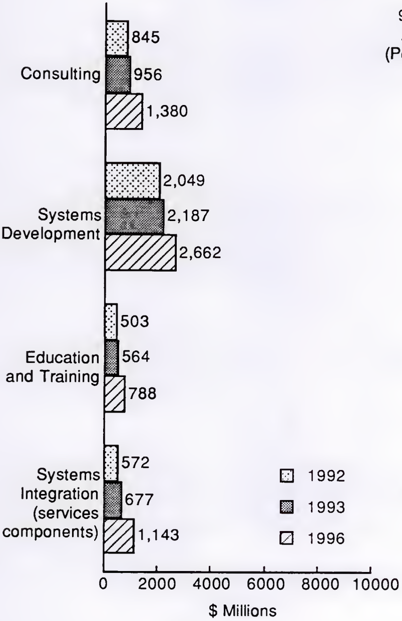
YRINE II-4

Total Professional Services Market Forecast by Submode—1992, 1993, 1996 Area 2



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Consulting	13	13
Systems Development	7	7
Education and Training	12	12
Systems Integration (services components)	18	19

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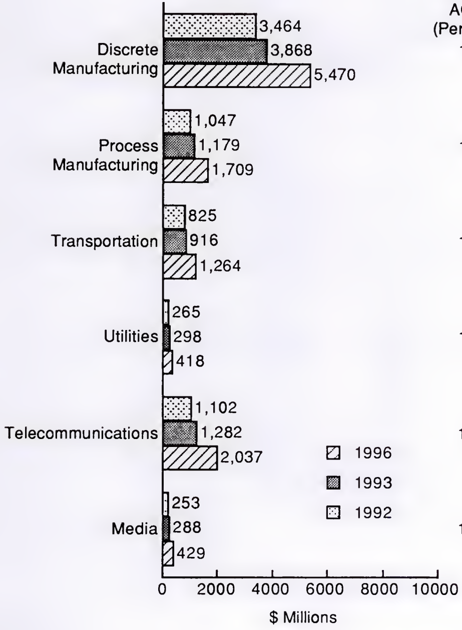
YRINE II-5a

Market Forecast by Industry Sector—1992, 1993, 1996
Area 2



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Discrete Manufacturing	12	12
Process Manufacturing	13	13
Transportation	11	11
Utilities	13	12
Telecommunications	16	17
Media	14	14

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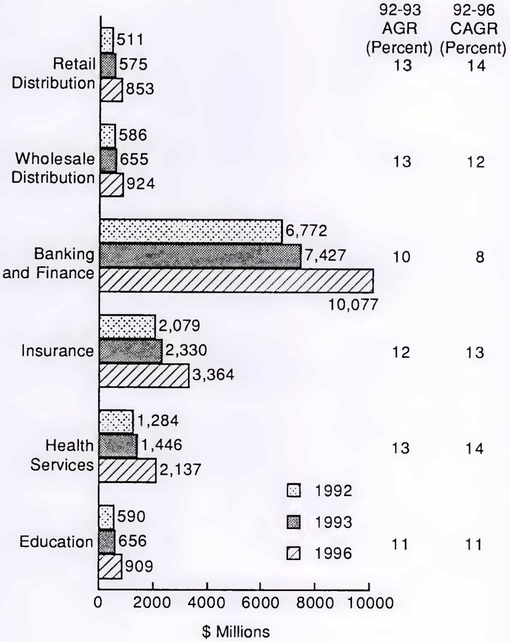
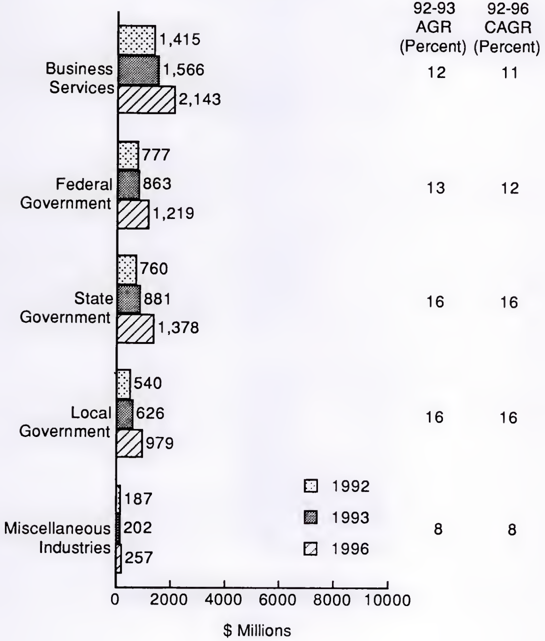
YRINE II-5b

Market Forecast by Industry Sector—1992, 1993, 1996
Area 2



YRINE II-5c

Market Forecast by Industry Sector—1992, 1993, 1996
Area 2



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Area 2 Compared to U.S. by Industry Sector

Industry Sector	1992 Market		
	Area 2 Market ($B)	U.S. Market ($B)	Area 2 Percent of U.S. Market
Discrete Manufacturing	3.5	20.0	17
Process Manufacturing	1.0	10.0	10
Transportation	0.8	6.1	13
Utilities	0.3	2.2	14
Telecommunications	1.1	5.9	19
Media (Brdcst/Publish)	0.2	0.9	28
Retail Distribution	0.5	3.2	16
Wholesale Distribution	0.6	3.8	16
Banking and Finance	6.8	21.0	32
Insurance	2.1	7.8	27
Health Services	1.3	7.3	18
Education	0.6	3.1	19
Business Services	1.4	8.2	17
Federal Government	0.8	13.5	6
State Government	0.8	4.5	18
Local and Misc. Government	0.6	4.1	15
Misc. Industries	0.2	1.8	11
Total	22.6	123.4	18

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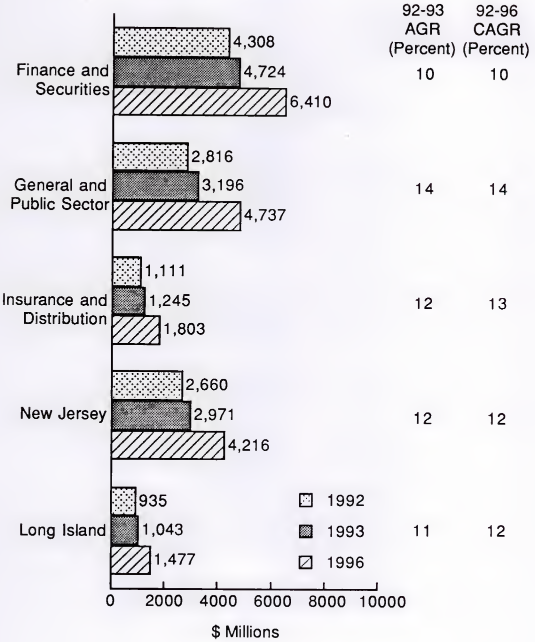
YRINE II-6a

Market Forecast by Trading Area—1992, 1993, 1996
Area 2



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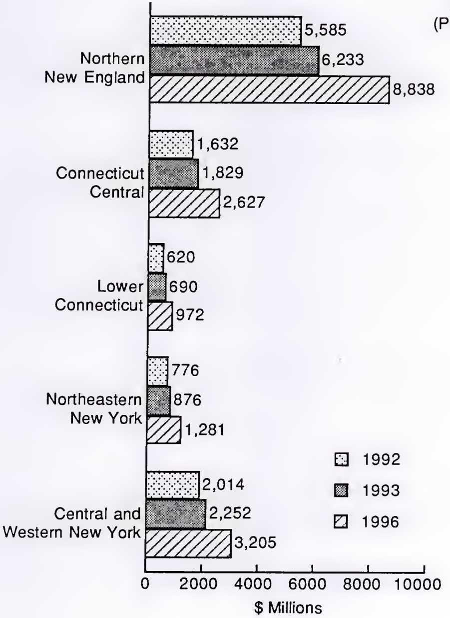
YRINE II-6b

Market Forecast by Trading Area
Area 2



Trading Area	92-93 AGR (Percent)	92-96 CAGR (Percent)
Northern New England	12	12
Connecticut Central	12	13
Lower Connecticut	11	12
Northeastern New York	13	13
Central and Western New York	12	12

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YRINE II-7

Major Total Professional Services Markets by Industry Sector (Markets Greater than $25 Million)

Industry Sector	Trading Areas									
	F&S	G&PS	I&D	New Jersey	Long Island	No. New England	Central Conn.	Lower Conn.	NE New York	Cent./ West New York
Discrete Manufacturing				X	X	X	X	X	X	X
Process Manufacturing				X		X				X
Transportation		X								
Utilities										
Telecommunications		X								
Media (Brdcst/Publish)		X								
Retail Distribution										
Wholesale Distribution										
Banking and Finance	X			X	X	X				X
Insurance			X			X	X			
Health Services										
Education										
Business Services						X				
Federal Government		X		X		X				
State Government		X		X		X	X		X	X
Local Government		X		X		X				
Misc. Industries										

YRINE II-8

Systems Operations Markets by Industry Sector, 1992 (Markets Greater than $15 Million)

Industry Sector	Trading Areas									
	F&S	G&PS	I&D	New Jersey	Long Island	No. New England	Central Conn.	Lower Conn.	NE New York	Cent./West New York
Discrete Manufacturing				X		X				X
Process Manufacturing				X		X				
Transportation		X								
Utilities										
Telecommunications										
Media (Brdcst/Publish)										
Retail Distribution										
Wholesale Distribution										
Banking & Finance	X			X	X	X		X		X
Insurance			X			X	X			
Health Services		X		X	X	X				X
Education										
Business Services										
Federal Government		X		X		X				
State Government		X		X		X			X	
Local Government										
Misc. Industries										

III

Finance and Securities Trading Area

III

Finance and Securities Trading Area

YRINE III-1

Geographic and Industry Description
Finance and Securities Trading Area

Geography

States	*Boroughs/Counties*	
New York	Manhattan	Staten Island
	Bronx	West Chester
	Brooklyn	Rockland
	Queens	Nassau
		Suffolk

Significant Industries	
Industry Sector	1992 Information Services Market Forecast ($M)
Banking and Finance	4,308

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YRINE III-2

Area Demographics—Revenues Finance and Securities Trading Area

Revenues ($ Millions)	Percent of Total Establishments*
<10	10
10-49	31
50-99	16
100-249	20
250-499	9
500-999	5
>1,000	9
Total	100 **

*Total establishments for trading area: 558

**Percentages may not add exactly to 100 due to rounding.

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YRINE III-3

Area Demographics—Employees Finance and Securities Trading Area

Employees	Percent of Total Establishments*
1-99	49
100-499	32
500-999	7
1,000-4,999	10
>5,000	2
Total	100 **

*Total establishments for trading area: 558

**Percentages may not add exactly to 100 due to rounding.

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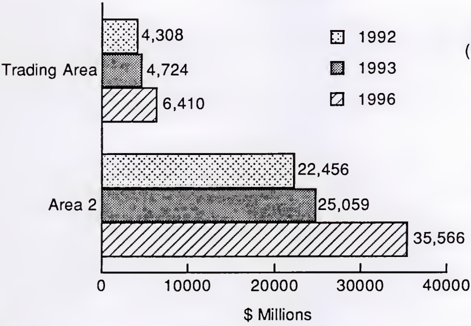
YRINE III-5

Total Market Forecast—1992, 1993, 1996
Finance and Securities Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Trading Area	10	10
Area 2	12	12

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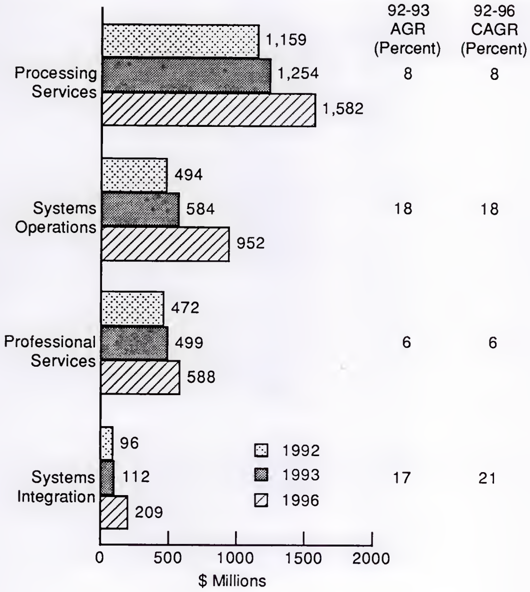
YRINE III-6a

Market Forecast by Delivery Mode—1992, 1993, 1996
Finance and Securities Trading Area



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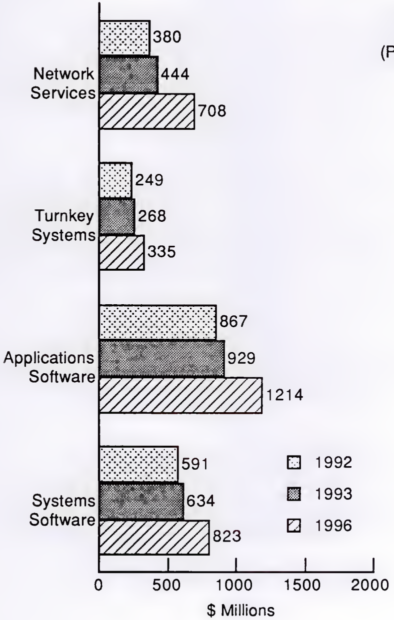
YRINE III-6b

Market Forecast by Delivery Mode—1992, 1993, 1996
Finance and Securities Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Network Services	17	17
Turnkey Systems	8	8
Applications Software	7	9
Systems Software	7	9

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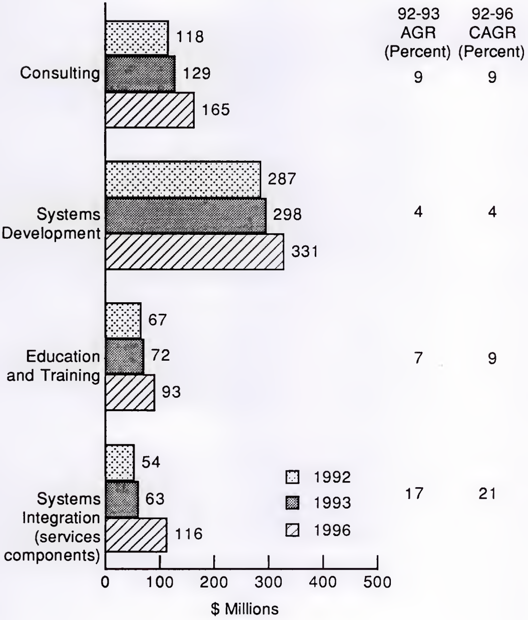
YRINE III-7

Total Professional Services Market Forecast by Submode—1992, 1993, 1996 Finance and Securities Trading Area



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YRINE III-9

Total Professional Services* Market Forecast by Industry Sector—Finance and Securities Trading Area

Top Industries by Market Size

Rank	Industry	1992 ($M)	1992-1993 AGR (Percent)	1993 ($M)	1996 ($M)	1992-1996 CAGR (Percent)
1	Banking and Finance	526	7	562	705	8

* Total Professional Services = Professional Services (consulting, systems development, education and training) + Systems Integration (services components)

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Finance & Securities

TOTAL MARKET ---
SIZE: 4,308

** 1992 FORECAST **

YEARS/DELIVERY MODES	-- PROC SERVICES -- Trans	Util	Other	- TURNKEY SYSTEMS - Equip	S/W	Prof	- APPLIC S/W PROD - Main	Mini	PC	- SYST OPS - Platf	Applic
Submode Totals -->	944	58	157	120	90	40	353	254	260	170	324
DELMODE TOTALS ---->			1,159			249			867		494
VERTICAL INDUSTRY MKTS	944	58	157	120	90	40	353	254	260	170	324
Discrete Manufacturing	0	0	0	0	0	0	0	0	0	0	0
Process Manufacturing	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0
Utilities	0	0	0	0	0	0	0	0	0	0	0
Telecommunications	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	0	0	0	0	0	0	0	0	0	0	0
Retail Distribution	0	0	0	0	0	0	0	0	0	0	0
Wholesale Distribution	0	0	0	0	0	0	0	0	0	0	0
Banking and Finance	944	58	157	120	90	40	353	254	260	170	324
Insurance	0	0	0	0	0	0	0	0	0	0	0
Health Services	0	0	0	0	0	0	0	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0
Business Services	0	0	0	0	0	0	0	0	0	0	0
Federal Government	0	0	0	0	0	0	0	0	0	0	0
State Govt	0	0	0	0	0	0	0	0	0	0	0
Local & Misc Govt	0	0	0	0	0	0	0	0	0	0	0
Miscel Industries	0	0	0	0	0	0	0	0	0	0	0

YEARS/DELIVERY MODES	-- SYSTEMS INTEGRATION --- Equip	S/W	Prof	Other	-- PROF SERVICES -- Cons	Devel	Ed&Tr	- NET SVCS - EIS	N/A	-- SYST SOFTWARE -- Main	Mini	PC
Submode Totals -->	36	7	49	5	118	287	67	355	25	301	184	106
DELMODE TOTALS ---->				96			472		380			591
VERTICAL INDUSTRY MKTS	36	7	49	5	118	287	67	355	25	301	184	106
Discrete Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0
Process Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0
Utilities	0	0	0	0	0	0	0	0	0	0	0	0
Telecommunications	0	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	0	0	0	0	0	0	0	0	0	0	0	0
Retail Distribution	0	0	0	0	0	0	0	0	0	0	0	0
Wholesale Distribution	0	0	0	0	0	0	0	0	0	0	0	0
Banking and Finance	36	7	49	5	118	287	67	355	25	301	184	106
Insurance	0	0	0	0	0	0	0	0	0	0	0	0
Health Services	0	0	0	0	0	0	0	0	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0
Business Services	0	0	0	0	0	0	0	0	0	0	0	0
Federal Government	0	0	0	0	0	0	0	0	0	0	0	0
State Govt	0	0	0	0	0	0	0	0	0	0	0	0
Local & Misc Govt	0	0	0	0	0	0	0	0	0	0	0	0
Miscel Industries	0		0		0	0	0	0	0	0	0	0

Finance and Securities—1992 Forecast Table
YRINE III-10

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Finance & Securities

TOTAL MARKET ---
SIZE: 4,724
92-93 GROWTH: 9.7%

** 1993 FORECAST **

EARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
ubmode Totals -->	1,012	61	181	129	97	43	376	274	279	192	392	41	8	57	6	129	298	72	416	28	322	195	117
DELMODE TOTALS ---->			1,254			268			929		584				112			499		444			634
ERTICAL INDUSTRY MKTS	1,012	61	181	129	97	43	376	274	279	192	392	41	8	57	6	129	298	72	416	28	322	195	117
iscrete Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
rocess Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ransportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
tilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
elecommunications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
edia (Brdcst/Publish)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
etail Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
holesale Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
anking and Finance	1,012	61	181	129	97	43	376	274	279	192	392	41	8	57	6	129	298	72	416	28	322	195	117
nsurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ealth Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ducation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
usiness Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ederal Government	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
tate Govt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ocal & Misc Govt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
iscel Industries	0	0	0	0	0	0	0	0	0	0	0	0		0		0	0	0	0	0	0	0	0

Finance and Securities—1993 Forecast Table
YRINE III-11

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Finance & Securities

TOTAL MARKET ---
SIZE: 6,410
92-96 GROWTH: 10.4%

1996 FORECAST

YEARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
Submode Totals -->	1,235	71	276	161	121	54	489	359	366	263	689	77	15	106	10	165	331	93	665	43	409	243	171
DELMODE TOTALS ---->			1,582			335			1,214		952				209			588		708			823
VERTICAL INDUSTRY MKTS	1,235	71	276	161	121	54	489	359	366	263	689	77	15	106	10	165	331	93	665	43	409	243	171
Discrete Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Process Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Telecommunications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wholesale Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banking and Finance	1,235	71	276	161	121	54	489	359	366	263	689	77	15	106	10	165	331	93	665	43	409	243	171
Insurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Business Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Federal Government	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Govt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local & Misc Govt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscel Industries	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0

Finance and Securities—1996 Forecast Table

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IV

General and Public Sector Trading Area

IV

General and Public Sector Trading Area

YRINE IV-1

Geographic and Industry Description
General and Public Sector Trading Area

Geography

States	*Boroughs/Counties*	
New York	Manhattan	Staten Island
	Bronx	West Chester
	Brooklyn	Rockland
	Queens	Nassau
		Suffolk

Significant Industries

Industry Sector	1992 Information Services Market Forecast ($M)
Discrete Manufacturing	-
Process Manufacturing	-
Transportation	538
Utilities	66
Telecommunications	939
Media	148
Retail Distribution	-
Wholesale Distribution	-
Banking and Finance	-
Insurance	-
Health Services	248
Education	125
Business Services	333
Federal Government	120
State Government	94
Local Government	166
Miscellaneous Industries	40
Total	2,816*

* Industry sector forecast numbers may not add exactly to trading area total due to rounding.

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YRINE IV-2

Area Demographics—Revenues General and Public Sector Trading Area

Revenues ($ Millions)	Percent of Total Establishments*
<10	51
10-49	29
50-99	8
100-249	6
250-499	3
500-999	1
>1,000	1
Total	100 **

*Total establishments for trading area: 2,160

**Percentages may not add exactly to 100 due to rounding.

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YRINE IV-3

Area Demographics—Employees
General and Public Sector Trading Area

Employees	Percent of Total Establishments*
1-99	48
100-499	33
500-999	8
1,000-4,999	9
>5,000	1
Total	100

*Total establishments for trading area: 2,160

**Percentages may not add exactly to 100 due to rounding.

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Area Demographics—Computing Power General and Public Sector Trading Area

Industry Sector	% of Total Establishments	% of Total MIPS
Discrete Manufacturing	-	-
Process Manufacturing	-	-
Transportation	17	7
Utilities	1	2
Telecommunications	4	17
Media	9	8
Retail Distribution	-	-
Wholesale Distribution	-	-
Banking and Finance	-	-
Insurance	-	-
Health Services	4	6
Education	7	30
Business Services	45	24
Federal Government	4	2
State Government	2	1
Local Government	4	4
Miscellaneous Industries	3	1
Totals	100*	100*

*Percentages may not add exactly to 100 due to rounding.

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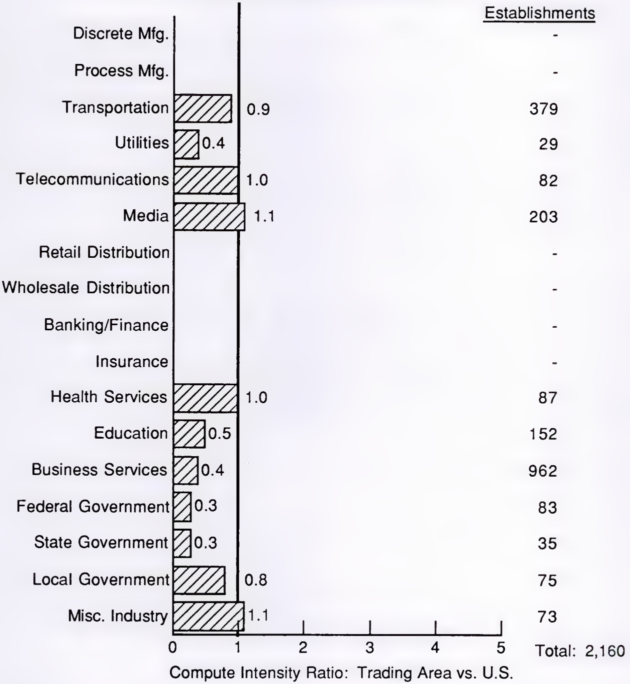
YRINE IV-4b

Area Demographics—Compute Intensity*
General and Public Sector Trading Area



* Definition: Compute Intensity is a measure of the average level of computing resources for an industry sector. It is calculated as follows:

$$\frac{\text{Average \# MIPS}}{\text{Average \# Employees}}$$

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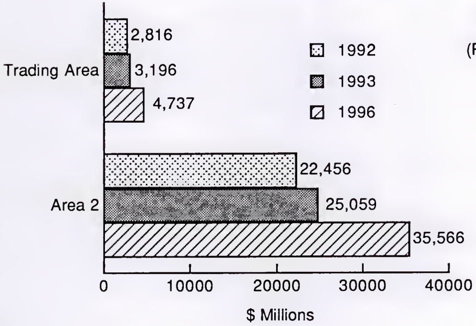
YRINE IV-5

Total Market Forecast—1992, 1993, 1996
General and Public Sector Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Trading Area	14	14
Area 2	12	12

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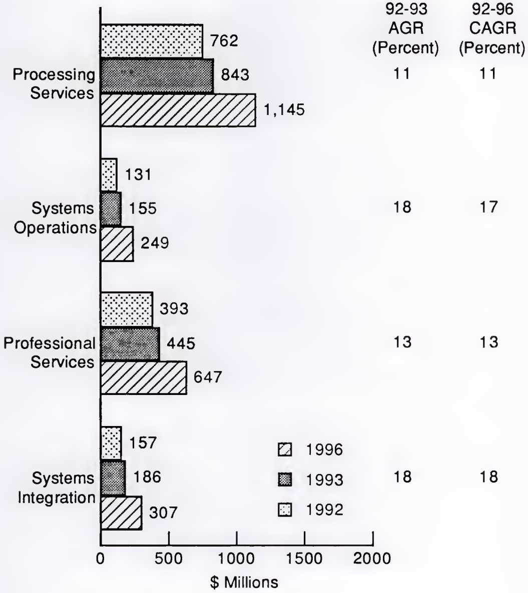
YRINE IV-6a

Market Forecast by Delivery Mode—1992, 1993, 1996
General and Public Sector Trading Area



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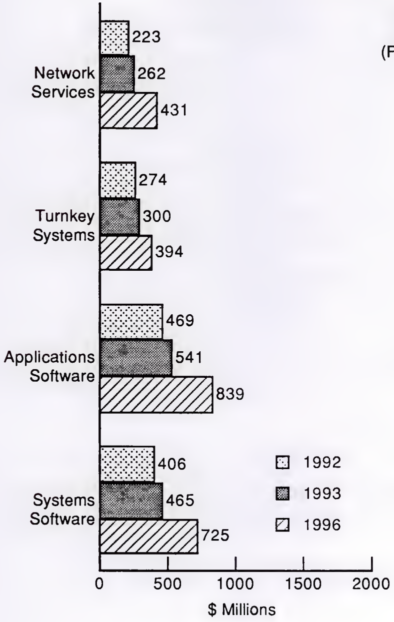
YRINE IV-6b

Market Forecast by Delivery Mode—1992, 1993, 1996
General and Public Sector Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Network Services	17	18
Turnkey Systems	9	10
Applications Software	15	16
Systems Software	15	16

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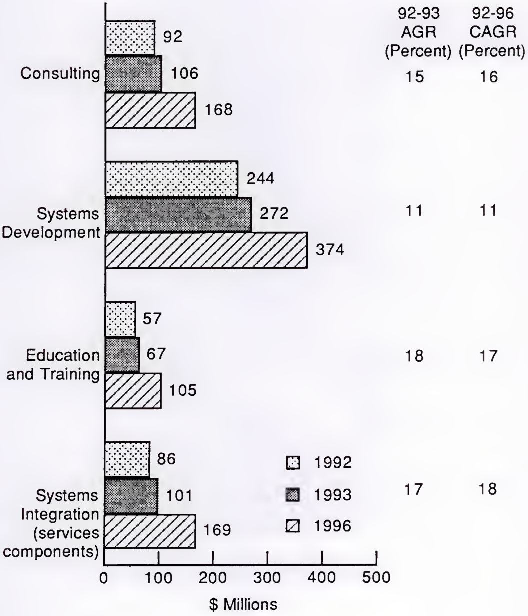
YRINE IV-7

Total Professional Services Market Forecast by Submode—1992, 1993, 1996 General and Public Sector Trading Area



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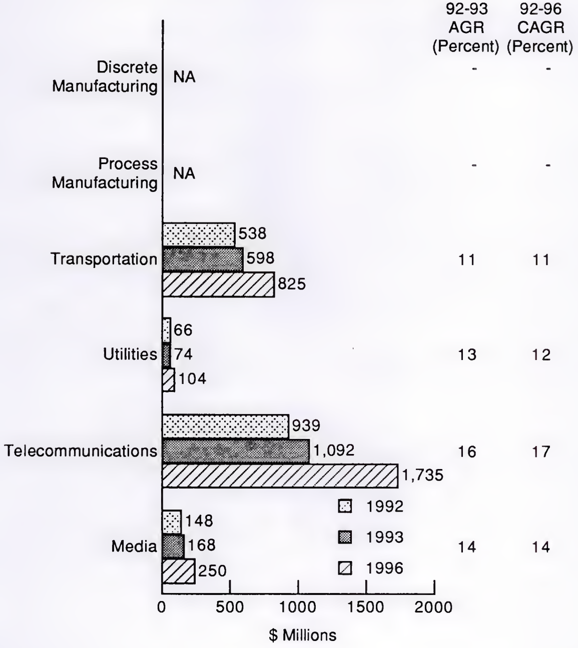
YRINE IV-8a

Market Forecast by Industry Sector—1992, 1993, 1996
General and Public Sector Trading Area



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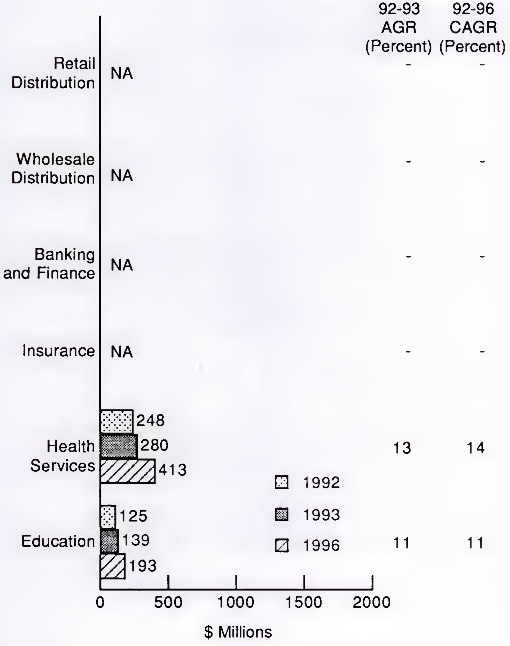
YRINE IV-8b

Market Forecast by Industry Sector—1992, 1993, 1996
General and Public Sector Trading Area



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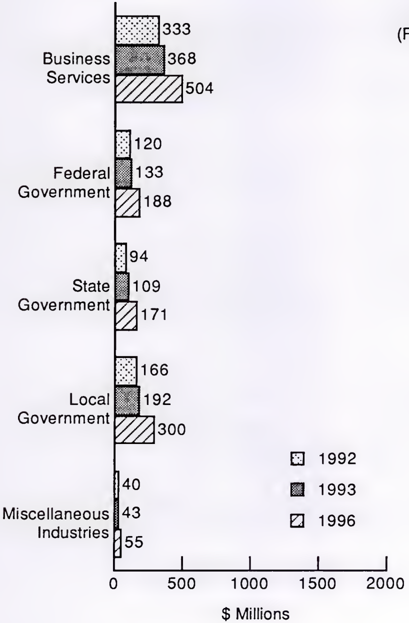
YRINE IV-8c

Market Forecast by Industry Sector—1992, 1993, 1996
General and Public Sector Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Business Services	11	11
Federal Government	11	12
State Government	16	16
Local Government	16	16
Miscellaneous Industries	8	8

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YRINE IV-9

Total Professional Services* Market Forecast by Industry Sector—General and Public Sector Trading Area

Top Industries by Market Size

Rank	Industry	1992 ($M)	1992-1993 AGR (Percent)	1993 ($M)	1996 ($M)	1992-1996 CAGR (Percent)
1	Telecommunications	213	16	246	382	16
2	Local Government	67	9	73	112	14
3	State Government	38	21	46	70	17
4	Media	36	12	40	57	12
5	Federal Government	34	11	38	52	11

* Total Professional Services = Professional Services (consulting, systems development, education and training) + Systems Integration (services components)

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
General & Public Sector

TOTAL MARKET ---
SIZE: 2,816

1992 FORECAST

YEARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
Submode Totals -->	621	38	103	131	99	44	121	109	239	63	68	59	12	81	5	92	244	57	188	35	188	127	91
DELMODE TOTALS ---->			762			274			469		131				157			393		223			406
VERTICAL INDUSTRY MKTS	621	38	103	131	99	44	121	109	239	63	68	59	12	81	5	92	244	57	188	35	188	127	91
Discrete Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Process Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	239	15	40	15	11	5	21	16	33	12	4	6	1	9	1	5	14	3	48	8	16	10	8
Utilities	9	1	2	2	1	1	2	4	7	1	0	6	2	9	1	3	4	2	2	0	4	3	2
Telecommunications	218	13	36	48	36	16	51	28	42	5	8	10	2	22	0	41	124	26	32	4	88	55	34
Media (Brdcst/Publish)	19	1	3	10	8	3	6	10	9	2	2	4	1	3	0	8	20	5	3	0	14	11	6
Retail Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wholesale Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banking and Finance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Insurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health Services	23	1	4	20	15	7	21	17	31	18	17	3	1	5	0	3	6	1	23	8	11	7	6
Education	10	1	2	6	4	2	6	12	43	3	1	1	0	2	0	1	2	1	12	3	3	4	7
Business Services	86	5	14	19	15	6	8	15	58	2	3	2	1	4	0	3	8	2	54	1	8	7	10
Federal Government	2	0	0	4	3	1	2	2	6	6	10	16	2	15	1	4	11	3	6	9	7	5	3
State Govt	4	0	1	1	1	0	1	1	2	5	8	3	1	4	0	8	20	5	1	1	13	9	5
Local & Misc Govt	8	0	1	2	1	1	2	1	3	9	15	6	1	8	0	15	35	9	2	1	22	15	9
Miscel Industries	4	0	1	6	4	2	0	3	7	0	0	0		0		1	2	0	6	0	1	1	1

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
General & Public Sector

TOTAL MARKET ---
SIZE: 3,196
92-93 GROWTH: 13.5%

1993 FORECAST

YEARS/DELIVERY MODES	PROC SERVICES			TURNKEY SYSTEMS			APPLIC S/W PROD			SYST OPS		SYSTEMS INTEGRATION				PROF SERVICES			NET SVCS		SYST SOFTWARE		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
Submode Totals -->	680	41	121	144	108	48	131	123	287	73	82	70	14	96	5	106	272	67	220	42	212	144	110
DELMODE TOTALS ---->			843			300			541		155				186			445		262			465
VERTICAL INDUSTRY MKTS	680	41	121	144	108	48	131	123	287	73	82	70	14	96	5	106	272	67	220	42	212	144	110
Discrete Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Process Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	258	16	46	16	12	5	22	18	38	15	6	8	1	11	1	6	14	3	56	10	17	11	9
Utilities	11	1	2	2	1	1	3	4	8	1	0	7	2	10	1	3	4	2	2	0	4	3	3
Telecommunications	250	15	45	54	40	18	58	34	52	6	10	13	3	26	0	49	139	32	38	4	102	64	41
Media (Brdcst/Publish)	21	1	4	11	8	4	7	11	11	2	3	5	1	4	0	9	22	6	3	1	16	12	7
Retail Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wholesale Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banking and Finance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Insurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health Services	24	1	4	21	15	7	23	19	39	21	20	4	1	5	0	3	7	2	27	10	12	8	7
Education	10	1	2	6	4	2	6	13	49	3	1	2	0	3	0	1	2	1	14	4	4	4	8
Business Services	87	5	16	21	16	7	8	17	70	2	4	2	1	5	1	4	8	2	63	1	8	8	13
Federal Government	2	0	0	4	3	1	2	3	7	7	11	19	3	17	2	4	12	3	7	9	8	6	4
State Govt	5	0	1	1	1	0	1	1	2	6	10	4	1	5	0	10	22	6	1	1	14	10	6
Local & Misc Govt	9	1	2	2	2	1	2	1	4	11	18	7	1	10	1	18	39	10	2	1	25	17	11
Miscel Industries	3	0	1	6	5	2	0	3	7	0	0	0		0		1	2	0	7	0	1	2	2

General and Public—1993 Forecast Table

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
General & Public Sector

TOTAL MARKET ---
SIZE: 4,737
92-96 GROWTH: 13.9%

1996 FORECAST

YEARS/DELIVERY MODES	-- PROC SERVICES -- Trans	Util	Other	- TURNKEY SYSTEMS - Equip	S/W	Prof	- APPLIC S/W PROD - Main	Mini	PC	- SYST OPS - Platf	Applic	-- SYSTEMS INTEGRATION --- Equip	S/W	Prof	Other	-- PROF SERVICES -- Cons	Devel	Ed&Tr	- NET SVCS - EIS	N/A	-- SYST SOFTWARE -- Main	Mini	PC
Submode Totals -->	894	52	199	189	142	63	171	177	490	105	144	115	23	160	9	168	374	105	359	72	311	211	203
DELMODE TOTALS ---->			1,145			394			839		249				307			647		431			725
VERTICAL INDUSTRY MKTS	894	52	199	189	142	63	171	177	490	105	144	115	23	160	9	168	374	105	359	72	311	211	203
Discrete Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Process Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	321	19	72	21	16	7	25	22	60	23	10	14	2	20	1	8	17	4	94	18	21	13	16
Utilities	16	1	3	3	2	1	3	5	13	1	1	10	3	14	1	4	5	3	2	0	5	4	4
Telecommunications	375	22	84	76	57	25	87	61	98	9	18	22	5	45	1	80	199	56	67	8	161	102	78
Media (Brdcst/Publish)	30	2	7	16	12	5	9	15	20	3	5	9	1	7	0	14	28	9	5	1	23	17	13
Retail Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wholesale Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Banking and Finance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Insurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health Services	27	2	6	23	17	8	26	25	81	29	39	5	1	7	0	4	8	2	41	19	15	10	17
Education	11	1	2	7	5	2	6	17	69	4	2	3	1	5	0	2	3	1	24	6	4	6	13
Business Services	89	5	20	27	20	9	8	21	113	4	7	4	2	10	1	5	9	3	101	2	10	10	23
Federal Government	2	0	1	4	3	1	2	4	17	9	14	29	4	26	2	5	16	3	8	12	10	7	7
State Govt	7	0	2	2	1	1	1	1	4	8	18	7	1	10	1	17	31	9	2	2	22	15	11
Local & Misc Govt	12	1	3	3	2	1	2	2	6	15	31	12	2	17	1	29	55	16	4	3	39	26	19
Miscel Industries	3	0	1	7	5	2	0	4	10	0	0	0	0	0		1	2	1	10	0	1	2	2

General and Public—1996 Forecast Table
YRINE IV-12

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V

Insurance and Distribution Trading Area

V

Insurance and Distribution Trading Area

YRINE V-1

Geographic and Industry Description Insurance and Distribution Trading Area

Geography

States	*Boroughs/Counties*	
New York	Manhattan	Staten Island
	Bronx	West Chester
	Brooklyn	Rockland
	Queens	Nassau
		Suffolk

Significant Industries	
Industry Sector	1992 Information Services Market Forecast ($M)
Discrete Manufacturing	-
Process Manufacturing	-
Transportation	-
Utilities	-
Telecommunications	-
Media	-
Retail Distribution	177
Wholesale Distribution	65
Banking and Finance	-
Insurance	869
Health Services	-
Education	-
Business Services	-
Federal Government	-
State Government	-
Local Government	-
Miscellaneous Industries	-
Total	1,111

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YRINE V-2

Area Demographics—Revenues
Insurance and Distribution Trading Area

Revenues ($ Millions)	Percent of Total Establishments*
<10	44
10-49	32
50-99	11
100-249	8
250-499	3
500-999	2
>1,000	2
Total	100 **

*Total establishments for trading area: 1,160

**Percentages may not add exactly to 100 due to rounding.

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YRINE V-3

Area Demographics—Employees
Insurance and Distribution Trading Area

Employees	Percent of Total Establishments*
1-99	64
100-499	28
500-999	5
1,000-4,999	3
>5,000	0
Total	100

*Total establishments for trading area: 1,160

**Percentages may not add exactly to 100 due to rounding.

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YRINE V-4a

Area Demographics—Computing Power Insurance and Distribution Trading Area

Industry Sector	% of Total Establishments	% of Total MIPS
Discrete Manufacturing	-	-
Process Manufacturing	-	-
Transportation	-	-
Utilities	-	-
Telecommunications	-	-
Media	-	-
Retail Distribution	-	-
Wholesale Distribution	49	21
Banking and Finance	24	7
Insurance	27	72
Health Services	-	-
Education	-	-
Business Services	-	-
Federal Government	-	-
State Government	-	-
Local Government	-	-
Miscellaneous Industries	-	-
Totals	100*	100*

*Percentages may not add exactly to 100 due to rounding.

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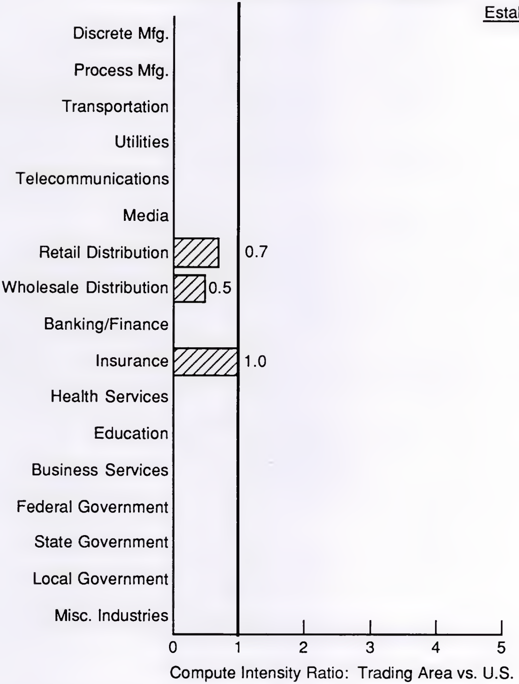
Area Demographics—Compute Intensity* Insurance and Distribution Trading Area



Industry	Establishments
Discrete Mfg.	-
Process Mfg.	-
Transportation	-
Utilities	-
Telecommunications	-
Media	-
Retail Distribution	563
Wholesale Distribution	283
Banking/Finance	-
Insurance	314
Health Services	-
Education	-
Business Services	-
Federal Government	-
State Government	-
Local Government	-
Misc. Industries	-

Total: 1,160

* Definition: Compute Intensity is a measure of the average level of computing resources for an industry sector. It is calculated as follows:

$$\frac{\text{Average \# MIPS}}{\text{Average \# Employees}}$$

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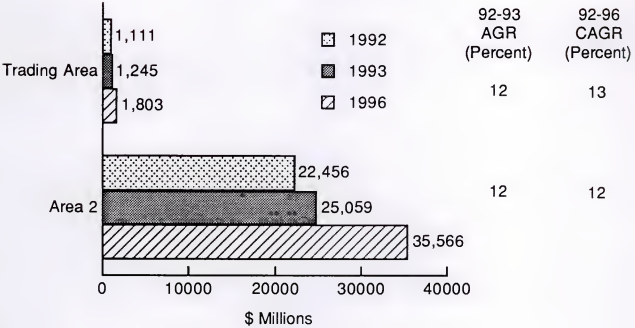
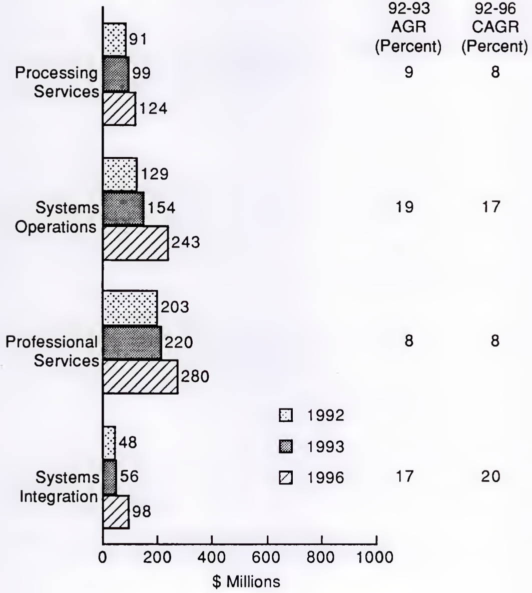
YRINE V-5

Total Market Forecast—1992, 1993, 1996
Insurance and Distribution Trading Area



YRINE V-6a

Market Forecast by Delivery Mode—1992, 1993, 1996
Insurance and Distribution Trading Area



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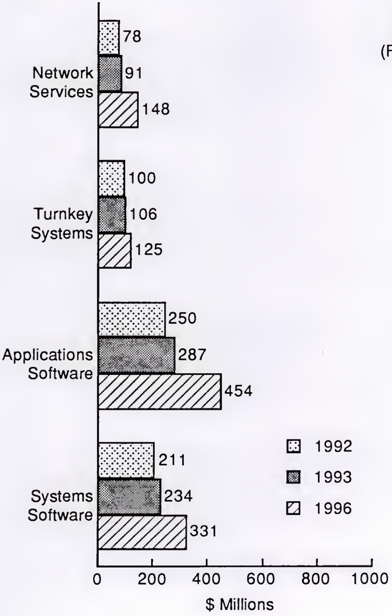
YRINE V-6b

Market Forecast by Delivery Mode—1992, 1993, 1996
Insurance and Distribution Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Network Services	17	17
Turnkey Systems	6	6
Applications Software	15	16
Systems Software	11	12

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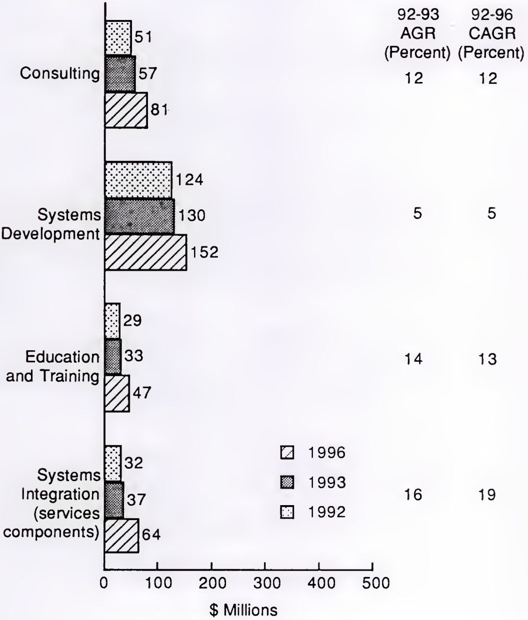
YRINE V-7

Total Professional Services Market Forecast by Submode—1992, 1993, 1996 Insurance and Distribution Trading Area



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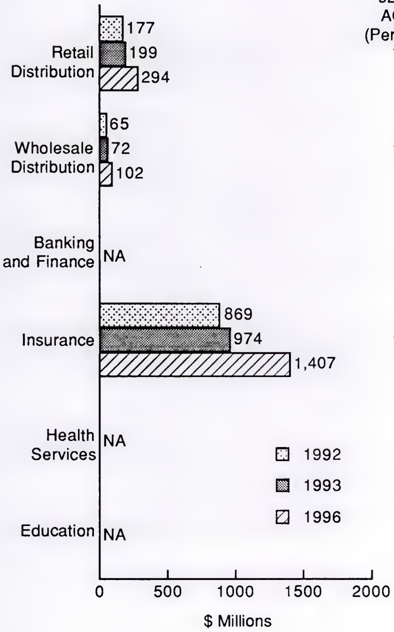
YRINE V-8

Market Forecast by Industry Sector—1992, 1993, 1996
Insurance and Distribution Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Retail Distribution	12	13
Wholesale Distribution	12	12
Banking and Finance	-	-
Insurance	12	13
Health Services	-	-
Education	-	-

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YRINE V-9

Total Professional Services* Market Forecast by Industry Sector—Insurance and Distribution Trading Area

Top Industries by Market Size

Rank	Industry	1992 ($M)	1992-1993 AGR (Percent)	1993 ($M)	1996 ($M)	1992-1996 CAGR (Percent)
1	Insurance	203	9	222	294	10
2	Retail Distribution	23	11	26	39	14
3	Wholesale Distribution	8	9	9	11	8

* Total Professional Services = Professional Services (consulting, systems development, education and training) + Systems Integration (services components)

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Insurance & Distribution

TOTAL MARKET ---
SIZE: 1,111

** 1992 FORECAST **

EARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
ubmode Totals -->	74	5	12	48	36	16	72	39	138	61	68	12	4	30	2	51	124	29	62	16	101	62	49
DELMODE TOTALS ---->			91			100			250		129				48			203		78			211
ERTICAL INDUSTRY MKTS	74	5	12	48	36	16	72	39	138	61	68	12	4	30	2	51	124	29	62	16	101	62	49
iscrete Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
rocess Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ransportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
tilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
elecommunications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
edia (Brdcst/Publish)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
etail Distribution	13	1	2	23	17	8	5	12	14	7	6	6	1	9	1	3	8	2	17	5	6	6	4
holesale Distribution	7	0	1	5	4	2	7	4	7	1	1	1	0	2	0	2	4	1	2	5	5	3	2
anking and Finance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nsurance	55	3	9	20	15	7	61	23	116	53	62	5	2	19	1	46	112	26	43	7	89	53	43
ealth Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ducation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
usiness Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ederal Government	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
tate Govt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ocal & Misc Govt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
iscel Industries	0	0	0	0	0	0	0	0	0	0	0	0		0		0	0	0	0	0	0	0	0

Insurance and Distribution—1992 Forecast Table

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Insurance & Distribution

TOTAL MARKET ---
SIZE: 1,245
92-93 GROWTH: 12.1%

1993 FORECAST

YEARS/DELIVERY MODES	-- PROC SERVICES -- Trans	Util	Other	- TURNKEY SYSTEMS - Equip	S/W	Prof	- APPLIC S/W PROD - Main	Mini	PC	- SYST OPS - Platf	Applic	-- SYSTEMS INTEGRATION --- Equip	S/W	Prof	Other	-- PROF SERVICES -- Cons	Devel	Ed&Tr	- NET SVCS - EIS	N/A	-- SYST SOFTWARE -- Main	Mini	PC
Submode Totals -->	80	5	14	51	38	17	77	42	168	70	83	14	5	35	2	57	130	33	72	19	109	66	58
DELMODE TOTALS ---->			99			106			287		154				56			220		91			234
VERTICAL INDUSTRY MKTS	80	5	14	51	38	17	77	42	168	70	83	14	5	35	2	57	130	33	72	19	109	66	58
Discrete Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Process Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Telecommunications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail Distribution	14	1	2	24	18	8	5	14	17	8	8	8	1	11	1	3	8	2	20	6	7	7	5
Wholesale Distribution	8	0	1	5	4	2	7	4	9	1	1	1	0	2	0	2	4	1	3	6	5	3	2
Banking and Finance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Insurance	59	4	10	21	16	7	65	24	142	61	75	6	3	22	1	52	118	30	49	7	97	56	51
Health Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Business Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Federal Government	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Govt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local & Misc Govt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscel Industries	0	0	0	0	0	0	0	0	0	0	0	0		0		0	0	0	0	0	0	0	0

Insurance and Distribution—1993 Forecast Table

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Insurance & Distribution

TOTAL MARKET ---
SIZE: 1,803
92-96 GROWTH: 12.9%

1996 FORECAST

YEARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
Submode Totals -->	97	6	22	60	45	20	89	50	315	96	146	26	8	61	3	81	152	47	115	33	140	85	106
DELMODE TOTALS ---->			124			125			454		243				98			280		148			331
VERTICAL INDUSTRY MKTS	97	6	22	60	45	20	89	50	315	96	146	26	8	61	3	81	152	47	115	33	140	85	106
Discrete Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Process Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Telecommunications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail Distribution	16	1	4	30	22	10	5	19	28	14	17	14	3	20	2	4	10	2	35	12	8	9	8
Wholesale Distribution	9	1	2	6	5	2	8	6	17	2	1	2	0	3	0	2	5	1	4	11	6	3	4
Banking and Finance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Insurance	71	4	16	24	18	8	75	26	271	80	128	10	5	38	1	75	137	43	76	9	126	72	94
Health Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Business Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Federal Government	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Govt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local & Misc Govt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscel Industries	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0

Insurance and Distribution—1996 Forecast Table

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VI

New Jersey Trading Area

VI

New Jersey Trading Area

YRINE VI-1

Geographic and Industry Description
New Jersey Trading Area

Geography

States	*Counties*		
New Jersey	Bergen	Middlesex	Somerset
	Essex	Monmouth	Sussex
	Hudson	Morris	Union
	Mercer	Passaic	

Significant Industries	
Industry Sector	1992 Information Services Market Forecast ($M)
Discrete Manufacturing	525
Process Manufacturing	463
Transportation	-
Utilities	39
Telecommunications	-
Media	-
Retail Distribution	-
Wholesale Distribution	154
Banking and Finance	521
Insurance	-
Health Services	160
Education	53
Business Services	253
Federal Government	179
State Government	144
Local Government	82
Miscellaneous Industries	45
Total	2,618

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YRINE VI-2

Area Demographics—Revenues
New Jersey Trading Area

Revenues ($ Millions)	Percent of Total Establishments*
<10	52
10-49	35
50-99	7
100-249	5
250-499	1
500-999	0
>1,000	0
Total	100 **

*Total establishments for trading area: 3,688

**Percentages may not add exactly to 100 due to rounding.

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YRINE VI-3

Area Demographics—Employees
New Jersey Trading Area

Employees	Percent of Total Establishments*
1-99	52
100-499	37
500-999	6
1,000-4,999	5
>5,000	0
Total	100 **

*Total establishments for trading area: 3,688

**Percentages may not add exactly to 100 due to rounding.

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YRINE VI-4a

Area Demographics—Computing Power
New Jersey Trading Area

Industry Sector	% of Total Establishments	% of Total MIPS
Discrete Manufacturing	28	23
Process Manufacturing	22	14
Transportation	-	-
Utilities	1	1
Telecommunications	-	-
Media	-	-
Retail Distribution	-	-
Wholesale Distribution	11	4
Banking and Finance	4	7
Insurance	-	-
Health Services	4	2
Education	3	12
Business Services	20	30
Federal Government	1	4
State Government	2	2
Local Government	3	1
Miscellaneous Industries	2	1
Totals	100*	100*

*Percentages may not add exactly to 100 due to rounding.

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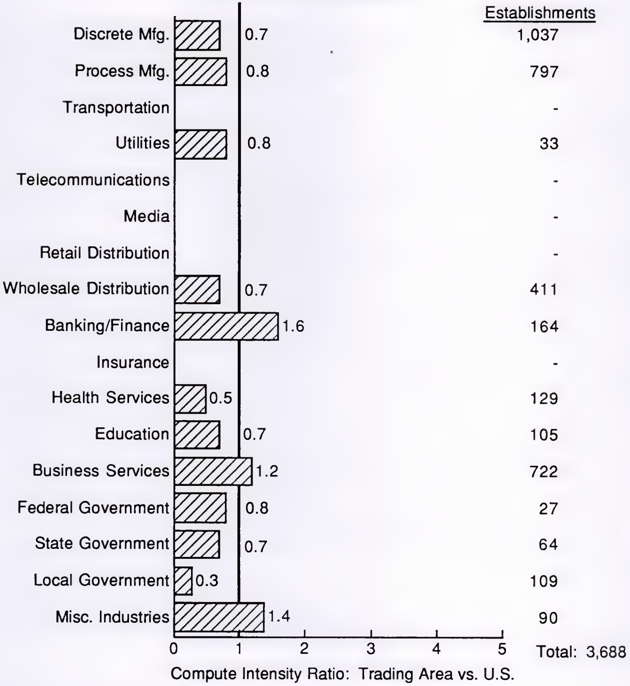
YRINE VI-4b

Area Demographics—Compute Intensity*
New Jersey Trading Area



* Definition: Compute Intensity is a measure of the average level of computing resources for an industry sector. It is calculated as follows:

$$\frac{\text{Average \# MIPS}}{\text{Average \# Employees}}$$

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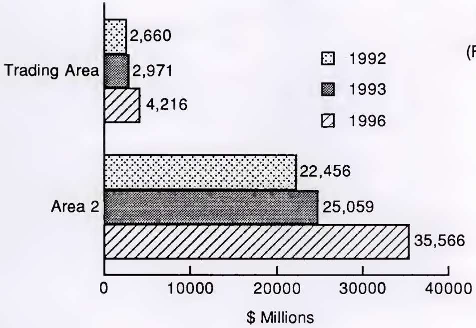
Total Market Forecast—1992, 1993, 1996
New Jersey Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Trading Area	12	12
Area 2	12	12

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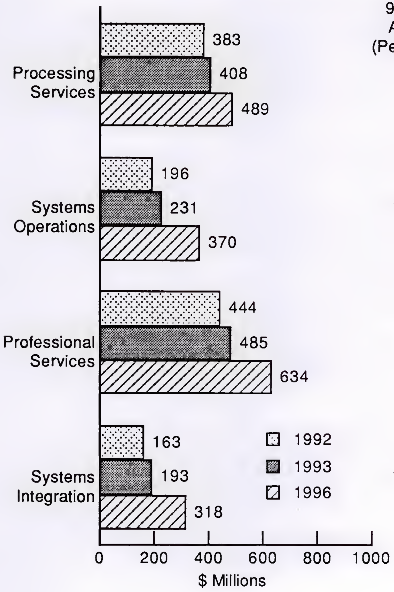
YRINE VI-6a

Market Forecast by Delivery Mode—1992, 1993, 1996
New Jersey Trading Area



Delivery Mode	92-93 AGR (Percent)	92-96 CAGR (Percent)
Processing Services	7	6
Systems Operations	18	17
Professional Services	9	9
Systems Integration	18	18

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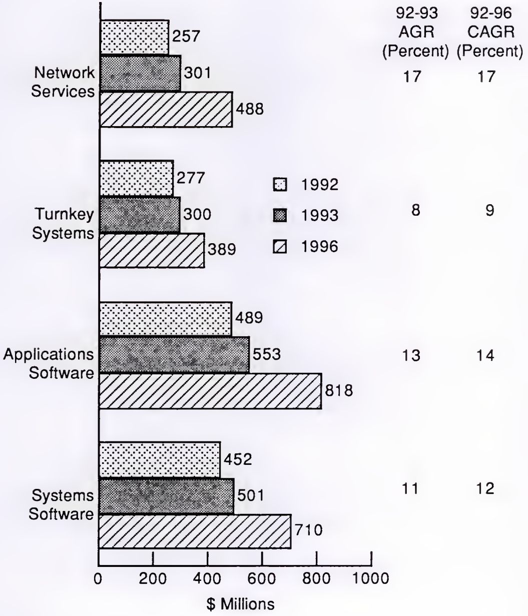
YRINE VI-6b

Market Forecast by Delivery Mode—1992, 1993, 1996
New Jersey Trading Area



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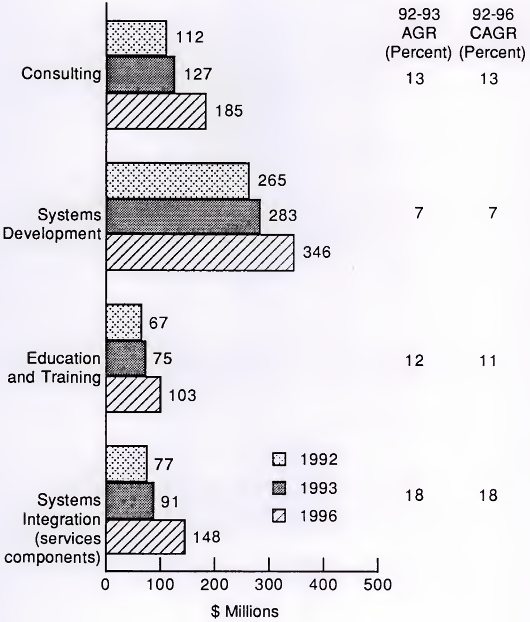
YRINE VI-7

Total Professional Services Market Forecast by Submode—1992, 1993, 1996 New Jersey Trading Area



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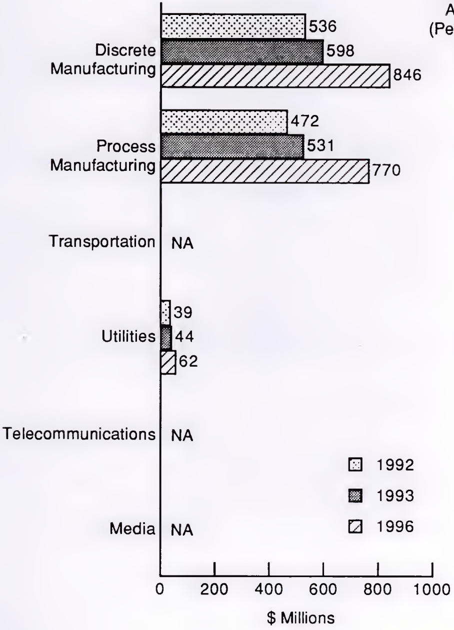
YRINE VI-8a

Market Forecast by Industry Sector—1992, 1993, 1996
New Jersey Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Discrete Manufacturing	12	12
Process Manufacturing	13	13
Transportation	-	-
Utilities	13	12
Telecommunications	-	-
Media	-	-

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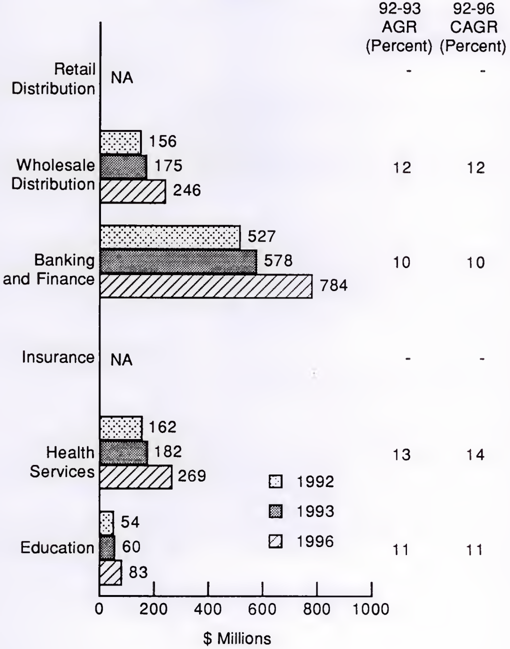
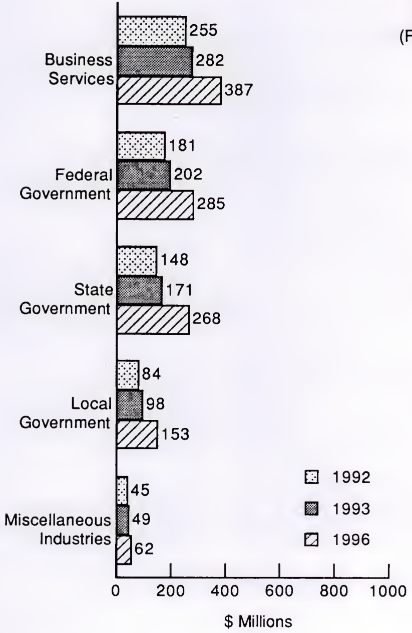
YRINE VI-8b

Market Forecast by Industry Sector—1992, 1993, 1996
New Jersey Trading Area



YRINE VI-8c

Market Forecast by Industry Sector—1992, 1993, 1996
New Jersey Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Business Services	11	11
Federal Government	11	12
State Government	16	16
Local Government	16	16
Miscellaneous Industries	8	8

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YRINE VI-9

Total Professional Services* Market Forecast by Industry Sector—New Jersey Trading Area

Top Industries by Market Size

Rank	Industry	1992 ($M)	1992-1993 AGR (Percent)	1993 ($M)	1996 ($M)	1992-1996 CAGR (Percent)
1	Discrete Manufacturing	138	10	151	200	10
2	Process Manufacturing	114	10	125	166	10
3	Banking and Finance	64	7	69	86	8
4	State Government	59	15	69	105	15
5	Federal Government	52	11	57	79	11
6	Local Government	34	15	39	60	15

* Total Professional Services = Professional Services (consulting, systems development, education and training) + Systems Integration (services components)

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
New Jersey

TOTAL MARKET --- SIZE: 2,660

1992 FORECAST

	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
YEARS/DELIVERY MODES	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
Submode Totals -->	312	19	52	133	100	44	120	146	223	81	115	75	12	71	6	112	265	67	211	46	206	150	96
DELMODE TOTALS ---->			383			277			489		196				163			444		257			452
VERTICAL INDUSTRY MKTS	312	19	52	133	100	44	120	146	223	81	115	75	12	71	6	112	265	67	211	46	206	150	96
Discrete Manufacturing	28	2	5	44	33	15	17	49	37	8	10	23	3	10	1	32	75	19	3	1	52	45	24
Process Manufacturing	43	3	7	16	12	5	14	18	28	12	15	4	1	4	0	28	65	16	78	7	45	32	20
Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilities	6	0	1	1	1	0	1	2	4	0	0	4	1	5	0	2	2	1	1	0	2	2	1
Telecommunications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wholesale Distribution	17	1	3	12	9	4	17	9	18	2	2	3	1	4	0	4	10	2	6	11	12	6	5
Banking and Finance	115	7	19	15	11	5	43	31	32	21	40	4	1	6	1	14	35	8	43	3	37	23	13
Insurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health Services	15	1	2	13	10	4	14	11	20	12	11	2	1	3	0	2	4	1	15	5	7	5	4
Education	4	0	1	2	2	1	2	5	19	1	0	1	0	1	0	0	1	0	5	1	1	2	3
Business Services	66	4	11	15	11	5	6	12	45	1	2	1	1	3	0	3	6	1	41	1	6	6	8
Federal Government	3	0	1	5	4	2	2	3	9	10	15	25	4	22	2	6	17	5	10	13	11	8	5
State Govt	7	0	1	2	1	1	2	1	3	8	13	5	1	7	0	13	31	8	2	1	20	13	8
Local & Misc Govt	4	0	1	1	1	0	1	1	2	5	8	3	0	4	0	8	18	4	1	1	11	8	4
Miscel Industries	4	0	1	7	5	2	1	4	8	0	0	0		0		1	2	0	6	0	1	2	2

New Jersey—1992 Forecast Table
YRINE VI-10

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
New Jersey

TOTAL MARKET ---
SIZE: 2,971
92-93 GROWTH: 11.7%

** 1993 FORECAST **

YEARS/DELIVERY MODES	-- PROC SERVICES -- Trans	Util	Other	- TURNKEY SYSTEMS - Equip	S/W	Prof	- APPLIC S/W PROD - Main	Mini	PC	- SYST OPS - Platf	Applic
Submode Totals -->	329	20	59	144	108	48	127	160	265	92	138
DELMODE TOTALS ---->			408			300			553		231
VERTICAL INDUSTRY MKTS	329	20	59	144	108	48	127	160	265	92	138
Discrete Manufacturing	29	2	5	48	36	16	18	54	46	10	12
Process Manufacturing	45	3	8	18	14	6	14	20	34	14	18
Transportation	0	0	0	0	0	0	0	0	0	0	0
Utilities	6	0	1	1	1	0	2	2	5	0	0
Telecommunications	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	0	0	0	0	0	0	0	0	0	0	0
Retail Distribution	0	0	0	0	0	0	0	0	0	0	0
Wholesale Distribution	18	1	3	13	9	4	18	10	22	3	2
Banking and Finance	124	8	22	16	12	5	46	34	34	23	48
Insurance	0	0	0	0	0	0	0	0	0	0	0
Health Services	16	1	3	13	10	4	15	12	25	14	13
Education	4	0	1	3	2	1	2	6	21	1	1
Business Services	67	4	12	16	12	5	6	13	54	2	3
Federal Government	3	0	1	6	4	2	3	4	11	11	16
State Govt	8	0	1	2	1	1	2	1	3	9	16
Local & Misc Govt	4	0	1	1	1	0	1	1	2	5	9
Miscel Industries	4	0	1	7	5	2	1	4	8	0	0

YEARS/DELIVERY MODES	-- SYSTEMS INTEGRATION --- Equip	S/W	Prof	Other	-- PROF SERVICES -- Cons	Devel	Ed&Tr	- NET SVCS - EIS	N/A	-- SYST SOFTWARE -- Main	Mini	PC
Submode Totals -->	89	14	84	7	127	283	75	246	55	225	163	113
DELMODE TOTALS ---->				193			485		301			501
VERTICAL INDUSTRY MKTS	89	14	84	7	127	283	75	246	55	225	163	113
Discrete Manufacturing	28	3	13	1	37	79	22	3	2	57	48	28
Process Manufacturing	5	1	5	0	32	69	19	91	10	49	35	23
Transportation	0	0	0	0	0	0	0	0	0	0	0	0
Utilities	4	1	6	0	2	2	1	1	0	3	2	2
Telecommunications	0	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	0	0	0	0	0	0	0	0	0	0	0	0
Retail Distribution	0	0	0	0	0	0	0	0	0	0	0	0
Wholesale Distribution	3	1	5	0	4	10	2	7	14	13	7	6
Banking and Finance	5	1	7	1	16	36	9	51	3	39	24	14
Insurance	0	0	0	0	0	0	0	0	0	0	0	0
Health Services	3	1	3	0	2	4	1	17	7	8	5	5
Education	1	0	1	0	0	1	0	6	2	2	2	3
Business Services	2	1	4	0	3	6	2	48	1	6	6	10
Federal Government	29	4	25	2	6	18	5	10	14	12	8	6
State Govt	6	1	9	0	16	35	9	2	1	22	15	9
Local & Misc Govt	4	1	5	0	9	20	5	1	1	13	9	5
Miscel Industries	0		0		1	2	0	7	0	1	2	2

New Jersey—1993 Forecast Table

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
New Jersey

TOTAL MARKET ---
SIZE: 4,216
92-96 GROWTH: 12.2%

1996 FORECAST

YEARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
Submode Totals -->	382	22	85	187	140	62	152	211	455	128	241	146	23	137	11	185	346	103	387	101	298	217	195
DELMODE TOTALS ---->			489			389			818		370				318			634		488			710
VERTICAL INDUSTRY MKTS	382	22	85	187	140	62	152	211	455	128	241	146	23	137	11	185	346	103	387	101	298	217	195
Discrete Manufacturing	33	2	7	66	50	22	21	71	87	14	23	49	6	22	2	54	91	30	6	4	75	63	47
Process Manufacturing	51	3	11	25	19	8	16	27	61	19	34	8	1	9	1	47	83	27	143	24	66	47	39
Transportation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilities	9	1	2	2	1	1	2	3	8	1	0	6	2	8	1	2	3	2	1	0	3	2	3
Telecommunications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wholesale Distribution	23	1	5	15	11	5	19	13	40	4	3	5	1	8	0	5	12	3	11	27	15	8	11
Banking and Finance	151	9	34	20	15	7	60	44	45	32	84	9	2	13	1	20	40	11	81	5	50	30	21
Insurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health Services	18	1	4	15	11	5	17	16	53	19	25	3	1	5	0	3	5	1	27	13	10	6	11
Education	5	0	1	3	2	1	3	7	30	2	1	1	0	2	0	1	1	0	10	3	2	2	6
Business Services	69	4	15	21	15	7	6	16	87	3	5	3	2	8	1	4	7	2	78	1	7	8	18
Federal Government	4	0	1	7	5	2	3	6	25	14	21	44	6	39	4	7	25	4	13	19	15	11	11
State Govt	11	1	2	3	2	1	2	2	6	13	28	11	2	15	1	26	49	14	3	3	35	23	17
Local & Misc Govt	6	0	1	2	1	1	1	1	3	7	16	6	1	9	0	15	28	8	2	2	20	13	10
Miscel Industries	4	0	1	8	6	3	0	4	12	0	1	0	0	0		1	2	1	12	0	2	2	3

New Jersey—1996 Forecast Table

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VII

Long Island Trading Area

VII

Long Island Trading Area

YRINE VII-1

Geographic and Industry Description
Long Island Trading Area

Geography

States	*Boroughs/Counties*	
New York	Kings	Richmond
	Nassau	Suffolk
	Queens	

Significant Industries	
Industry Sector	1992 Information Services Market Forecast ($M)
Discrete Manufacturing	162
Process Manufacturing	22
Transportation	28
Utilities	-
Telecommunications	-
Media	19
Retail Distribution	28
Wholesale Distribution	72
Banking and Finance	240
Insurance	-
Health Services	153
Education	16
Business Services	89
Federal Government	46
State Government	8
Local Government	46
Miscellaneous Industries	7
Total	935*

* Industry sector forecast numbers may not add exactly to trading area total due to rounding

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YRINE VII-2

Area Demographics—Revenues
Long Island Trading Area

Revenues ($ Millions)	Percent of Total Establishments*
<10	59
10-49	28
50-99	7
100-249	5
250-499	1
500-999	1
>1,000	0
Total	100 **

*Total establishments for trading area: 1,379

**Percentages may not add exactly to 100 due to rounding.

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YRINE VII-3

Area Demographics—Employees
Long Island Trading Area

Employees	Percent of Total Establishments*
1-99	59
100-499	28
500-999	6
1,000-4,999	7
>5,000	1
Total	100 **

*Total establishments for trading area: 1,379

**Percentages may not add exactly to 100 due to rounding.

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YRINE VII-4a

Area Demographics—Computing Power
Long Island Trading Area

Industry Sector	% of Total Establishments	% of Total MIPS
Discrete Manufacturing	17	26
Process Manufacturing	6	1
Transportation	4	-
Utilities	-	-
Telecommunications	-	-
Media	1	2
Retail Distribution	9	2
Wholesale Distribution	11	14
Banking and Finance	6	7
Insurance	-	-
Health Services	9	4
Education	3	8
Business Services	28	23
Federal Government	1	10
State Government	-	1
Local Government	3	2
Miscellaneous Industries	3	-
Totals	100*	100*

*Percentages may not add exactly to 100 due to rounding.

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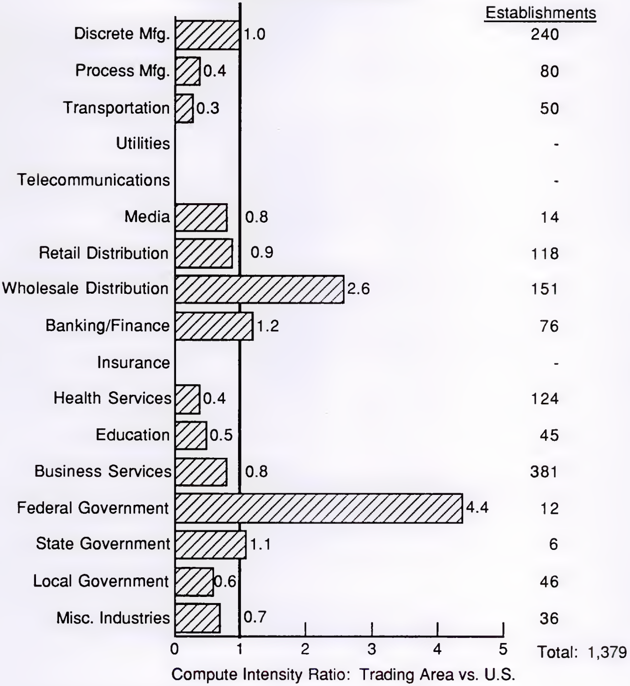
YRINE VII-4b

Area Demographics—Compute Intensity*
Long Island Trading Area



* Definition: Compute Intensity is a measure of the average level of computing resources for an industry sector. It is calculated as follows:

$$\frac{\text{Average \# MIPS}}{\text{Average \# Employees}}$$

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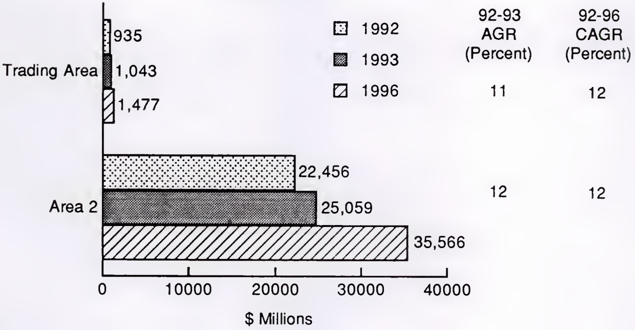
YRINE VII-5

Total Market Forecast—1992, 1993, 1996
Long Island Trading Area



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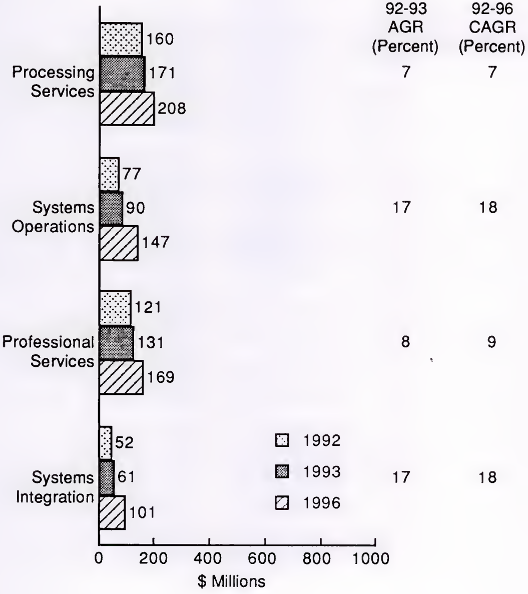
YRINE VII-6a

Market Forecast by Delivery Mode—1992, 1993, 1996
Long Island Trading Area



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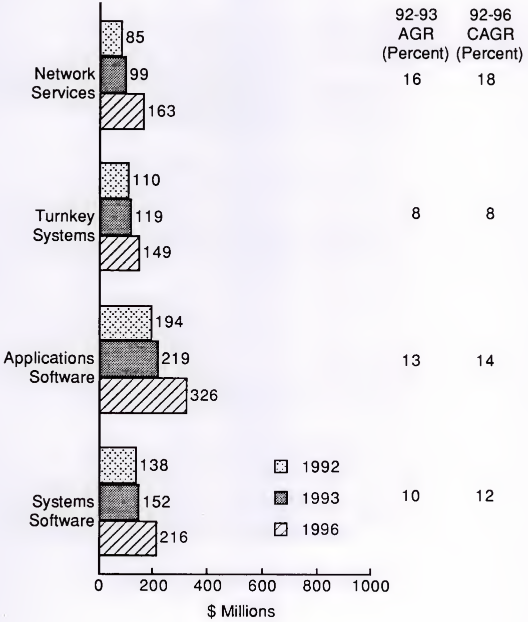
YRINE VII-6b

Market Forecast by Delivery Mode—1992, 1993, 1996
Long Island Trading Area



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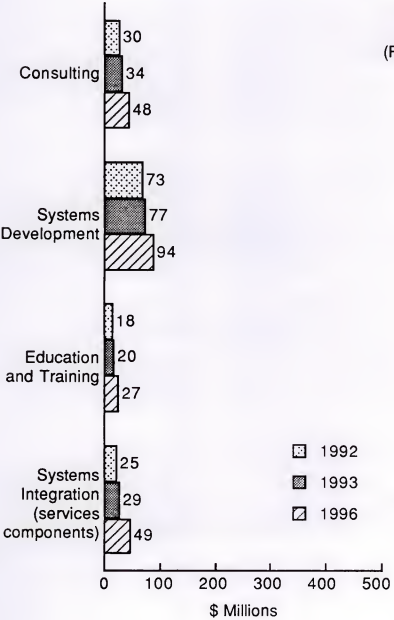
YRINE VII-7

Total Professional Services Market Forecast by Submode—1992, 1993, 1996 Long Island Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Consulting	13	12
Systems Development	5	7
Education and Training	11	11
Systems Integration (services components)	16	18

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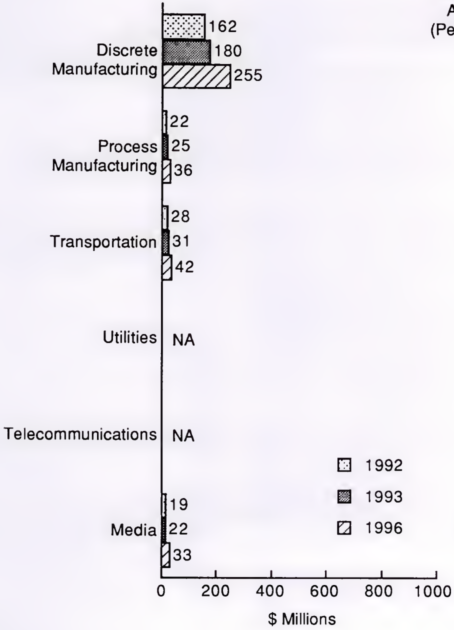
YRINE VII-8a

Market Forecast by Industry Sector—1992, 1993, 1996
Long Island Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Discrete Manufacturing	12	12
Process Manufacturing	13	13
Transportation	11	11
Utilities	-	-
Telecommunications	-	-
Media	14	14

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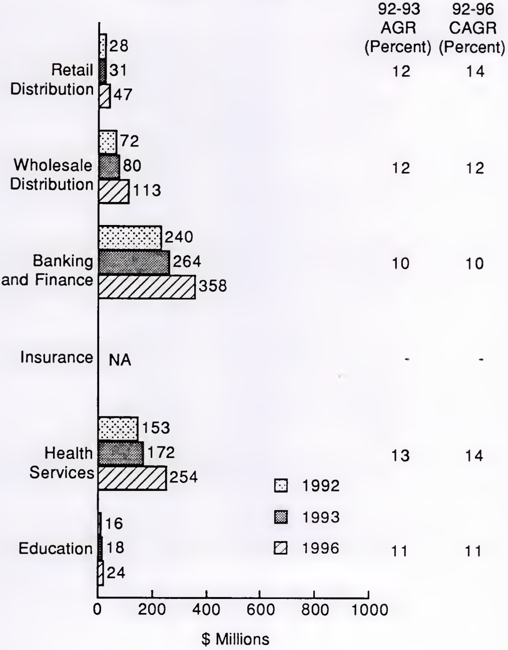
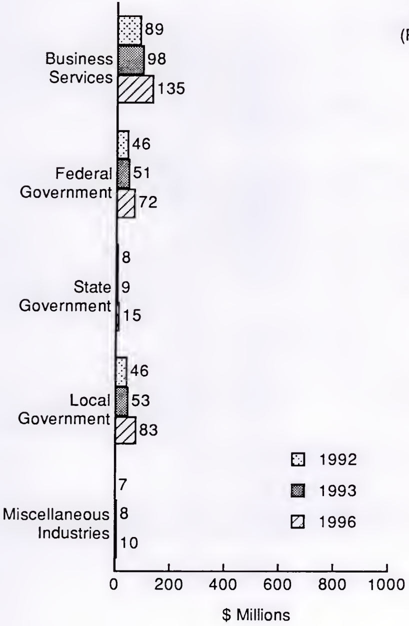
YRINE VII-8b

Market Forecast by Industry Sector—1992, 1993, 1996
Long Island Trading Area



YRINE VII-8c

Market Forecast by Industry Sector—1992, 1993, 1996
Long Island Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Business Services	11	11
Federal Government	11	12
State Government	16	16
Local Government	16	16
Miscellaneous Industries	8	8

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YRINE VII-9

Total Professional Services* Market Forecast by Industry Sector—Long Island Trading Area

Top Industries by Market Size

Rank	Industry	1992 ($M)	1992-1993 AGR (Percent)	1993 ($M)	1996 ($M)	1992-1996 CAGR (Percent)
1	Discrete Manufacturing	42	10	46	60	10
2	Banking and Finance	29	7	31	39	8
3	Local Government	18	15	21	33	15
4	Federal Government	13	11	14	20	11
5	Wholesale Distribution	9	9	10	13	8

* Total Professional Services = Professional Services (consulting, systems development, education and training) + Systems Integration (services components)

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Long Island

TOTAL MARKET --- SIZE: 935

** 1992 FORECAST **

YEARS/DELIVERY MODES	-- PROC SERVICES -- Trans	Util	Other	- TURNKEY SYSTEMS - Equip	S/W	Prof	- APPLIC S/W PROD - Main	Mini	PC	- SYST OPS - Platf	Applic	-- SYSTEMS INTEGRATION --- Equip	S/W	Prof	Other	-- PROF SERVICES -- Cons	Devel	Ed&Tr	- NET SVCS - EIS	N/A	-- SYST SOFTWARE -- Main	Mini	PC
Submode Totals -->	130	8	22	53	40	18	53	56	85	33	44	23	4	23	2	30	73	18	67	18	63	45	30
DELMODE TOTALS ---->			160			110			194		77				52			121		85			138
VERTICAL INDUSTRY MKTS	130	8	22	53	40	18	53	56	85	33	44	23	4	23	2	30	73	18	67	18	63	45	30
Discrete Manufacturing	8	1	1	13	10	4	5	15	11	3	3	7	1	3	0	10	23	6	1	0	16	13	7
Process Manufacturing	2	0	0	1	1	0	1	1	1	1	1	0	0	0	0	1	3	1	4	0	2	2	1
Transportation	12	1	2	1	1	0	1	1	2	1	0	0	0	0	0	0	1	0	2	0	1	1	0
Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Telecommunications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	2	0	0	1	1	0	1	1	1	0	0	1	0	0	0	1	3	1	0	0	2	1	1
Retail Distribution	2	0	0	4	3	1	1	2	2	1	1	1	0	1	0	1	1	0	3	1	1	1	1
Wholesale Distribution	8	0	1	5	4	2	8	4	8	1	1	1	0	2	0	2	4	1	3	5	5	3	2
Banking and Finance	53	3	9	7	5	2	20	14	15	9	18	2	0	3	0	7	16	4	20	1	17	10	6
Insurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health Services	14	1	2	12	9	4	13	11	19	11	10	2	1	3	0	2	4	1	14	5	7	4	4
Education	1	0	0	1	1	0	1	2	5	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Business Services	23	1	4	5	4	2	2	4	15	0	1	0	0	1	0	1	2	0	14	0	2	2	3
Federal Government	1	0	0	1	1	0	1	1	2	2	4	6	1	6	1	1	4	1	2	3	3	2	1
State Govt	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	1	1	0
Local & Misc Govt	2	0	0	1	0	0	0	0	1	3	4	2	0	2	0	4	10	2	1	0	6	4	2
Miscel Industries	1	0	0	1	1	0	0	1	1	0	0	0		0		0	0	0	1	0	0	0	0

Long Island—1992 Forecast Table

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Long Island

TOTAL MARKET ---
SIZE: 1,043
92-93 GROWTH: 11.5%

** 1993 FORECAST **

YEARS/DELIVERY MODES	-- PROC SERVICES -- Trans	Util	Other	- TURNKEY SYSTEMS - Equip	S/W	Prof	- APPLIC S/W PROD - Main	Mini	PC	- SYST OPS - Platf	Applic	-- SYSTEMS INTEGRATION --- Equip	S/W	Prof	Other	-- PROF SERVICES -- Cons	Devel	Ed&Tr	- NET SVCS - EIS	N/A	-- SYST SOFTWARE -- Main	Mini	PC
Submode Totals -->	138	8	25	57	43	19	56	62	101	38	53	27	4	27	2	34	77	20	78	22	69	49	35
DELMODE TOTALS ---->			171			119			219		90				61			131		99			152
VERTICAL INDUSTRY MKTS	138	8	25	57	43	19	56	62	101	38	53	27	4	27	2	34	77	20	78	22	69	49	35
Discrete Manufacturing	9	1	2	15	11	5	6	16	14	3	4	9	1	4	0	11	24	7	1	1	17	15	8
Process Manufacturing	2	0	0	1	1	0	1	1	2	1	1	0	0	0	0	1	3	1	4	0	2	2	1
Transportation	13	1	2	1	1	0	1	1	2	1	0	0	0	1	0	0	1	0	3	1	1	1	0
Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Telecommunications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	3	0	1	1	1	0	1	1	1	0	0	1	0	0	0	1	3	1	0	0	2	2	1
Retail Distribution	2	0	0	4	3	1	1	2	3	1	1	1	0	2	0	1	1	0	3	1	1	1	1
Wholesale Distribution	8	1	2	6	4	2	8	5	10	1	1	1	0	2	0	2	5	1	3	6	6	3	3
Banking and Finance	56	3	10	7	5	2	21	15	16	11	22	2	0	3	0	7	17	4	23	2	18	11	7
Insurance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health Services	15	1	3	13	10	4	14	12	24	13	13	2	1	3	0	2	4	1	16	6	8	5	5
Education	1	0	0	1	1	0	1	2	6	0	0	0	0	0	0	0	0	0	2	0	0	1	1
Business Services	23	1	4	6	4	2	2	4	19	1	1	1	0	1	0	1	2	1	17	0	2	2	3
Federal Government	1	0	0	1	1	0	1	1	3	3	4	7	1	6	1	2	5	1	3	4	3	2	2
State Govt	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	2	0	0	0	1	1	1
Local & Misc Govt	2	0	0	1	0	0	1	0	1	3	5	2	0	3	0	5	11	3	1	0	7	5	3
Miscel Industries	1	0	0	1	1	0	0	1	1	0	0	0		0		0	0	0	1	0	0	0	0

Long Island—1993 Forecast Table

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Long Island

TOTAL MARKET ---
SIZE: 1,477
92-96 GROWTH: 12.1

1996 FORECAST

YEARS/DELIVERY MODES	PROC SERVICES Trans	PROC SERVICES Util	PROC SERVICES Other	TURNKEY SYSTEMS Equip	TURNKEY SYSTEMS S/W	TURNKEY SYSTEMS Prof	APPLIC S/W PROD Main	APPLIC S/W PROD Mini	APPLIC S/W PROD PC	SYST OPS Platf	SYST OPS Applic
Submode Totals -->	162	9	36	72	54	24	68	81	177	53	94
DELMODE TOTALS ---->			208			149			326		147
VERTICAL INDUSTRY MKTS	162	9	36	72	54	24	68	81	177	53	94
Discrete Manufacturing	10	1	2	20	15	7	6	21	26	4	7
Process Manufacturing	2	0	1	1	1	0	1	1	3	1	2
Transportation	16	1	4	1	1	0	1	1	3	1	1
Utilities	0	0	0	0	0	0	0	0	0	0	0
Telecommunications	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	4	0	1	2	2	1	1	2	3	0	1
Retail Distribution	3	0	1	5	4	2	1	3	4	2	3
Wholesale Distribution	10	1	2	7	5	2	9	6	18	2	2
Banking and Finance	69	4	15	9	7	3	27	20	20	15	38
Insurance	0	0	0	0	0	0	0	0	0	0	0
Health Services	17	1	4	14	11	5	16	15	50	18	24
Education	1	0	0	1	1	0	1	2	9	1	0
Business Services	24	1	5	7	5	2	2	6	30	1	2
Federal Government	1	0	0	2	1	1	1	1	6	3	5
State Govt	1	0	0	0	0	0	0	0	0	1	2
Local & Misc Govt	3	0	1	1	1	0	1	0	2	4	9
Miscel Industries	1	0	0	1	1	0	0	1	2	0	0

YEARS/DELIVERY MODES	SYSTEMS INTEGRATION Equip	SYSTEMS INTEGRATION S/W	SYSTEMS INTEGRATION Prof	SYSTEMS INTEGRATION Other	PROF SERVICES Cons	PROF SERVICES Devel	PROF SERVICES Ed&Tr	NET SVCS EIS	NET SVCS N/A	SYST SOFTWARE Main	SYST SOFTWARE Mini	SYST SOFTWARE PC
Submode Totals -->	46	7	45	4	48	94	27	123	39	90	64	62
DELMODE TOTALS ---->				101			169		163			216
VERTICAL INDUSTRY MKTS	46	7	45	4	48	94	27	123	39	90	64	62
Discrete Manufacturing	15	2	7	1	16	27	9	2	1	22	19	14
Process Manufacturing	0	0	0	0	2	4	1	7	1	3	2	2
Transportation	1	0	1	0	0	1	0	5	1	1	1	1
Utilities	0	0	0	0	0	0	0	0	0	0	0	0
Telecommunications	0	0	0	0	0	0	0	0	0	0	0	0
Media (Brdcst/Publish)	1	0	1	0	2	4	1	1	0	3	2	2
Retail Distribution	2	0	3	0	1	2	0	6	2	1	1	1
Wholesale Distribution	2	0	3	0	2	5	1	5	13	7	4	5
Banking and Finance	4	1	6	1	9	18	5	37	2	23	14	10
Insurance	0	0	0	0	0	0	0	0	0	0	0	0
Health Services	3	1	4	0	2	5	1	25	12	9	6	10
Education	0	0	1	0	0	0	0	3	1	1	1	2
Business Services	1	1	3	0	1	3	1	27	1	3	3	6
Federal Government	11	2	10	1	2	6	1	3	5	4	3	3
State Govt	1	0	1	0	1	3	1	0	0	2	1	1
Local & Misc Govt	3	1	5	0	8	15	4	1	1	11	7	5
Miscel Industries	0	0	0		0	0	0	2	0	0	0	0

Long Island—1996 Forecast Table
YRINE VII-12

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VIII

Northern New England Trading Area

VIII

Northern New England Trading Area

Geographic Description
Northern New England Trading Area

States	Counties	
Connecticut	Windham	
Massachusetts	Barnstable Berkshire Bristol Dukes Essex Franklin Hampden	Hampshire Middlesex Nantucket Norfolk Plymouth Suffolk Worcester
Maine	Androscoggin Aroostook Cumberland Franklin Hancock Kennebec Knox Lincoln	Oxford Penobscot Pisquatis Sagahoc Somerset Waldo Washington York
New Hampshire	Belknap Carroll Cheshire Coos Grafton	Hillsborough Merrimack Rockingham Strafford Sullivan
New York	Clinton	Essex
Rhode Island	Bristol Kent Newport	Providence Washington
Vermont	Addison Bennington Caledonia Chittenden Essex Franklin Grand Isle	Lamoille Orange Orleans Rutland Washington Windham Windsor

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YRINE VIII-1b

Geographic and Industry Description
Northern New England Trading Area

Significant Industries	
Industry Sector	1992 Information Services Market Forecast ($M)
Discrete Manufacturing	1,371
Process Manufacturing	275
Transportation	122
Utilities	82
Telecommunications	48
Media	55
Retail Distribution	167
Wholesale Distribution	179
Banking and Finance	1,078
Insurance	505
Health Services	391
Education	201
Business Services	461
Federal Government	308
State Government	203
Local Government	94
Miscellaneous Industries	45
Total	5,585

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YRINE VIII-2

Area Demographics—Revenues
Northern New England Trading Area

Revenues ($ Millions)	Percent of Total Establishments*
<10	56
10-49	31
50-99	6
100-249	4
250-499	1
500-999	1
>1,000	1
Total	100 **

*Total establishments for trading area: 6,616

**Percentages may not add exactly to 100 due to rounding.

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YRINE VIII-3

Area Demographics—Employees
Northern New England Trading Area

Employees	Percent of Total Establishments*
1-99	53
100-499	36
500-999	6
1,000-4,999	5
>5,000	0
Total	100 **

*Total establishments for trading area: 6,616

**Percentages may not add exactly to 100 due to rounding.

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YRINE VIII-4a

Area Demographics—Computing Power
Northern New England Trading Area

Industry Sector	% of Total Establishments	% of Total MIPS
Discrete Manufacturing	18	34
Process Manufacturing	11	2
Transportation	3	-
Utilities	1	1
Telecommunications	-	-
Media	2	1
Retail Distribution	7	2
Wholesale Distribution	7	3
Banking and Finance	5	3
Insurance	3	3
Health Services	5	2
Education	5	2
Business Services	20	26
Federal Government	3	2
State Government	3	1
Local Government	4	-
Miscellaneous Industries	3	-
Totals	100*	100*

*Percentages may not add exactly to 100 due to rounding.

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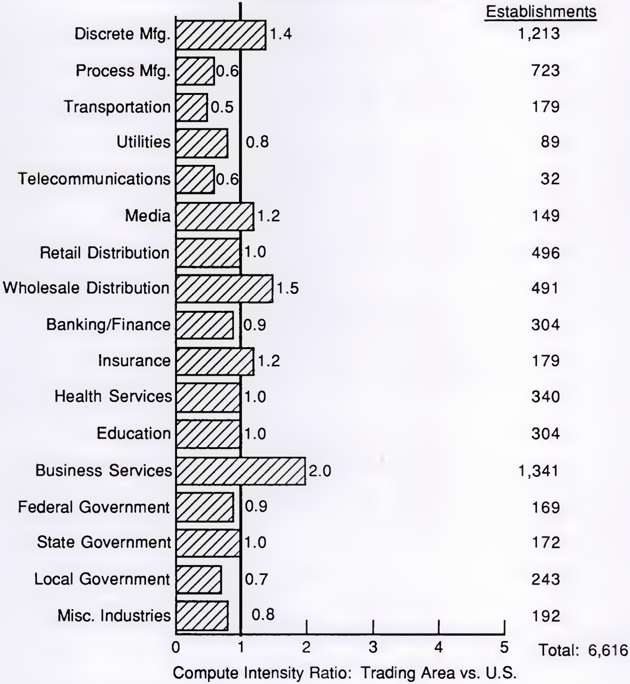
YRINE VIII-4b

Area Demographics—Compute Intensity*
Northern New England Trading Area



* Definition: Compute Intensity is a measure of the average level of computing resources for an industry sector. It is calculated as follows:

$$\frac{\text{Average \# MIPS}}{\text{Average \# Employees}}$$

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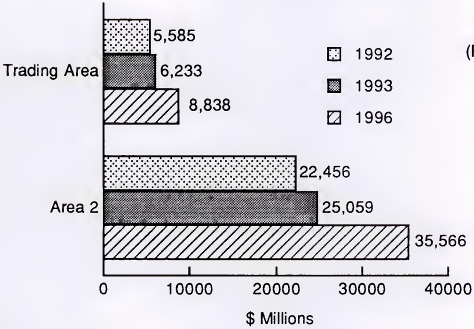
YRINE VIII-5

Total Market Forecast—1992, 1993, 1996
Northern New England Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Trading Area	12	12
Area 2	12	12

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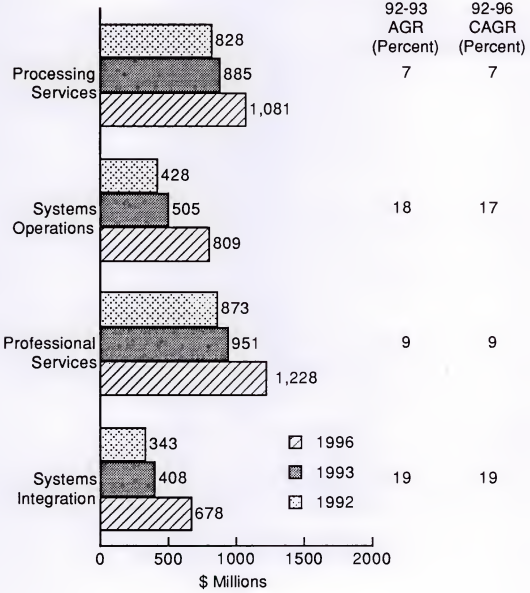
YRINE VIII-6a

Market Forecast by Delivery Mode—1992, 1993, 1996
Northern New England Trading Area



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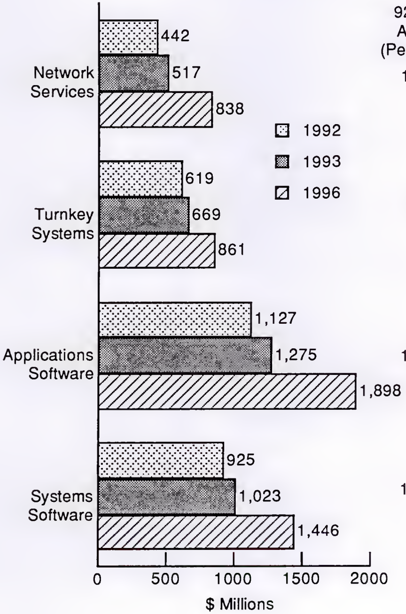
YRINE VIII-6b

Market Forecast by Delivery Mode—1992, 1993, 1996
Northern New England Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Network Services	17	17
Turnkey Systems	8	9
Applications Software	13	14
Systems Software	11	12

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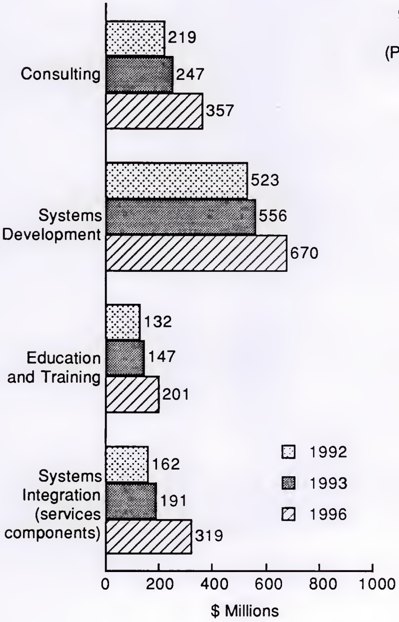
YRINE VIII-7

Total Professional Services Market Forecast by Submode—1992, 1993, 1996 Northern New England Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Consulting	13	13
Systems Development	6	6
Education and Training	11	11
Systems Integration (services components)	18	18

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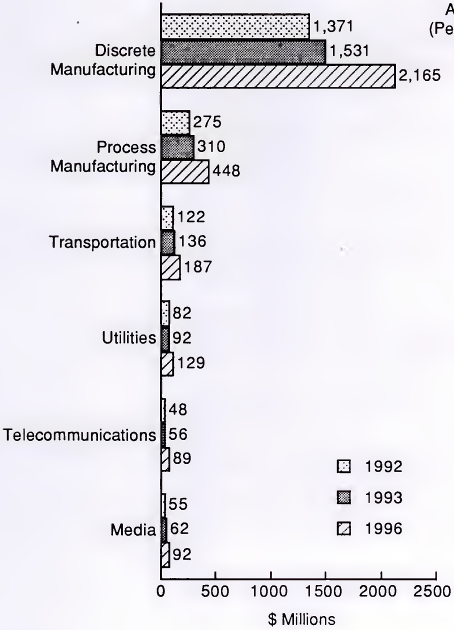
YRINE VIII-8a

Market Forecast by Industry Sector—1992, 1993, 1996
Northern New England Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Discrete Manufacturing	12	12
Process Manufacturing	13	13
Transportation	11	11
Utilities	13	12
Telecommunications	16	17
Media	14	14

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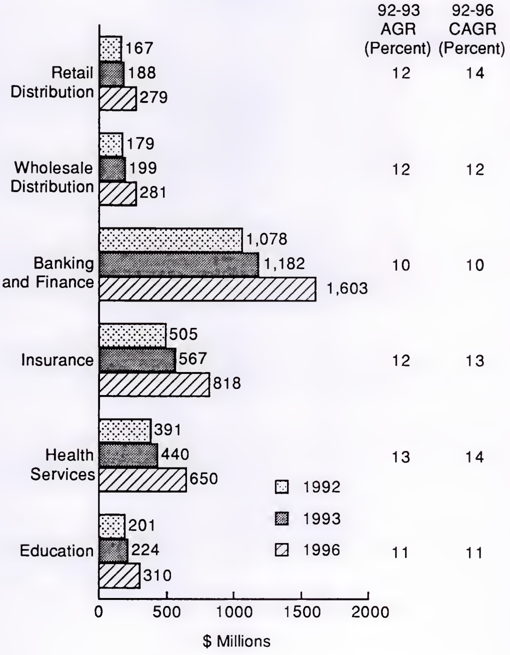
YRINE VIII-8b

Market Forecast by Industry Sector—1992, 1993, 1996
Northern New England Trading Area



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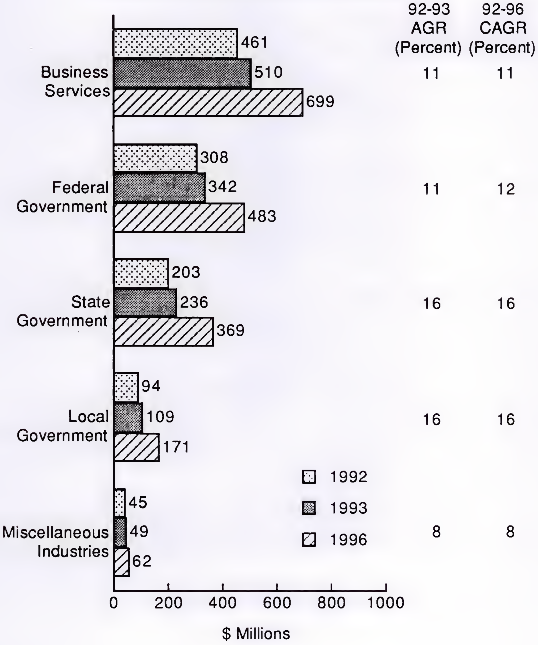
YRINE VIII-8c

Market Forecast by Industry Sector—1992, 1993, 1996
Northern New England Trading Area



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YRINE VIII-9

Total Professional Services* Market Forecast by Industry Sector—Northern New England Trading Area

Top Industries by Market Size

Rank	Industry	1992 ($M)	1992-1993 AGR (Percent)	1993 ($M)	1996 ($M)	1992-1996 CAGR (Percent)
1	Discrete Manufacturing	353	10	387	511	10
2	Banking and Finance	132	7	141	176	8
3	Insurance	118	9	129	171	10
4	Federal Government	88	11	97	134	11
5	State Government	82	15	95	145	15
6	Process Manufacturing	66	10	73	97	10

* Total Professional Services = Professional Services (consulting, systems development, education and training) + Systems Integration (services components)

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Northern New England

TOTAL MARKET ---
SIZE: 5,585

*** 1992 FORECAST ***

YEARS/DELIVERY MODES	-- PROC SERVICES -- Trans	Util	Other	- TURNKEY SYSTEMS - Equip	S/W	Prof	- APPLIC S/W PROD - Main	Mini	PC	- SYST OPS - Platf	Applic
Submode Totals -->	674	42	112	297	223	99	273	328	526	184	244
DELMODE TOTALS ---->			828			619			1,127		428
VERTICAL INDUSTRY MKTS	674	42	112	297	223	99	273	328	526	184	244
Discrete Manufacturing	72	4	12	113	85	38	44	126	96	21	25
Process Manufacturing	25	2	4	9	7	3	8	10	16	7	8
Transportation	54	3	9	3	2	1	5	4	7	3	1
Utilities	12	1	2	2	2	1	3	4	9	1	0
Telecommunications	11	1	2	2	2	1	3	1	2	0	0
Media (Brdcst/Publish)	7	0	1	4	3	1	2	4	3	1	1
Retail Distribution	12	1	2	22	16	7	4	12	14	6	6
Wholesale Distribution	20	1	3	14	10	5	19	11	20	3	2
Banking and Finance	236	15	39	30	22	10	88	63	65	43	81
Insurance	32	2	5	12	9	4	35	13	68	31	36
Health Services	36	2	6	31	23	10	34	27	48	29	26
Education	16	1	3	9	7	3	9	19	69	5	2
Business Services	119	7	20	27	20	9	11	.21	80	3	4
Federal Government	5	0	1	9	7	3	4	6	15	16	25
State Govt	9	1	2	2	2	1	2	1	4	11	18
Local & Misc Govt	4	0	1	1	1	0	1	1	2	5	8
Miscel Industries	4	0	1	7	5	2	1	3	8	0	0

YEARS/DELIVERY MODES	-- SYSTEMS INTEGRATION --- Equip	S/W	Prof	Other	-- PROF SERVICES -- Cons	Devel	Ed&Tr	- NET SVCS - EIS	N/A	-- SYST SOFTWARE -- Main	Mini	PC
Submode Totals -->	155	25	150	12	219	523	132	361	82	419	305	202
DELMODE TOTALS ---->				343			873		442			925
VERTICAL INDUSTRY MKTS	155	25	150	12	219	523	132	361	82	419	305	202
Discrete Manufacturing	58	7	26	3	82	191	50	7	4	134	114	60
Process Manufacturing	2	0	2	0	16	38	9	45	4	26	19	11
Transportation	1	0	2	0	1	3	1	11	2	4	2	2
Utilities	8	2	11	1	3	4	2	2	0	5	4	3
Telecommunications	1	0	1	0	2	6	1	2	0	5	3	2
Media (Brdcst/Publish)	2	0	1	0	3	7	2	1	0	5	4	2
Retail Distribution	6	1	9	1	3	8	2	16	4	6	6	4
Wholesale Distribution	3	1	5	0	4	11	2	7	13	14	7	5
Banking and Finance	9	2	12	1	30	72	17	89	6	75	46	26
Insurance	3	1	11	0	27	65	15	25	4	52	31	25
Health Services	5	1	8	0	4	10	2	37	13	18	11	9
Education	2	1	4	0	1	4	1	19	5	5	6	11
Business Services	3	1	6	1	5	11	3	75	1	11	10	14
Federal Government	42	6	37	4	10	28	8	16	22	18	13	9
State Govt	7	1	10	1	18	43	11	2	1	27	19	11
Local & Misc Govt	3	1	4	0	8	20	5	1	1	13	9	5
Miscel Industries	0		0		1	2	0	6	0	1	2	2

Northern New England—1992 Forecast Table
YRINE VIII-10

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Northern New England

TOTAL MARKET ---
SIZE: 6,233
92-93 GROWTH: 11.6%

1993 FORECAST

EARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
ubmode Totals -->	714	43	128	321	241	107	290	358	627	211	294	186	30	177	14	247	556	147	420	97	456	331	237
DELMODE TOTALS ---->			885			669			1,275		505				408			951		517			1,023
/ERTICAL INDUSTRY MKTS	714	43	128	321	241	107	290	358	627	211	294	186	30	177	14	247	556	147	420	97	456	331	237
)iscrete Manufacturing	75	5	13	124	93	41	47	138	119	25	30	72	8	33	3	94	201	56	9	5	146	124	70
Process Manufacturing	26	2	5	11	8	4	8	11	20	8	11	3	0	3	0	19	40	11	53	6	29	21	13
ransportation	58	4	10	4	3	1	5	4	9	3	1	2	0	2	0	1	3	1	13	2	4	2	2
Jtilities	13	1	2	2	2	1	3	5	10	1	0	9	2	13	1	4	5	3	2	0	5	4	3
elecommunications	13	1	2	3	2	1	3	2	3	0	0	1	0	1	0	3	7	2	2	0	5	3	2
ledia (Brdcst/Publish)	8	0	1	4	3	1	3	4	4	1	1	2	0	1	0	3	8	2	1	0	6	4	3
Retail Distribution	13	1	2	23	17	8	5	13	16	8	7	7	1	10	1	3	8	2	19	6	6	7	4
Vholesale Distribution	21	1	4	14	11	5	20	12	25	3	2	4	1	6	0	5	12	3	8	16	14	8	7
Banking and Finance	253	15	45	32	24	11	94	69	70	48	98	10	2	14	1	32	75	18	104	7	80	49	29
nsurance	34	2	6	12	9	4	38	14	83	35	44	3	2	13	0	30	69	17	28	4	56	33	30
lealth Services	38	2	7	32	24	11	36	30	61	33	32	6	1	8	0	4	10	2	42	16	19	12	12
Education	16	1	3	10	7	3	9	21	78	5	2	3	1	4	0	2	4	1	23	6	6	7	13
Business Services	121	7	22	29	22	10	11	23	97	3	5	3	2	8	1	5	11	3	87	1	11	11	17
Federal Government	6	0	1	10	7	3	5	7	19	18	28	48	7	43	4	10	31	8	18	24	20	14	10
State Govt	11	1	2	3	2	1	2	2	4	13	22	8	1	12	1	22	48	12	3	2	31	21	13
.ocal & Misc Govt	5	0	1	1	1	0	1	1	2	6	10	4	1	5	0	10	22	6	1	1	14	10	6
liscel Industries	4	0	1	7	5	2	1	4	8	0	0	0		0		1	2	0	7	0	1	2	2

Northern New England—1993 Forecast Table
YRINE VIII-11

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Northern New England

TOTAL MARKET ---
SIZE: 8,838
92-96 GROWTH: 12.2%

1996 FORECAST

EARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
ubmode Totals -->	844	49	188	413	310	138	347	469	1,081	293	516	310	50	295	24	357	670	201	668	169	598	435	413
DELMODE TOTALS ---->			1,081			861			1,898		809				678			1,228		838			1,446
ERTICAL INDUSTRY MKTS	844	49	188	413	310	138	347	469	1,081	293	516	310	50	295	24	357	670	201	668	169	598	435	413
iscrete Manufacturing	84	5	19	170	127	57	54	182	223	36	58	126	14	57	6	138	233	77	17	10	191	162	120
rocess Manufacturing	30	2	7	15	11	5	10	16	35	11	20	5	1	5	0	28	48	16	83	14	38	27	23
ransportation	73	4	16	5	4	2	6	5	14	5	2	3	0	4	0	2	4	1	21	4	5	3	4
tilities	19	1	4	4	3	1	4	6	16	1	1	13	3	17	1	5	6	3	3	0	7	5	5
elecommunications	19	1	4	4	3	1	4	3	5	0	1	1	0	2	0	4	10	3	3	0	8	5	4
edia (Brdcst/Publish)	11	1	2	6	4	2	3	6	8	1	2	3	0	2	0	5	10	3	2	0	8	6	5
etail Distribution	16	1	3	28	21	9	5	18	26	13	16	13	3	19	2	4	9	2	33	12	8	8	7
holesale Distribution	26	2	6	17	13	6	22	15	46	5	4	6	1	9	0	6	13	3	12	31	17	10	12
anking and Finance	309	18	69	40	30	13	122	90	92	66	172	19	4	27	3	41	83	23	166	11	102	61	43
nsurance	41	2	9	14	10	5	44	15	157	47	75	6	3	22	1	43	80	25	44	5	73	42	55
ealth Services	43	2	10	37	27	12	42	39	128	45	61	8	2	11	1	6	12	3	64	30	24	16	27
ducation	17	1	4	12	9	4	9	27	111	7	3	4	1	7	0	2	5	1	38	10	7	9	21
usiness Services	124	7	28	37	28	12	12	30	156	5	10	6	3	14	1	7	13	3	140	3	13	14	32
ederal Government	6	0	1	12	9	4	5	10	43	23	36	74	11	66	6	12	42	8	22	32	25	18	19
tate Govt	15	1	3	4	3	1	3	2	8	18	38	15	2	21	1	36	68	19	5	4	48	32	23
ocal & Misc Govt	7	0	2	2	1	1	1	1	4	8	18	7	1	10	1	17	31	9	2	2	22	15	11
iscel Industries	4	0	1	8	6	3	0	4	11	0	1	0	0	0		1	2	1	12	0	2	2	3

Northern New England—1996 Forecast Table

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IX

Connecticut Central Trading Area

IX

Connecticut Central Trading Area

YRINE IX-1

Geographic and Industry Description
Connecticut Central Trading Area

Geography

States	*Counties*
Connecticut	Hartford
	Litchfield
	Middlesex
	New Haven
	New London
	Tolland

Significant Industries	
Industry Sector	1992 Information Services Market Forecast ($M)
Discrete Manufacturing	361
Process Manufacturing	57
Transportation	36
Utilities	20
Telecommunications	47
Media	8
Retail Distribution	44
Wholesale Distribution	32
Banking and Finance	129
Insurance	551
Health Services	80
Education	32
Business Services	54
Federal Government	71
State Government	71
Local Government	25
Miscellaneous Industries	15
Total	1,632*

* Industry sector forecast numbers may not add exactly to trading area total due to rounding.

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YRINE IX-2

Area Demographics—Revenues
Connecticut Central Trading Area

Revenues ($ Millions)	Percent of Total Establishments*
<10	55
10-49	31
50-99	7
100-249	5
250-499	2
500-999	1
>1,000	1
Total	100**

*Total establishments for trading area: 1,447

**Percentages may not add exactly to 100 due to rounding.

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YRINE IX-3

Area Demographics—Employees
Connecticut Central Trading Area

Employees	Percent of Total Establishments*
1-99	52
100-499	36
500-999	7
1,000-4,999	4
>5,000	0
Total	100 **

*Total establishments for trading area: 1,447

**Percentages may not add exactly to 100 due to rounding.

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YRINE IX-4a

Area Demographics—Computing Power Connecticut Central Trading Area

Industry Sector	% of Total Establishments	% of Total MIPS
Discrete Manufacturing	21	33
Process Manufacturing	10	3
Transportation	3	-
Utilities	1	2
Telecommunications	-	2
Media	2	-
Retail Distribution	9	2
Wholesale Distribution	7	2
Banking and Finance	4	2
Insurance	5	14
Health Services	4	2
Education	3	21
Business Services	17	10
Federal Government	1	2
State Government	3	2
Local Government	5	-
Miscellaneous Industries	3	-
Totals	100*	100*

*Percentages may not add exactly to 100 due to rounding.

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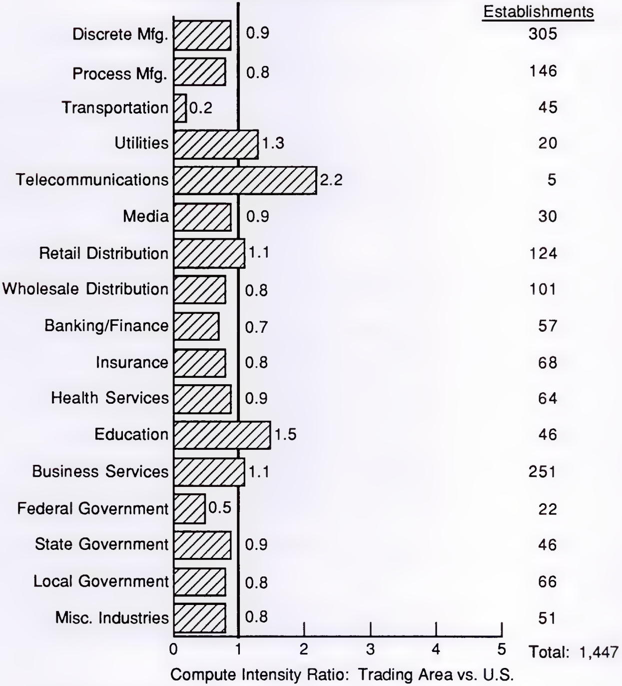
YRINE IX-4b

Area Demographics—Compute Intensity*
Connecticut Central Trading Area

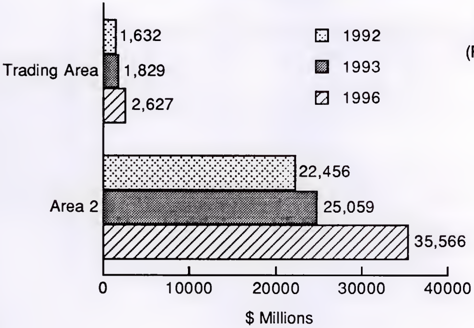


* Definition: Compute Intensity is a measure of the average level of computing resources for an industry sector. It is calculated as follows:

$$\frac{\text{Average \# MIPS}}{\text{Average \# Employees}}$$

YRINE IX-5

Total Market Forecast—1992, 1993, 1996
Connecticut Central Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Trading Area	12	13
Area 2	12	12

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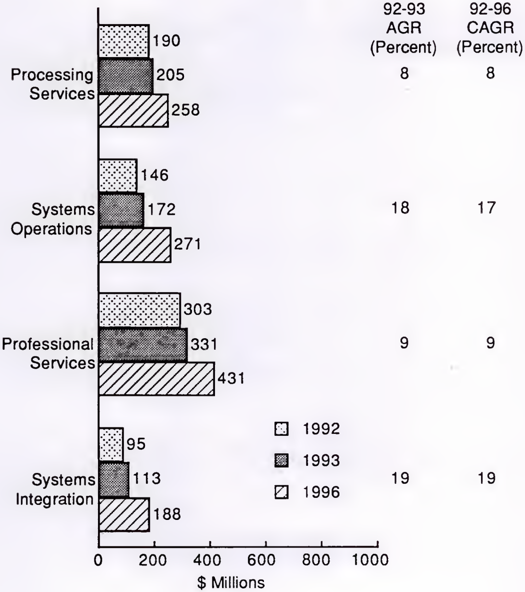
YRINE IX-6a

Market Forecast by Delivery Mode—1992, 1993, 1996
Connecticut Central Trading Area



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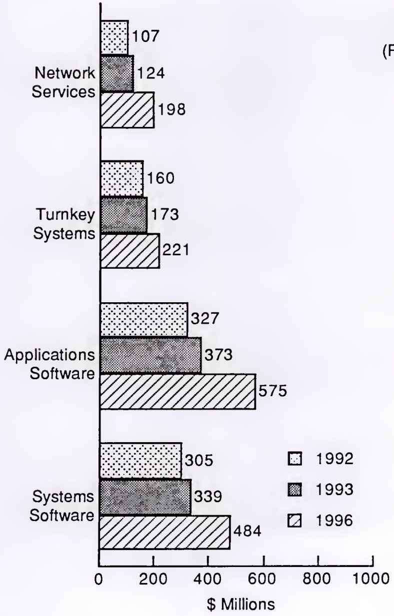
YRINE IX-6b

Market Forecast by Delivery Mode—1992, 1993, 1996
Connecticut Central Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Network Services	16	17
Turnkey Systems	8	8
Applications Software	14	15
Systems Software	11	12

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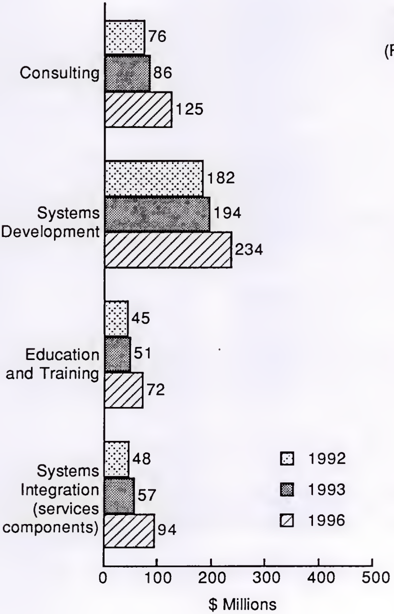
YRINE IX-7

Total Professional Services Market Forecast by Submode—1992, 1993, 1996 Connecticut Central Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Consulting	13	13
Systems Development	7	7
Education and Training	13	12
Systems Integration (services components)	19	18

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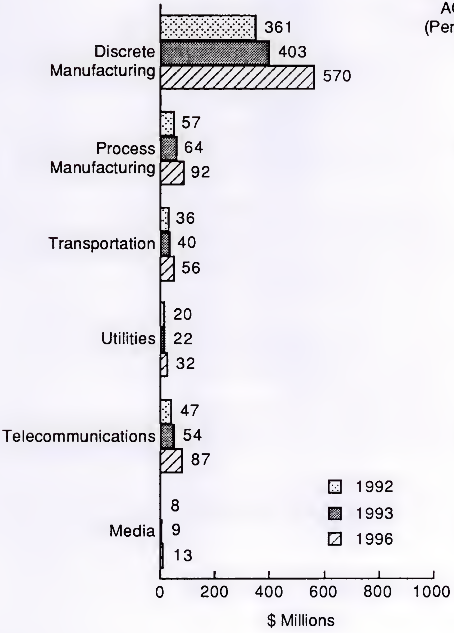
YRINE IX-8a

Market Forecast by Industry Sector—1992, 1993, 1996
Connecticut Central Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Discrete Manufacturing	12	12
Process Manufacturing	13	13
Transportation	11	11
Utilities	13	12
Telecommunications	16	17
Media	14	14

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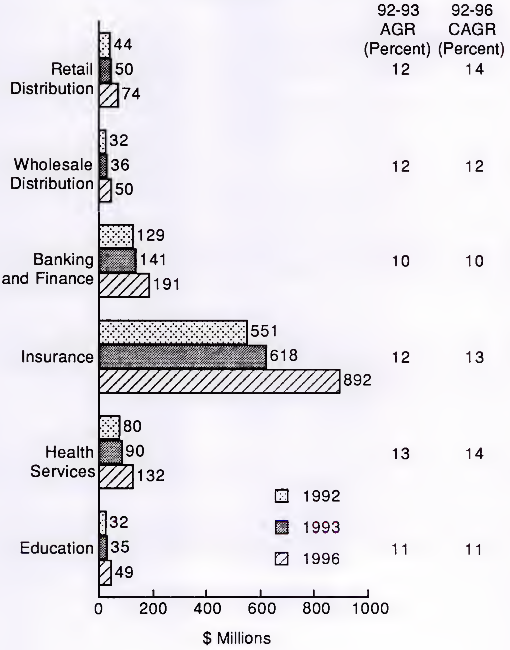
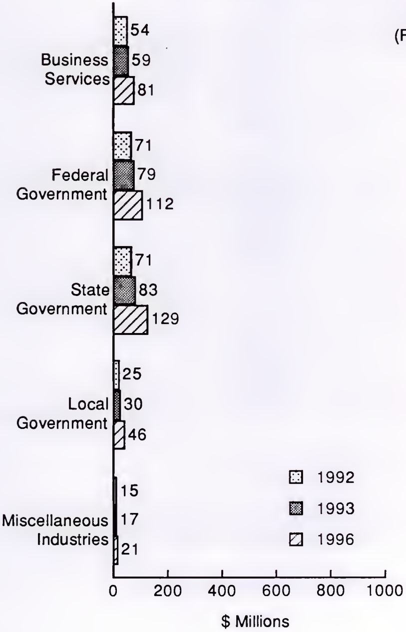
YRINE IX-8b

Market Forecast by Industry Sector—1992, 1993, 1996
Connecticut Central Trading Area



YRINE IX-8c

Market Forecast by Industry Sector—1992, 1993, 1996
Connecticut Central Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Business Services	11	11
Federal Government	11	12
State Government	16	16
Local Government	16	16
Miscellaneous Industries	8	8

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YRINE IX-9

Total Professional Services* Market Forecast by Industry Sector—Connecticut Central Trading Area

Top Industries by Market Size

Rank	Industry	1992 ($M)	1992-1993 AGR (Percent)	1993 ($M)	1996 ($M)	1992-1996 CAGR (Percent)
1	Insurance	129	9	141	186	10
2	Discrete Manufacturing	93	10	102	135	10
3	State Government	29	15	33	51	15
4	Federal Government	20	11	22	31	11
5	Banking/Finance	16	7	17	21	8
6	Process Manufacturing	14	10	15	20	10

* Total Professional Services = Professional Services (consulting, systems development, education and training) + Systems Integration (services components)

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Connecticut Central

TOTAL MARKET ---
SIZE: 1,632

1992 FORECAST

EARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
ubmode Totals -->	155	10	26	77	58	26	84	81	162	65	80	40	7	45	3	76	182	45	86	21	141	97	67
DELMODE TOTALS ---->			190			160			327		146				95			303		107			305
ERTICAL INDUSTRY MKTS	155	10	26	77	58	26	84	81	162	65	80	40	7	45	3	76	182	45	86	21	141	97	67
iscrete Manufacturing	19	1	3	30	22	10	12	33	25	6	6	15	2	7	1	22	50	13	2	1	35	30	16
rocess Manufacturing	5	0	1	2	1	1	2	2	3	1	2	0	0	1	0	3	8	2	9	1	5	4	2
ransportation	16	1	3	1	1	0	1	1	2	1	0	0	0	1	0	0	1	0	3	1	1	1	1
tilities	3	0	0	1	0	0	1	1	2	0	0	2	0	3	0	1	1	1	1	0	1	1	1
elecommunications	11	1	2	2	2	1	3	1	2	0	0	1	0	1	0	2	6	1	2	0	4	3	2
edia (Brdcst/Publish)	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0
etail Distribution	3	0	1	6	4	2	1	3	4	2	1	2	0	2	0	1	2	0	4	1	2	2	1
holesale Distribution	3	0	1	2	2	1	3	2	4	0	0	1	0	1	0	1	2	0	1	2	2	1	1
anking and Finance	28	2	5	4	3	1	11	8	8	5	10	1	0	1	0	4	9	2	11	1	9	5	3
nsurance	35	2	6	13	9	4	39	15	74	34	39	3	2	12	0	29	71	17	27	4	57	33	27
ealth Services	7	0	1	6	5	2	7	6	10	6	5	1	0	2	0	1	2	0	7	3	4	2	2
ducation	3	0	0	1	1	0	1	3	11	1	0	0	0	1	0	0	1	0	3	1	1	1	2
usiness Services	14	1	2	3	2	1	1	3	9	0	0	0	0	1	0	1	1	0	9	0	1	1	2
ederal Government	1	0	0	2	2	1	1	1	4	4	6	10	1	9	1	2	7	2	4	5	4	3	2
tate Govt	3	0	1	1	1	0	1	0	1	4	6	2	0	3	0	6	15	4	1	1	9	6	4
ocal & Misc Govt	1	0	0	0	0	0	0	0	0	1	2	1	0	1	0	2	5	1	0	0	3	2	1
iscel Industries	1	0	0	2	2	1	0	1	3	0	0	0		0		0	1	0	2	0	0	1	1

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Connecticut Central

TOTAL MARKET ---
SIZE: 1,829
92-93 GROWTH: 12.1%

1993 FORECAST

EARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
ubmode Totals -->	166	10	30	83	62	28	89	88	196	75	97	48	8	53	4	86	194	51	100	24	154	106	79
DELMODE TOTALS ---->			205			173			373		172				113			331		124			339
ERTICAL INDUSTRY MKTS	166	10	30	83	62	28	89	88	196	75	97	48	8	53	4	86	194	51	100	24	154	106	79
iscrete Manufacturing	20	1	4	33	24	11	12	36	31	7	8	19	2	9	1	25	53	15	2	1	38	33	19
rocess Manufacturing	5	0	1	2	2	1	2	2	4	2	2	1	0	1	0	4	8	2	11	1	6	4	3
ransportation	17	1	3	1	1	0	1	1	3	1	0	1	0	1	0	0	1	0	4	1	1	1	1
tilities	3	0	1	1	0	0	1	1	2	0	0	2	1	3	0	1	1	1	1	0	1	1	1
elecommunications	12	1	2	3	2	1	3	2	3	0	0	1	0	1	0	2	7	2	2	0	5	3	2
edia (Brdcst/Publish)	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0
etail Distribution	3	0	1	6	5	2	1	3	4	2	2	2	0	3	0	1	2	0	5	1	2	2	1
holesale Distribution	4	0	1	3	2	1	4	2	4	1	0	1	0	1	0	1	2	0	1	3	3	1	1
anking and Finance	30	2	5	4	3	1	11	8	8	6	12	1	0	2	0	4	9	2	12	1	10	6	3
nsurance	37	2	7	13	10	4	41	15	90	39	47	3	2	14	0	33	75	19	31	5	62	36	33
ealth Services	8	0	1	7	5	2	7	6	12	7	7	1	0	2	0	1	2	0	8	3	4	2	2
ducation	3	0	0	1	1	0	1	3	12	1	0	0	0	1	0	0	1	0	4	1	1	1	2
usiness Services	14	1	3	3	3	1	1	3	11	0	1	0	0	1	0	1	1	0	10	0	1	1	2
ederal Government	1	0	0	2	2	1	1	2	4	4	6	11	2	10	1	2	7	2	4	6	5	3	2
tate Govt	4	0	1	1	1	0	1	1	2	5	8	3	0	4	0	8	17	4	1	1	11	7	5
ocal & Misc Govt	1	0	0	0	0	0	0	0	1	2	3	1	0	1	0	3	6	2	0	0	4	3	2
iscel Industries	1	0	0	2	2	1	0	1	3	0	0	0		0		0	1	0	3	0	0	1	1

Connecticut Central—1993 Forecast Table

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Connecticut Central

TOTAL MARKET ---
SIZE: 2,627
92-96 GROWTH: 12.6%

1996 FORECAST

EARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
ubmode Totals -->	201	12	45	106	79	35	105	113	357	102	169	80	14	88	6	125	234	72	158	41	204	140	141
DELMODE TOTALS ---->			258			221			575		271				188			431		198			484
ERTICAL INDUSTRY MKTS	201	12	45	106	79	35	105	113	357	102	169	80	14	88	6	125	234	72	158	41	204	140	141
iscrete Manufacturing	22	1	5	45	34	15	14	48	59	9	15	33	4	15	2	36	61	20	4	3	50	43	32
rocess Manufacturing	6	0	1	3	2	1	2	3	7	2	4	1	0	1	0	6	10	3	17	3	8	6	5
ransportation	22	1	5	1	1	0	2	2	4	2	1	1	0	1	0	1	1	0	6	1	1	1	1
tilities	5	0	1	1	1	0	1	2	4	0	0	3	1	4	0	1	1	1	1	0	2	1	1
elecommunications	19	1	4	4	3	1	4	3	5	0	1	1	0	2	0	4	10	3	3	0	8	5	4
edia (Brdcst/Publish)	2	0	0	1	1	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	1	1	1
etail Distribution	4	0	1	7	6	2	1	5	7	4	4	4	1	5	0	1	2	1	9	3	2	2	2
holesale Distribution	5	0	1	3	2	1	4	3	8	1	1	1	0	2	0	1	2	1	2	6	3	2	2
anking and Finance	37	2	8	5	4	2	15	11	11	8	21	2	0	3	0	5	10	3	20	1	12	7	5
nsurance	45	3	10	15	11	5	48	16	172	51	81	6	3	24	1	47	87	28	48	6	80	46	60
ealth Services	9	1	2	7	6	2	8	8	26	9	12	2	0	2	0	1	3	1	13	6	5	3	5
ducation	3	0	1	2	1	1	1	4	17	1	0	1	0	1	0	0	1	0	6	2	1	1	3
usiness Services	14	1	3	4	3	1	1	3	18	1	1	1	0	2	0	1	2	0	16	0	2	2	4
ederal Government	1	0	0	3	2	1	1	2	10	5	8	17	3	15	1	3	10	2	5	7	6	4	4
tate Govt	5	0	1	1	1	0	1	1	3	6	13	5	1	7	0	13	24	7	2	1	17	11	8
ocal & Misc Govt	2	0	0	0	0	0	0	0	1	2	5	2	0	3	0	4	9	2	1	0	6	4	3
iscel Industries	1	0	0	3	2	1	0	2	4	0	0	0	0	0		0	1	0	4	0	1	1	1

Connecticut Central—1996 Forecast Table
YRINE IX-12

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X

Lower Connecticut Trading Area

X

Lower Connecticut Trading Area

YRINE X-1

Geographic and Industry Description
Lower Connecticut Trading Area

Geography

States	*Counties*
Connecticut	Fairfield

Significant Industries	
Industry Sector	1992 Information Services Market Forecast ($M)
Discrete Manufacturing	261
Process Manufacturing	37
Transportation	16
Utilities	2
Telecommunications	10
Media	5
Retail Distribution	16
Wholesale Distribution	21
Banking and Finance	158
Insurance	22
Health Services	25
Education	2
Business Services	31
Federal Government	0
State Government	2
Local Government	9
Miscellaneous Industries	4
Total	620

* Industry sector forecast numbers may not add exactly to trading area total due to rounding.

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YRINE X-2

Area Demographics—Revenues
Lower Connecticut Trading Area

Revenues ($ Millions)	Percent of Total Establishments*
<10	57
10-49	29
50-99	8
100-249	4
250-499	1
500-999	0
>1,000	0
Total	100 **

*Total establishments for trading area: 687

**Percentages may not add exactly to 100 due to rounding.

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YRINE X-3

Area Demographics—Employees Lower Connecticut Trading Area

Employees	Percent of Total Establishments*
1-99	57
100-499	33
500-999	7
1,000-4,999	3
>5,000	0
Total	100

*Total establishments for trading area: 687

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YRINE X-4a

Area Demographics—Computing Power
Lower Connecticut Trading Area

Industry Sector	% of Total Establishments	% of Total MIPS
Discrete Manufacturing	21	74
Process Manufacturing	12	3
Transportation	4	-
Utilities	1	-
Telecommunications	1	-
Media	3	-
Retail Distribution	6	1
Wholesale Distribution	7	4
Banking and Finance	8	6
Insurance	3	1
Health Services	3	1
Education	2	1
Business Services	22	9
Federal Government	-	-
State Government	1	-
Local Government	3	-
Miscellaneous Industries	4	-
Totals	100*	100*

*Percentages may not add exactly to 100 due to rounding.

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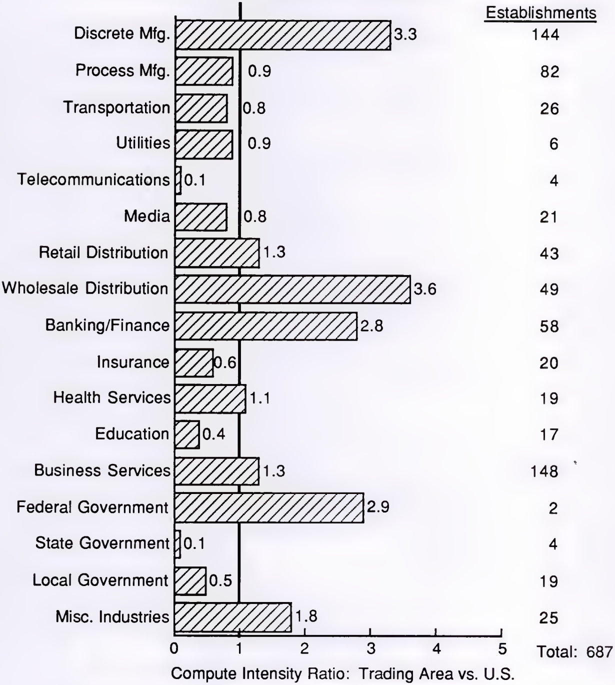
YRINE X-4b

Area Demographics—Compute Intensity*
Lower Connecticut Trading Area



* Definition: Compute Intensity is a measure of the average level of computing resources for an industry sector. It is calculated as follows:

$$\frac{\text{Average \# MIPS}}{\text{Average \# Employees}}$$

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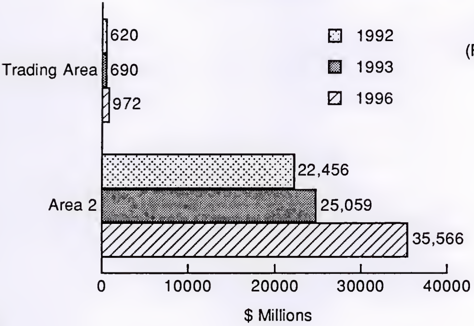
YRINE X-5

Total Market Forecast—1992, 1993, 1996
Lower Connecticut Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Trading Area	11	12
Area 2	12	12

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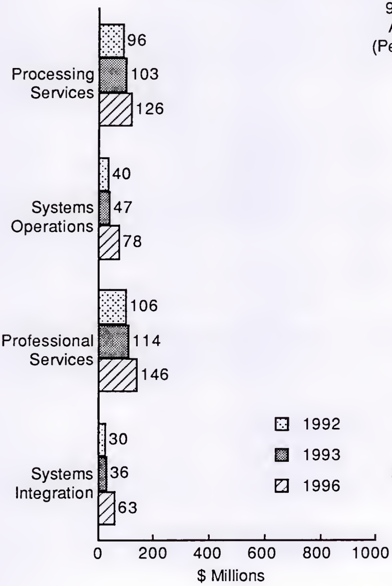
YRINE X-6a

Market Forecast by Delivery Mode—1992, 1993, 1996
Lower Connecticut Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Processing Services	7	7
Systems Operations	18	18
Professional Services	8	8
Systems Integration	20	20

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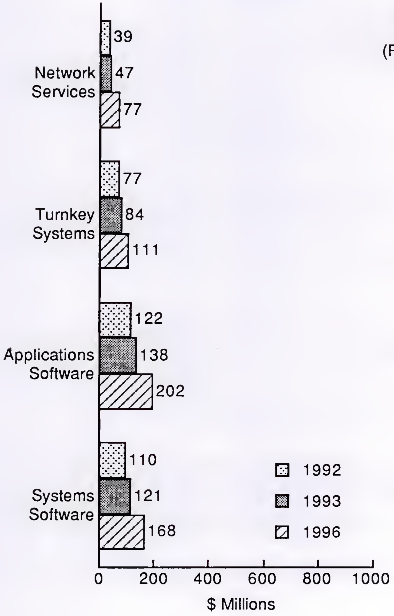
YRINE X-6b

Market Forecast by Delivery Mode—1992, 1993, 1996
Lower Connecticut Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Network Services	21	19
Turnkey Systems	9	10
Applications Software	13	13
Systems Software	10	11

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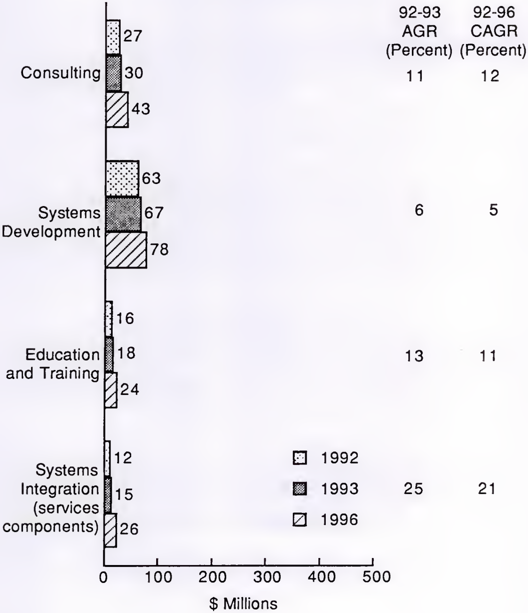
YRINE X-7

Total Professional Services Market Forecast by Submode—1992, 1993, 1996 Lower Connecticut Trading Area



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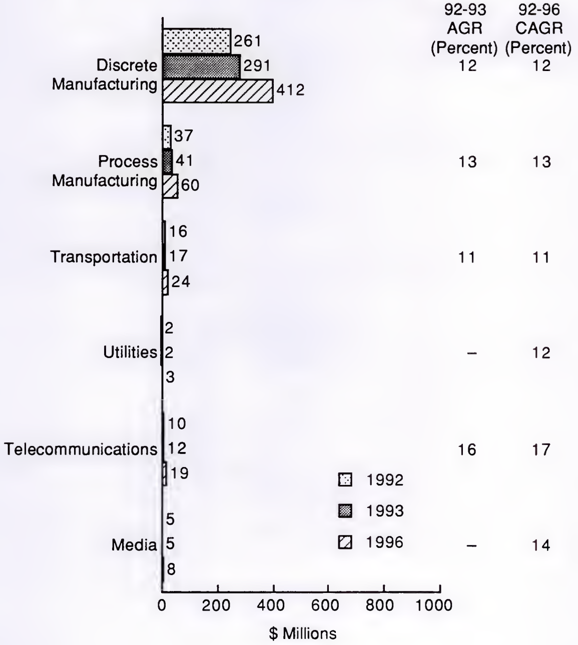
YRINE X-8a

Market Forecast by Industry Sector—1992, 1993, 1996
Lower Connecticut Trading Area



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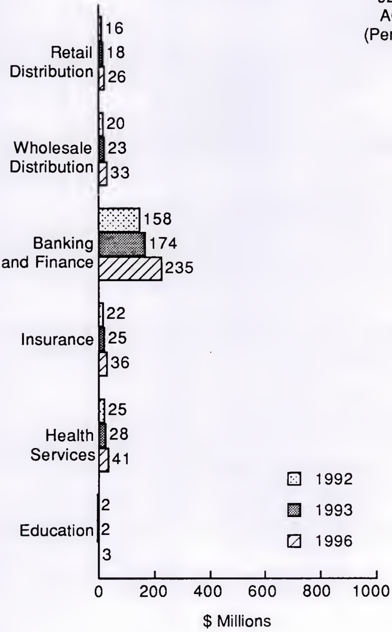
YRINE X-8b

Market Forecast by Industry Sector—1992, 1993, 1996
Lower Connecticut Trading Area



Industry Sector	92-93 AGR (Percent)	92-96 CAGR (Percent)
Retail Distribution	12	14
Wholesale Distribution	12	12
Banking and Finance	10	10
Insurance	12	13
Health Services	13	14
Education	–	11

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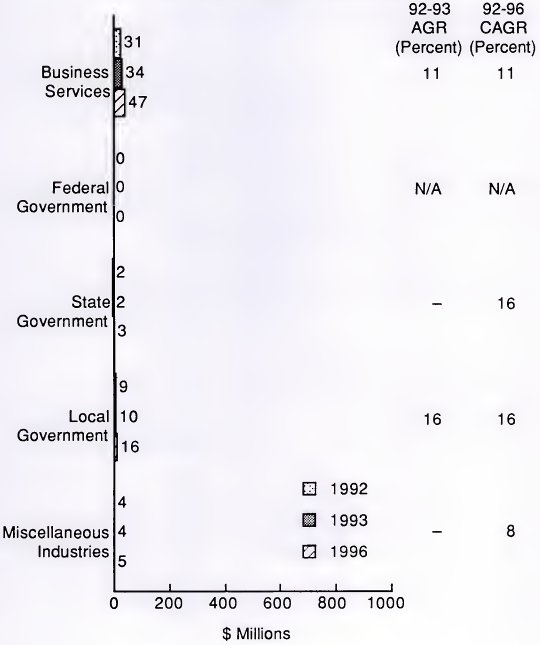
YRINE X-8c

Market Forecast by Industry Sector—1992, 1993, 1996
Lower Connecticut Trading Area



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YRINE X-9

Total Professional Services* Market Forecast by Industry Sector—Lower Connecticut Trading Area

Top Industries by Market Size

Rank	Industry	1992 ($M)	1992-1993 AGR (Percent)	1993 ($M)	1996 ($M)	1992-1996 CAGR (Percent)
1	Discrete Manufacturing	67	10	74	97	10
2	Banking/Finance	19	7	21	26	8
3	Process Manufacturing	9	10	10	13	10
4	Insurance	5	9	6	8	10

* Total Professional Services = Professional Services (consulting, systems development, education and training) + Systems Integration (services components)

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Lower Connecticut

TOTAL MARKET --- SIZE: 620

1992 FORECAST

YEARS/DELIVERY MODES	-- PROC SERVICES -- Trans	Util	Other	- TURNKEY SYSTEMS - Equip	S/W	Prof	- APPLIC S/W PROD - Main	Mini	PC	- SYST OPS - Platf	Applic	-- SYSTEMS INTEGRATION --- Equip	S/W	Prof	Other	-- PROF SERVICES -- Cons	Devel	Ed&Tr	- NET SVCS - EIS	N/A	-- SYST SOFTWARE -- Main	Mini	PC
Submode Totals -->	78	5	13	37	28	12	31	42	48	17	23	15	2	11	1	27	63	16	34	6	50	38	22
DELMODE TOTALS ---->			96			77			122		40				30			106		39			110
VERTICAL INDUSTRY MKTS	78	5	13	37	28	12	31	42	48	17	23	15	2	11	1	27	63	16	34	6	50	38	22
Discrete Manufacturing	14	1	2	21	16	7	8	24	18	4	5	11	1	5	1	16	36	9	1	1	26	22	11
Process Manufacturing	3	0	1	1	1	0	1	1	2	1	1	0	0	0	0	2	5	1	6	1	3	2	2
Transportation	7	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Telecommunications	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0
Media (Brdcst/Publish)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Retail Distribution	1	0	0	2	2	1	0	1	1	1	1	1	0	1	0	0	1	0	1	0	1	1	0
Wholesale Distribution	2	0	0	2	1	1	2	1	2	0	0	0	0	1	0	0	1	0	1	1	2	1	1
Banking and Finance	35	2	6	4	3	1	13	9	10	6	12	1	0	2	0	4	11	2	13	1	11	7	4
Insurance	1	0	0	1	0	0	2	1	3	1	2	0	0	0	0	1	3	1	1	0	2	1	1
Health Services	2	0	0	2	1	1	2	2	3	2	2	0	0	0	0	0	1	0	2	1	1	1	1
Education	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Business Services	8	0	1	2	1	1	1	1	5	0	0	0	0	0	0	0	1	0	5	0	1	1	1
Federal Government	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Govt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local & Misc Govt	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	1	1	0
Miscel Industries	0	0	0	1	0	0	0	0	1	0	0	0		0		0	0	0	1	0	0	0	0

Lower Connecticut—1992 Forecast Table
YRINE X-10

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Lower Connecticut

TOTAL MARKET ---
SIZE: 690
92-93 GROWTH: 11.4%

1993 FORECAST

YEARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
Submode Totals -->	83	5	15	40	30	13	33	46	58	19	28	19	3	14	1	30	67	18	40	7	54	41	26
DELMODE TOTALS ---->			103			84			138		47				36			114		47			121
VERTICAL INDUSTRY MKTS	83	5	15	40	30	13	33	46	58	19	28	19	3	14	1	30	67	18	40	7	54	41	26
Discrete Manufacturing	14	1	3	24	18	8	9	26	23	5	6	14	2	6	1	18	38	11	2	1	28	24	13
Process Manufacturing	3	0	1	1	1	0	1	2	3	1	1	0	0	0	0	2	5	1	7	1	4	3	2
Transportation	7	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0
Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Telecommunications	3	0	0	1	0	0	1	0	1	0	0	0	0	0	0	1	2	0	0	0	1	1	0
Media (Brdcst/Publish)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
Retail Distribution	1	0	0	2	2	1	0	1	1	1	1	1	0	1	0	0	1	0	2	1	1	1	0
Wholesale Distribution	2	0	0	2	1	1	2	1	3	0	0	0	0	1	0	1	1	0	1	2	2	1	1
Banking and Finance	37	2	7	5	4	2	14	10	10	7	14	2	0	2	0	5	11	3	15	1	12	7	4
Insurance	2	0	0	1	0	0	2	1	4	2	2	0	0	1	0	1	3	1	1	0	2	1	1
Health Services	2	0	0	2	2	1	2	2	4	2	2	0	0	1	0	0	1	0	3	1	1	1	1
Education	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Business Services	8	0	1	2	1	1	1	2	7	0	0	0	0	1	0	0	1	0	6	0	1	1	1
Federal Government	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Govt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local & Misc Govt	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	2	1	0	0	1	1	1
Miscel Industries	0	0	0	1	0	0	0	0	1	0	0	0		0		0	0	0	1	0	0	0	0

Lower Connecticut—1993 Forecast Table
YRINE X-11

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Lower Connecticut

TOTAL MARKET ---
SIZE: 972
92-96 GROWTH: 11.9%

** 1996 FORECAST **

YEARS/DELIVERY MODES	-- PROC SERVICES -- Trans	Util	Other	- TURNKEY SYSTEMS - Equip	S/W	Prof	- APPLIC S/W PROD - Main	Mini	PC	- SYST OPS - Platf	Applic
Submode Totals -->	99	6	22	53	40	18	40	61	100	27	51
DELMODE TOTALS ---->			126			111			202		78
VERTICAL INDUSTRY MKTS	99	6	22	53	40	18	40	61	100	27	51
Discrete Manufacturing	16	1	4	32	24	11	10	35	42	7	11
Process Manufacturing	4	0	1	2	1	1	1	2	5	2	3
Transportation	9	1	2	1	0	0	1	1	2	1	0
Utilities	1	0	0	0	0	0	0	0	0	0	0
Telecommunications	4	0	1	1	1	0	1	1	1	0	0
Media (Brdcst/Publish)	1	0	0	0	0	0	0	0	1	0	0
Retail Distribution	1	0	0	3	2	1	0	2	2	1	1
Wholesale Distribution	3	0	1	2	2	1	3	2	5	1	0
Banking and Finance	45	3	10	6	4	2	18	13	13	10	25
Insurance	2	0	0	1	0	0	2	1	7	2	3
Health Services	3	0	1	2	2	1	3	2	8	3	4
Education	0	0	0	0	0	0	0	0	1	0	0
Business Services	8	0	2	3	2	1	1	2	11	0	1
Federal Government	0	0	0	0	0	0	0	0	0	0	0
State Govt	0	0	0	0	0	0	0	0	0	0	0
Local & Misc Govt	1	0	0	0	0	0	0	0	0	1	2
Miscel Industries	0	0	0	1	1	0	0	0	1	0	0

YEARS/DELIVERY MODES	-- SYSTEMS INTEGRATION --- Equip	S/W	Prof	Other	-- PROF SERVICES -- Cons	Devel	Ed&Tr	- NET SVCS - EIS	N/A	-- SYST SOFTWARE -- Main	Mini	PC
Submode Totals -->	33	5	24	2	43	78	24	64	13	71	53	44
DELMODE TOTALS ---->				63			146		77			168
VERTICAL INDUSTRY MKTS	33	5	24	2	43	78	24	64	13	71	53	44
Discrete Manufacturing	24	3	11	1	26	44	15	3	2	36	31	23
Process Manufacturing	1	0	1	0	4	6	2	11	2	5	4	3
Transportation	0	0	1	0	0	1	0	3	1	1	0	0
Utilities	0	0	0	0	0	0	0	0	0	0	0	0
Telecommunications	0	0	0	0	1	2	1	1	0	2	1	1
Media (Brdcst/Publish)	0	0	0	0	0	1	0	0	0	1	1	0
Retail Distribution	1	0	2	0	0	1	0	3	1	1	1	1
Wholesale Distribution	1	0	1	0	1	2	0	1	4	2	1	1
Banking and Finance	3	1	4	0	6	12	3	24	2	15	9	6
Insurance	0	0	1	0	2	4	1	2	0	3	2	2
Health Services	1	0	1	0	0	1	0	4	2	2	1	2
Education	0	0	0	0	0	0	0	0	0	0	0	0
Business Services	0	0	1	0	0	1	0	9	0	1	1	2
Federal Government	0	0	0	0	0	0	0	0	0	0	0	0
State Govt	0	0	0	0	0	1	0	0	0	0	0	0
Local & Misc Govt	1	0	1	0	2	3	1	0	0	2	1	1
Miscel Industries	0	0	0		0	0	0	1	0	0	0	0

Lower Connecticut—1996 Forecast Table
YRINE X-12

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XI

Northeastern New York Trading Area

XI

Northeastern New York Trading Area

YRINE XI-1

Geographic and Industry Description
Northeastern New York Trading Area

Geography

States	Counties	
New York	Albany	Rensselaer
	Columbia	Saratoga
	Dutchess	Schenectady
	Fulton	Schoharie
	Greene	Sullivan
	Hamilton	Ulster
	Montgomery	Warren
	Orange	Washington
	Putnam	

Significant Industries

Industry Sector	1992 Information Services Market Forecast ($M)
Discrete Manufacturing	123
Process Manufacturing	43
Transportation	28
Utilities	9
Telecommunications	21
Media	9
Retail Distribution	18
Wholesale Distribution	14
Banking and Finance	74
Insurance	33
Health Services	72
Education	42
Business Services	34
Federal Government	20
State Government	201
Local Government	24
Miscellaneous Industries	11
Total	776

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YRINE XI-2

Area Demographics—Revenues Northeastern New York Trading Area

Revenues ($ Millions)	Percent of Total Establishments*
<10	49
10-49	35
50-99	8
100-249	5
250-499	1
500-999	1
>1,000	0
Total	100 **

*Total establishments for trading area: 1,041

**Percentages may not add exactly to 100 due to rounding.

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YRINE XI-3

Area Demographics—Employees Northeastern New York Trading Area

Employees	Percent of Total Establishments*
1-99	51
100-499	36
500-999	7
1,000-4,999	5
>5,000	0
Total	100

*Total establishments for trading area: 1,041

**Percentages may not add exactly to 100 due to rounding.

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YRINE XI-4a

Area Demographics—Computing Power
Northeastern New York Trading Area

Industry Sector	% of Total Establishments	% of Total MIPS
Discrete Manufacturing	12	17
Process Manufacturing	11	2
Transportation	3	-
Utilities	1	1
Telecommunications	1	-
Media	3	1
Retail Distribution	8	1
Wholesale Distribution	7	1
Banking and Finance	4	1
Insurance	3	1
Health Services	5	2
Education	7	56
Business Services	16	6
Federal Government	2	1
State Government	7	10
Local Government	6	1
Miscellaneous Industries	3	-
Totals	100*	100*

*Percentages may not add exactly to 100 due to rounding.

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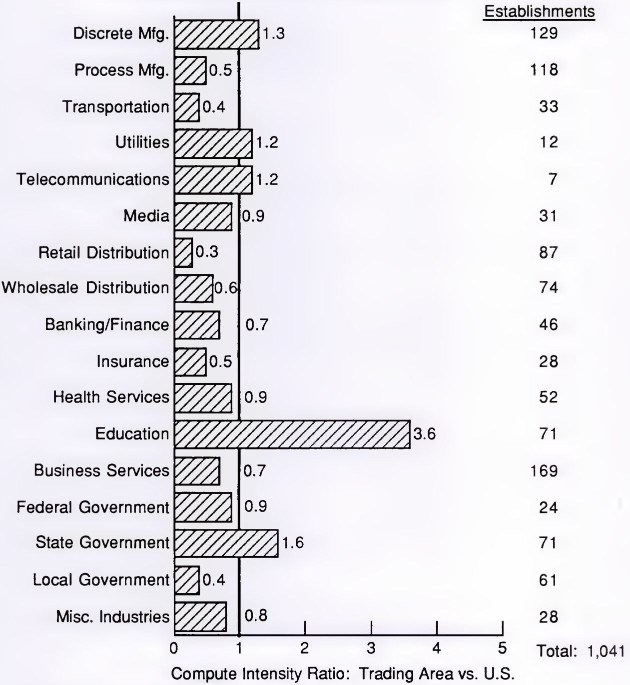
YRINE XI-4b

Area Demographics—Compute Intensity*
Northeastern New York Trading Area



* Definition: Compute Intensity is a measure of the average level of computing resources for an industry sector. It is calculated as follows:

$$\frac{\text{Average \# MIPS}}{\text{Average \# Employees}}$$

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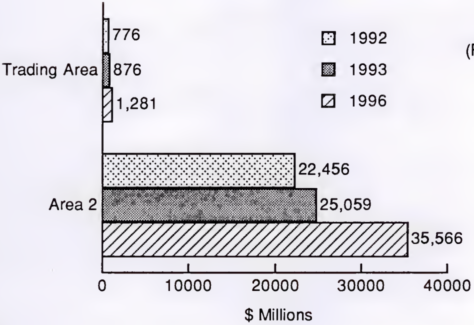
YRINE XI-5

Total Market Forecast—1992, 1993, 1996
Northeastern New York Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Trading Area	13	13
Area 2	12	12

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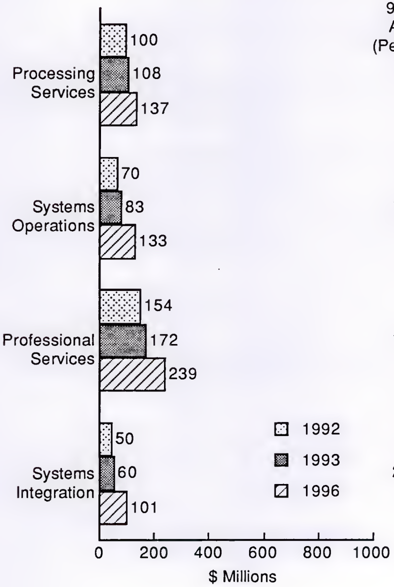
YRINE XI-6a

Market Forecast by Delivery Mode—1992, 1993, 1996
Northeastern New York Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Processing Services	8	8
Systems Operations	19	17
Professional Services	12	12
Systems Integration	20	19

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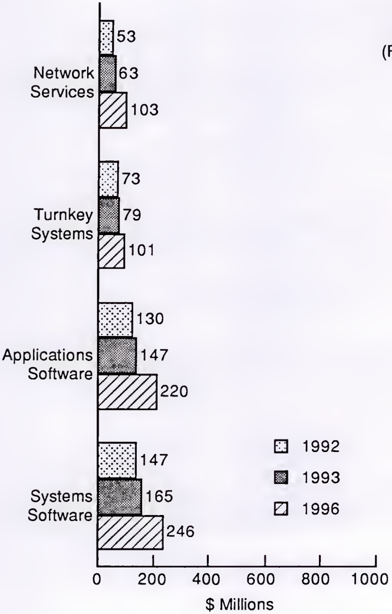
YRINE XI-6b

Market Forecast by Delivery Mode—1992, 1993, 1996
Northeastern New York Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Network Services	19	18
Turnkey Systems	8	8
Applications Software	13	14
Systems Software	12	14

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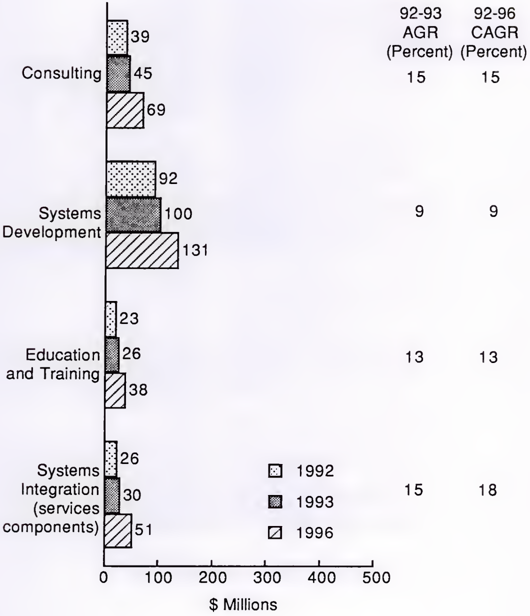
YRINE XI-7

Total Professional Services Market Forecast by Submode—1992, 1993, 1996 Northeastern New York Trading Area



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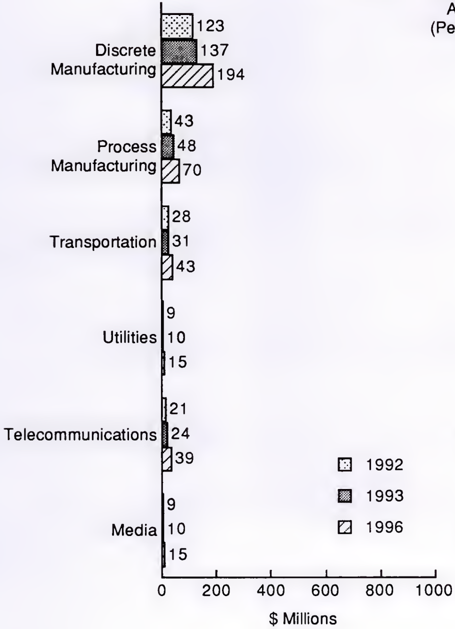
YRINE XI-8a

Market Forecast by Industry Sector—1992, 1993, 1996
Northeastern New York Trading Area



Sector	92-93 AGR (Percent)	92-96 CAGR (Percent)
Discrete Manufacturing	12	12
Process Manufacturing	13	13
Transportation	11	11
Utilities	13	12
Telecommunications	16	17
Media	14	14

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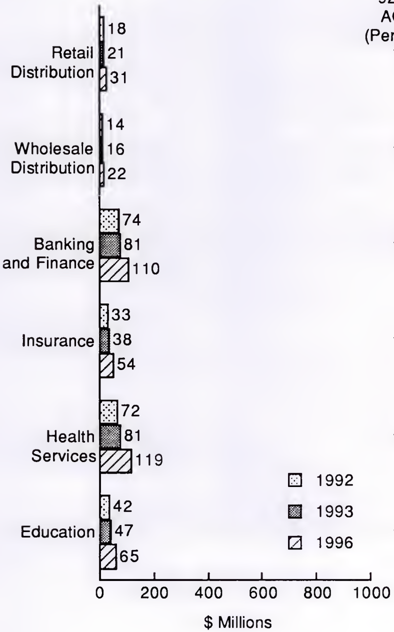
YRINE XI-8b

Market Forecast by Industry Sector—1992, 1993, 1996
Northeastern New York Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Retail Distribution	12	14
Wholesale Distribution	12	12
Banking and Finance	10	10
Insurance	12	13
Health Services	13	14
Education	11	11

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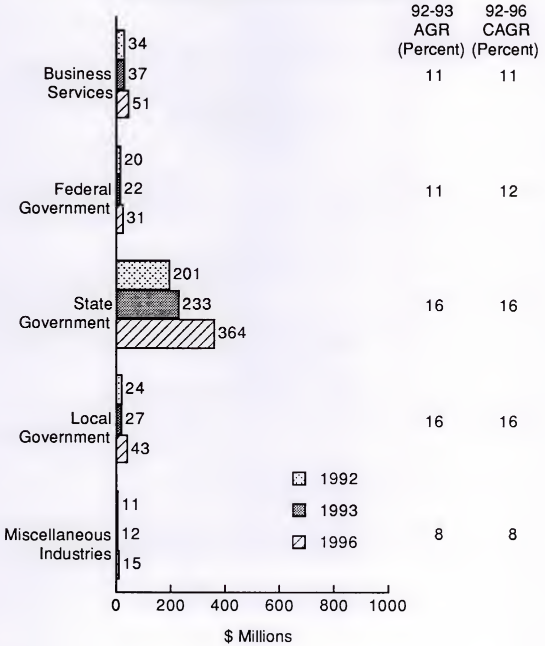
YRINE XI-8c

Market Forecast by Industry Sector—1992, 1993, 1996
Northeastern New York Trading Area



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YRINE XI-9

Total Professional Services* Market Forecast by Industry Sector—Northeastern New York Trading Area

Top Industries by Market Size

Rank	Industry	1992 ($M)	1992-1993 AGR (Percent)	1993 ($M)	1996 ($M)	1992-1996 CAGR (Percent)
1	State Government	81	15	93	143	15
2	Discrete Manufacturing	32	10	35	46	10
3	Process Manufacturing	10	10	11	15	10
4	Local Government	9	15	11	17	15
5	Banking and Finance	9	7	10	12	8
6	Insurance	8	9	9	11	10

* Total Professional Services = Professional Services (consulting, systems development, education and training) + Systems Integration (services components)

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Northeastern NY

TOTAL MARKET --- SIZE: 776

******************** 1992 FORECAST ********************

YEARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
Submode Totals -->	82	5	14	35	26	12	30	36	63	30	40	21	3	24	2	39	92	23	43	10	67	48	31
DELMODE TOTALS ---->			100			73			130		70				50			154		53			147
VERTICAL INDUSTRY MKTS	82	5	14	35	26	12	30	36	63	30	40	21	3	24	2	39	92	23	43	10	67	48	31
Discrete Manufacturing	6	0	1	10	8	3	4	11	9	2	2	5	1	2	0	7	17	4	1	0	12	10	5
Process Manufacturing	4	0	1	1	1	0	1	2	3	1	1	0	0	0	0	3	6	1	7	1	4	3	2
Transportation	12	1	2	1	1	0	1	1	2	1	0	0	0	0	0	0	1	0	2	0	1	1	0
Utilities	1	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	1	0	0
Telecommunications	5	0	1	1	1	0	1	1	1	0	0	0	0	0	0	1	3	1	1	0	2	1	1
Media (Brdcst/Publish)	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1	1	0
Retail Distribution	1	0	0	2	2	1	0	1	1	1	1	1	0	1	0	0	1	0	2	0	1	1	0
Wholesale Distribution	2	0	0	1	1	0	2	1	2	0	0	0	0	0	0	0	1	0	1	1	1	1	0
Banking and Finance	16	1	3	2	2	1	6	4	4	3	6	1	0	1	0	2	5	1	6	0	5	3	2
Insurance	2	0	0	1	1	0	2	1	4	2	2	0	0	1	0	2	4	1	2	0	3	2	2
Health Services	7	0	1	6	4	2	6	5	9	5	5	1	0	1	0	1	2	0	7.	2	3	2	2
Education	3	0	1	2	1	1	2	4	14	1	0	0	0	1	0	0	1	0	4	1	1	1	2
Business Services	9	1	1	2	1	1	1	2	6	0	0	0	0	0	0	0	1	0	5	0	1	1	1
Federal Government	0	0	0	1	0	0	0	0	1	1	2	3	0	2	0	1	2	1	1	1	1	1	1
State Govt	9	1	2	2	2	1	2	1	4	11	18	7	1	10	1	18	42	11	2	1	27	18	11
Local & Misc Govt	1	0	0	0	0	0	0	0	0	1	2	1	0	1	0	2	5	1	0	0	3	2	1
Miscel Industries	1	0	0	2	1	1	0	1	2	0	0	0		0		0	0	0	2	0	0	0	0

Northeastern New York—1992 Forecast Table
YRINE XI-10

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Northeastern NY

TOTAL MARKET ---
SIZE: 876
92-93 GROWTH: 12.9%

1993 FORECAST

EARS/DELIVERY MODES	-- PROC SERVICES -- Trans	Util	Other	- TURNKEY SYSTEMS - Equip	S/W	Prof	- APPLIC S/W PROD - Main	Mini	PC	- SYST OPS - Platf	Applic	-- SYSTEMS INTEGRATION --- Equip	S/W	Prof	Other	-- PROF SERVICES -- Cons	Devel	Ed&Tr	- NET SVCS - EIS	N/A	-- SYST SOFTWARE -- Main	Mini	PC
ubmode Totals -->	87	5	16	38	28	13	32	40	75	34	48	25	4	28	2	45	100	26	50	13	75	53	37
DELMODE TOTALS ---->			108			79			147		83				60			172		63			165
ERTICAL INDUSTRY MKTS	87	5	16	38	28	13	32	40	75	34	48	25	4	28	2	45	100	26	50	13	75	53	37
iscrete Manufacturing	7	0	1	11	8	4	4	12	11	2	3	6	1	3	0	8	18	5	1	0	13	11	6
rocess Manufacturing	4	0	1	2	1	1	1	2	3	1	2	0	0	0	0	3	6	2	8	1	4	3	2
ransportation	13	1	2	1	1	0	1	1	2	1	0	0	0	1	0	0	1	0	3	1	1	1	0
tilities	1	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	1	0	0	0	1	0	0
elecommunications	6	0	1	1	1	0	1	1	1	0	0	0	0	1	0	1	3	1	1	0	2	1	1
edia (Brdcst/Publish)	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	1	1	0
etail Distribution	1	0	0	3	2	1	0	1	2	1	1	1	0	1	0	0	1	0	2	1	1	1	0
holesale Distribution	2	0	0	1	1	0	2	1	2	0	0	0	0	0	0	0	1	0	1	1	1	1	1
anking and Finance	17	1	3	2	2	1	6	5	5	3	7	1	0	1	0	2	5	1	7	0	6	3	2
nsurance	2	0	0	1	1	0	2	1	5	2	3	0	0	1	0	2	5	1	2	0	4	2	2
ealth Services	7	0	1	6	4	2	7	5	11	6	6	1	0	2	0	1	2	0	8	3	4	2	2
ducation	3	0	1	2	1	1	2	4	16	1	0	1	0	1	0	0	1	0	5	1	1	1	3
usiness Services	9	1	2	2	2	1	1	2	7	0	0	0	0	1	0	0	1	0	6	0	1	1	1
ederal Government	0	0	0	1	0	0	0	0	1	1	2	3	0	3	0	1	2	1	1	2	1	1	1
tate Govt	10	1	2	3	2	1	2	1	4	13	22	8	1	12	1	21	47	12	3	2	31	21	13
ocal & Misc Govt	1	0	0	0	0	0	0	0	1	2	3	1	0	1	0	2	6	1	0	0	4	2	2
iscel Industries	1	0	0	2	1	1	0	1	2	0	0	0		0		0	0	0	2	0	0	0	0

Northeastern New York—1993 Forecast Table

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Northeastern NY

TOTAL MARKET ---
SIZE: 1,281
92-96 GROWTH: 13.4%

1996 FORECAST

EARS/DELIVERY MODES	-- PROC SERVICES -- Trans	Util	Other	- TURNKEY SYSTEMS - Equip	S/W	Prof	- APPLIC S/W PROD - Main	Mini	PC	- SYST OPS - Platf	Applic
ubmode Totals -->	107	6	24	48	36	16	38	52	129	48	85
DELMODE TOTALS ---->			137			101			220		133
ERTICAL INDUSTRY MKTS	107	6	24	48	36	16	38	52	129	48	85
iscrete Manufacturing	8	0	2	15	11	5	5	16	20	3	5
rocess Manufacturing	5	0	1	2	2	1	1	2	6	2	3
ransportation	17	1	4	1	1	0	1	1	3	1	1
tilities	2	0	0	0	0	0	0	1	2	0	0
elecommunications	8	0	2	2	1	1	2	1	2	0	0
edia (Brdcst/Publish)	2	0	0	1	1	0	1	1	1	0	0
etail Distribution	2	0	0	3	2	1	1	2	3	1	2
holesale Distribution	2	0	0	1	1	0	2	1	4	0	0
anking and Finance	21	1	5	3	2	1	8	6	6	5	12
nsurance	3	0	1	1	1	0	3	1	10	3	5
ealth Services	8	0	2	7	5	2	8	7	23	8	11
ducation	4	0	1	2	2	1	2	6	23	1	1
usiness Services	9	1	2	3	2	1	1	2	11	0	1
ederal Government	0	0	0	1	1	0	0	1	3	2	2
tate Govt	14	1	3	4	3	1	3	2	8	18	38
ocal & Misc Govt	2	0	0	0	0	0	0	0	1	2	4
iscel Industries	1	0	0	2	2	1	0	1	3	0	0

EARS/DELIVERY MODES	-- SYSTEMS INTEGRATION --- Equip	S/W	Prof	Other	-- PROF SERVICES -- Cons	Devel	Ed&Tr	- NET SVCS - EIS	N/A	-- SYST SOFTWARE -- Main	Mini	PC
ubmode Totals -->	43	7	48	3	69	131	38	80	23	105	75	66
DELMODE TOTALS ---->				101			239		103			246
ERTICAL INDUSTRY MKTS	43	7	48	3	69	131	38	80	23	105	75	66
iscrete Manufacturing	11	1	5	1	12	21	7	1	1	17	14	11
rocess Manufacturing	1	0	1	0	4	8	2	13	2	6	4	4
ransportation	1	0	1	0	0	1	0	5	1	1	1	1
tilities	1	0	2	0	1	1	0	0	0	1	1	1
elecommunications	0	0	1	0	2	4	1	1	0	4	2	2
edia (Brdcst/Publish)	1	0	0	0	1	2	1	0	0	1	1	1
etail Distribution	1	0	2	0	0	1	0	4	1	1	1	1
holesale Distribution	0	0	1	0	0	1	0	1	2	1	1	1
anking and Finance	1	0	2	0	3	6	2	11	1	7	4	3
nsurance	0	0	1	0	3	5	2	3	0	5	3	4
ealth Services	2	0	2	0	1	2	1	12	6	4	3	5
ducation	1	0	2	0	1	1	0	8	2	1	2	4
usiness Services	0	0	1	0	0	1	0	10	0	1	1	2
ederal Government	5	1	4	0	1	3	0	1	2	2	1	1
tate Govt	15	2	20	1	35	67	19	5	4	47	32	23
ocal & Misc Govt	2	0	2	0	4	8	2	1	0	6	4	3
iscel Industries	0	0	0		0	1	0	3	0	0	1	1

Northeastern New York—1996 Forecast Table
YRINE XI-12

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XII

Central and Western New York Trading Area

XII

Central and Western New York Trading Area

YRINE XII-1a

Geographic Description
Central and Western New York Trading Area

States	Counties		
New York	Allegany Broome Cattaraugus Cayuga Chautauqua Chemung Chenago Cortland Delaware Erie Franklin	Genesee Herkimer Jefferson Lewis Livingston Madison Monroe Niagara Oneida Onondaga Ontario	Orleans Oswego Otsego Schuyler Seneca St. Lawrence Steuben Tioga Tompkins Wayne Wyoming Yates
Pennsylvania	Bradford Cameron Elk	Forest McKean Potter	Susquehanna Tioga Warren

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YRINE XII-1b

Industry Description
Central and Western New York Trading Area

Significant Industries	
Industry Sector	1992 Information Services Market Forecast ($M)
Discrete Manufacturing	651
Process Manufacturing	142
Transportation	57
Utilities	47
Telecommunications	37
Media	11
Retail Distribution	61
Wholesale Distribution	48
Banking and Finance	258
Insurance	97
Health Services	154
Education	117
Business Services	158
Federal Government	31
State Government	33
Local Government	92
Miscellaneous Industries	19
Total	2,014*

* Industry sector forecast numbers may not add exactly to trading area total due to rounding.

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Area Demographics—Revenues
Central and Western New York Trading Area

Revenues ($ Millions)	Percent of Total Establishments*
<10	47
10-49	35
50-99	9
100-249	6
250-499	2
500-999	1
>1,000	0
Total	100 **

*Total establishments for trading area: 2,648

**Percentages may not add exactly to 100 due to rounding.

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YRINE XII-3

Area Demographics—Employees
Central and Western New York Trading Area

Employees	Percent of Total Establishments*
1-99	49
100-499	37
500-999	8
1,000-4,999	5
>5,000	0
Total	100 **

*Total establishments for trading area: 2,648

**Percentages may not add exactly to 100 due to rounding.

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YRINE XII-4a

Area Demographics—Computing Power Central and Western New York Trading Area

Industry Sector	% of Total Establishments	% of Total MIPS
Discrete Manufacturing	18	38
Process Manufacturing	13	3
Transportation	3	-
Utilities	2	2
Telecommunications	-	-
Media	2	-
Retail Distribution	8	1
Wholesale Distribution	8	1
Banking and Finance	4	1
Insurance	3	1
Health Services	6	2
Education	6	40
Business Services	16	9
Federal Government	2	-
State Government	1	-
Local Government	4	1
Miscellaneous Industries	3	-
Totals	100*	100*

*Percentages may not add exactly to 100 due to rounding.

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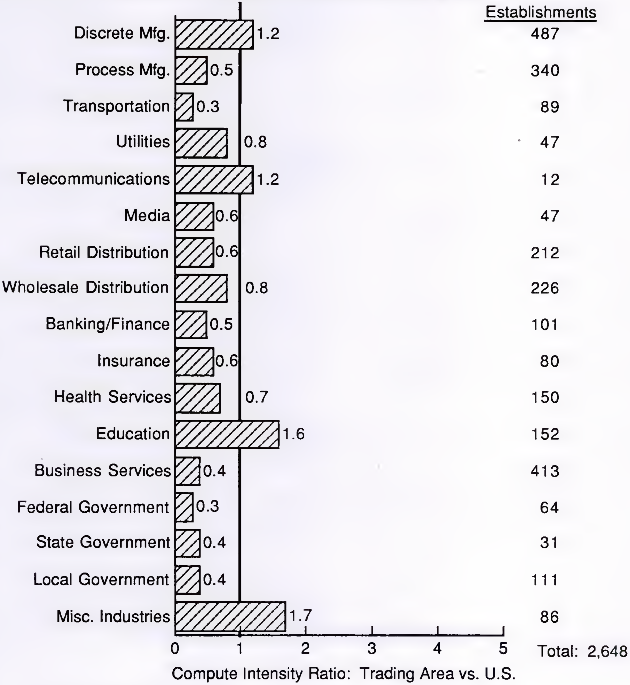
YRINE XII-4b

Area Demographics—Compute Intensity*
Central and Western New York Trading Area



* Definition: Compute Intensity is a measure of the average level of computing resources for an industry sector. It is calculated as follows:

$$\frac{\text{Average \# MIPS}}{\text{Average \# Employees}}$$

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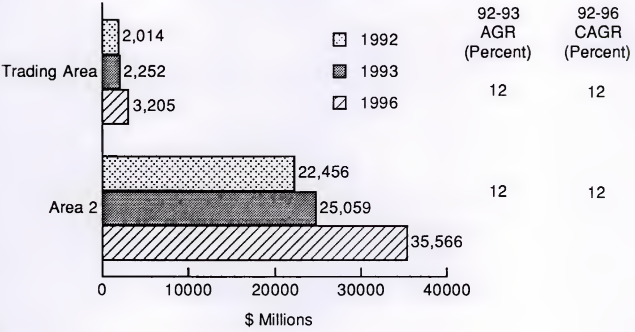
Total Market Forecast—1992, 1993, 1996
Central and Western New York Trading Area



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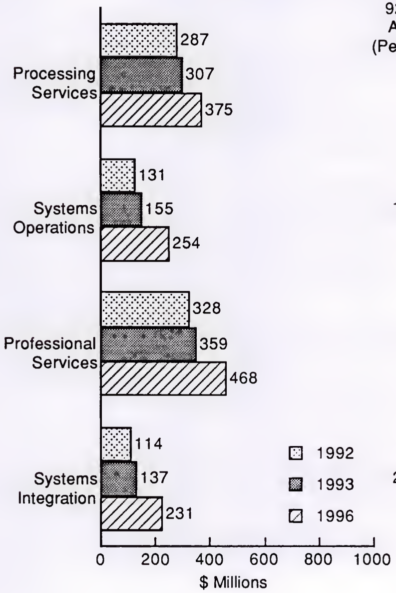
YRINE XII-6a

Market Forecast by Delivery Mode—1992, 1993, 1996
Central and Western New York Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Processing Services	7	7
Systems Operations	18	18
Professional Services	9	9
Systems Integration	20	19

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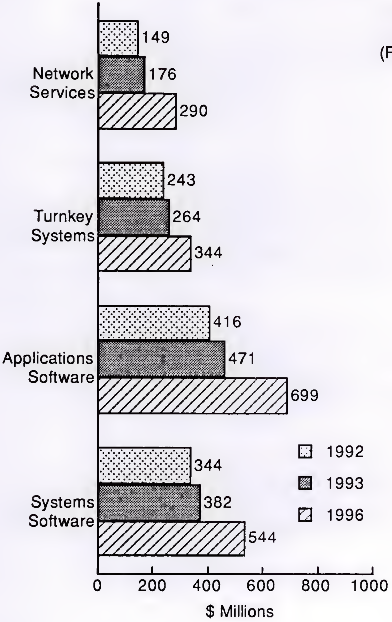
YRINE XII-6b

Market Forecast by Delivery Mode—1992, 1993, 1996
Central and Western New York Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Network Services	18	18
Turnkey Systems	9	9
Applications Software	13	14
Systems Software	11	12

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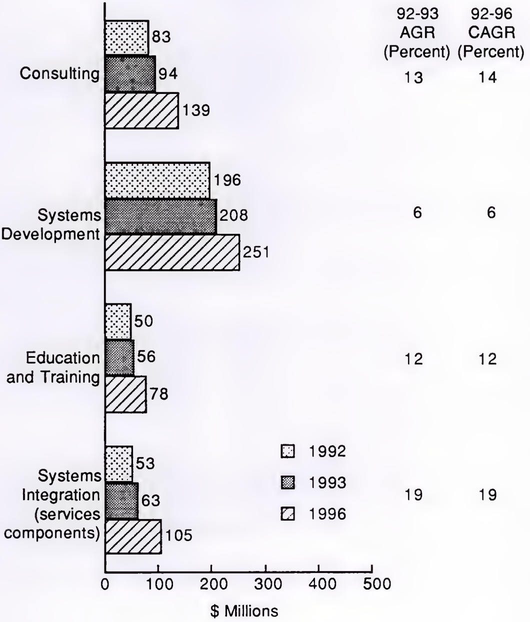
YRINE XII-7

Total Professional Services Market Forecast by Submode—1992, 1993, 1996 Central and Western New York Trading Area



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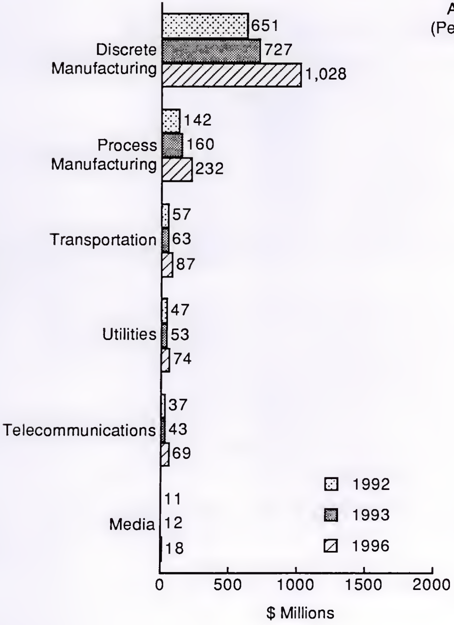
YRINE XII-8a

Market Forecast by Industry Sector—1992, 1993, 1996
Central and Western New York Trading Area



Sector	92-93 AGR (Percent)	92-96 CAGR (Percent)
Discrete Manufacturing	12	12
Process Manufacturing	13	13
Transportation	11	11
Utilities	13	12
Telecommunications	16	17
Media	14	14

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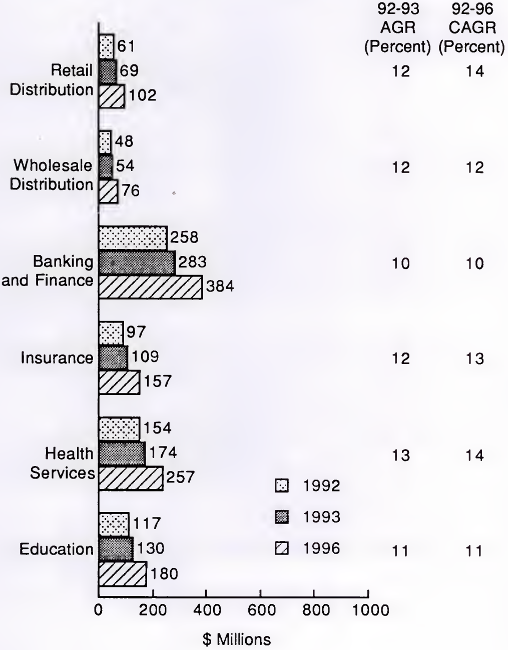
YRINE XII-8b

Market Forecast by Industry Sector—1992, 1993, 1996
Central and Western New York Trading Area



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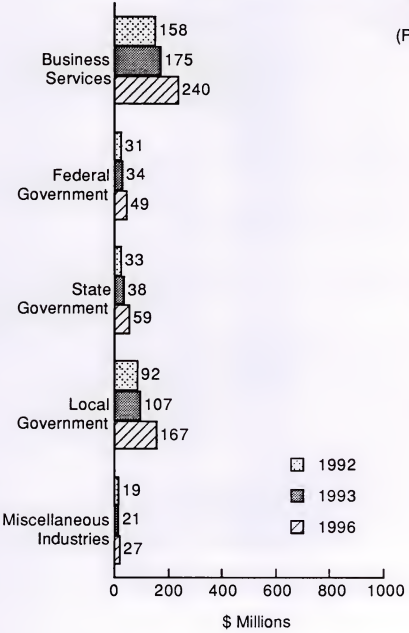
YRINE XII-8c

Market Forecast by Industry Sector—1992, 1993, 1996
Central and Western New York Trading Area



	92-93 AGR (Percent)	92-96 CAGR (Percent)
Business Services	11	11
Federal Government	11	12
State Government	16	16
Local Government	16	16
Miscellaneous Industries	8	8

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YRINE XII-9

Total Professional Services* Market Forecast by Industry Sector—Central and Western New York Trading Area

Top Industries by Market Size

Rank	Industry	1992 ($M)	1992-1993 AGR (Percent)	1993 ($M)	1996 ($M)	1992-1996 CAGR (Percent)
1	Discrete Manufacturing	167	10	184	243	10
2	Local Government	37	15	43	65	15
3	Process Manufacturing	34	10	38	50	10
4	Banking and Finance	31	7	34	42	8
5	Insurance	23	15	25	33	10
6	State Government	13	15	15	23	15
7	Utilities	13	12	14	19	10

* Total Professional Services = Professional Services (consulting, systems development, education and training) + Systems Integration (services components)

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Central & Western NY

TOTAL MARKET ---
SIZE: 2,014

** 1992 FORECAST **

YEARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -	
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic
Submode Totals -->	234	14	39	117	88	39	90	128	197	58	73
DELMODE TOTALS ---->			287			243			416		131
VERTICAL INDUSTRY MKTS	234	14	39	117	88	39	90	128	197	58	73
Discrete Manufacturing	34	2	6	54	40	18	21	60	45	10	12
Process Manufacturing	13	1	2	5	4	2	4	5	8	4	4
Transportation	25	2	4	2	1	1	2	2	3	1	0
Utilities	7	0	1	1	1	0	2	3	5	0	0
Telecommunications	9	1	1	2	1	1	2	1	2	0	0
Media (Brdcst/Publish)	1	0	0	1	1	0	0	1	1	0	0
Retail Distribution	4	0	1	8	6	3	2	4	5	2	2
Wholesale Distribution	5	0	1	4	3	1	5	3	5	1	0
Banking and Finance	57	3	9	7	5	2	21	15	16	10	19
Insurance	6	0	1	2	2	1	7	3	13	6	7
Health Services	14	1	2	12	9	4	13	11	19	11	10
Education	9	1	2	5	4	2	5	11	40	3	1
Business Services	41	3	7	9	7	3	4	7	28	1	1
Federal Government	1	0	0	1	1	0	0	1	2	2	3
State Govt	2	0	0	0	0	0	0	0	1	2	3
Local & Misc Govt	4	0	1	1	1	0	1	1	2	5	8
Miscel Industries	2	0	0	3	2	1	0	2	3	0	0

YEARS/DELIVERY MODES	-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
Submode Totals -->	53	9	49	4	83	196	50	125	24	153	116	76
DELMODE TOTALS ---->				114			328		149			344
VERTICAL INDUSTRY MKTS	53	9	49	4	83	196	50	125	24	153	116	76
Discrete Manufacturing	28	3	12	1	39	91	24	3	2	64	54	29
Process Manufacturing	1	0	1	0	8	20	5	23	2	14	10	6
Transportation	1	0	1	0	1	1	0	5	1	2	1	1
Utilities	5	1	6	0	2	3	1	1	0	3	2	2
Telecommunications	0	0	1	0	2	5	1	1	0	4	2	1
Media (Brdcst/Publish)	0	0	0	0	1	1	0	0	0	1	1	0
Retail Distribution	2	0	3	0	1	3	1	6	2	2	2	1
Wholesale Distribution	1	0	1	0	1	3	1	2	3	4	2	1
Banking and Finance	2	0	3	0	7	17	4	21	1	18	11	6
Insurance	1	0	2	0	5	12	3	5	1	10	6	5
Health Services	2	1	3	0	2	4	1	14	5	7	4	4
Education	1	0	2	0	1	2	0	11	3	3	4	6
Business Services	1	0	2	0	2	4	1	26	0	4	3	5
Federal Government	4	1	4	0	1	3	1	2	2	2	1	1
State Govt	1	0	2	0	3	7	2	0	0	4	3	2
Local & Misc Govt	3	0	4	0	8	19	5	1	1	12	8	5
Miscel Industries	0		0		0	1	0	3	0	1	1	1

Central and Western New York—1992 Forecast Table
YRINE XII-10

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Central & Western NY

TOTAL MARKET ---
SIZE: 2,252
92-93 GROWTH: 11.8%

1993 FORECAST

EARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
ubmode Totals -->	248	15	44	127	95	42	96	140	235	67	88	65	10	58	5	94	208	56	146	29	167	126	89
DELMODE TOTALS ---->			307			264			471		155				137			359		176			382
VERTICAL INDUSTRY MKTS	248	15	44	127	95	42	96	140	235	67	88	65	10	58	5	94	208	56	146	29	167	126	89
iscrete Manufacturing	36	2	6	59	44	20	22	65	56	12	14	34	4	15	2	45	96	27	4	2	69	59	33
rocess Manufacturing	14	1	2	5	4	2	4	6	10	4	5	1	0	1	0	10	21	6	27	3	15	11	7
ransportation	27	2	5	2	1	1	2	2	4	2	1	1	0	1	0	1	2	0	6	1	2	1	1
tilities	8	0	1	1	1	0	2	3	6	1	0	5	1	7	1	2	3	1	1	0	3	2	2
elecommunications	10	1	2	2	2	1	2	1	2	0	0	1	0	1	0	2	6	1	2	0	4	3	2
edia (Brdcst/Publish)	2	0	0	1	1	0	0	1	1	0	0	0	0	0	0	1	2	0	0	0	1	1	1
etail Distribution	5	0	1	9	6	3	2	5	6	3	3	3	1	4	0	1	3	1	7	2	2	2	2
holesale Distribution	6	0	1	4	3	1	5	3	7	1	1	1	0	2	0	1	3	1	2	4	4	2	2
anking and Finance	61	4	11	8	6	3	23	16	17	11	23	2	0	3	0	8	18	4	25	2	19	12	7
nsurance	7	0	1	2	2	1	7	3	16	7	8	1	0	2	0	6	13	3	5	1	11	6	6
ealth Services	15	1	3	13	10	4	14	12	24	13	13	2	1	3	0	2	4	1	16	6	8	5	5
ducation	9	1	2	6	4	2	5	12	45	3	1	2	0	3	0	1	2	1	13	4	3	4	7
usiness Services	41	3	7	10	8	3	4	8	33	1	2	1	1	3	0	2	4	1	30	1	4	4	6
ederal Government	1	0	0	1	1	0	0	1	2	2	3	5	1	4	0	1	3	1	2	2	2	1	1
tate Govt	2	0	0	0	0	0	0	0	1	2	4	1	0	2	0	3	8	2	0	0	5	3	2
ocal & Misc Govt	5	0	1	1	1	0	1	1	2	6	10	4	1	5	0	10	22	6	1	1	14	10	6
iscel Industries	2	0	0	3	2	1	0	2	4	0	0	0		0		0	1	0	3	0	1	1	1

Central and Western New York—1993 Forecast Table

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User Expenditure Fcst
Mkt Sector, 1991-1996
($ Millions)
12-Mar-92
11:16 PM

IBM Northeast Region Custom Market Forecast: Media/Publishing Industry split out from Telecomm and Discrete Manufacturing
Central & Western NY

TOTAL MARKET ---
SIZE: 3,205
92-96 GROWTH: 12.3%

************ 1996 FORECAST ************

EARS/DELIVERY MODES	-- PROC SERVICES --			- TURNKEY SYSTEMS -			- APPLIC S/W PROD -			- SYST OPS -		-- SYSTEMS INTEGRATION ---				-- PROF SERVICES --			- NET SVCS -		-- SYST SOFTWARE --		
	Trans	Util	Other	Equip	S/W	Prof	Main	Mini	PC	Platf	Applic	Equip	S/W	Prof	Other	Cons	Devel	Ed&Tr	EIS	N/A	Main	Mini	PC
ubmode Totals -->	293	17	65	165	124	55	114	185	401	95	159	109	17	97	8	139	251	78	235	55	221	167	155
DELMODE TOTALS ---->			375			344			699		254				231			468		290			544
ERTICAL INDUSTRY MKTS	293	17	65	165	124	55	114	185	401	95	159	109	17	97	8	139	251	78	235	55	221	167	155
iscrete Manufacturing	40	2	9	81	60	27	26	87	106	17	28	60	7	27	3	66	110	37	8	5	91	77	57
rocess Manufacturing	15	1	3	8	6	3	5	8	18	6	10	2	0	3	0	14	25	8	43	7	20	14	12
ransportation	34	2	8	2	2	1	3	2	6	2	1	1	0	2	0	1	2	0	10	2	2	1	2
tilities	11	1	2	2	2	1	2	4	9	1	0	7	2	10	1	3	3	2	2	0	4	3	3
elecommunications	15	1	3	3	2	1	3	2	4	0	1	1	0	2	0	3	8	2	3	0	6	4	3
edia (Brdcst/Publish)	2	0	0	1	1	0	1	1	1	0	0	1	0	0	0	1	2	1	0	0	2	1	1
etail Distribution	6	0	1	10	8	3	2	6	10	5	6	5	1	7	1	2	3	1	12	4	3	3	3
holesale Distribution	7	0	2	5	4	2	6	4	12	1	1	1	0	2	0	2	4	1	3	8	5	3	3
anking and Finance	74	4	16	10	7	3	29	21	22	16	41	5	1	6	1	10	20	6	40	3	25	15	10
nsurance	8	0	2	3	2	1	8	3	30	9	14	1	1	4	0	8	15	5	9	1	14	8	11
ealth Services	17	1	4	14	11	5	16	15	50	18	24	3	1	5	0	2	5	1	25	12	10	6	11
ducation	10	1	2	7	5	2	5	16	64	4	2	3	1	4	0	1	3	1	22	6	4	5	12
usiness Services	43	2	9	13	10	4	4	10	54	2	3	2	1	5	0	2	5	1	48	1	5	5	11
ederal Government	1	0	0	1	1	0	1	1	4	2	4	7	1	7	1	1	4	1	2	3	3	2	2
tate Govt	2	0	1	1	0	0	0	0	1	3	6	2	0	3	0	6	11	3	1	1	8	5	4
ocal & Misc Govt	7	0	1	2	1	1	1	1	4	8	17	7	1	9	1	16	31	9	2	2	22	14	11
iscel Industries	2	0	0	4	3	1	0	2	5	0	0	0	0	0		0	1	0	5	0	1	1	1

Central and Western New York—1996 Forecast Table

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XIII

Utilities Industry Sector

XIII

Utilities Industry Sector

Outline

A. Summary and Conclusions

Objectives

- Survey utilities and telecommunications companies concerning their use of outside services firms.
- Use the results to refine the market growth forecasts for Area 2 and a few of the trading areas.

Survey Overview

- Of 29 companies in the sample only 8 would respond.
- None of the 6 telecommunications companies would provide a response.
- Respondents were gas and electric companies.

Overview of Findings

- Utilities represents one of the smaller industry sectors for information services; however, much of the expenditure is consolidated in a few larger (but not very large) companies.
- The information systems function in utilities has typically been conservative, centralized and concerned with the customer and accounting-related information processes.
- Engineering and operations requirements have often been fulfilled outside the normal IS processes.

Observations

- Most of the responses parallel the findings of INPUT's research in the utilities sector for the entire U.S.
- Responses seem to indicate increasing interest in using outside services firms—primarily for consulting services
- Interest in processing services and systems operations is very limited.
- Where professional services are used/considered it is consulting versus total project services (systems integration).
- The numerous mentions of need for outside services systems support suggest a possible change in attitude toward information services firms.
  - Re-engineering business processes
  - Developing strategic systems or architectural plans
  - Developing new applications
- Vendor references concentrated on Big 6 professional services groups.
- There was significant indication of user involvement in specific IS decisions, in particular applications related.

Conclusions

- The findings in the Area 2 interviews do not suggest that opportunities in utilities are different from the national norm.
- The forecast numbers have not been revised by trading area based on this survey.
- Perhaps this conservative industry is becoming ready to look outside for systems assistance. This starts with consulting services, not larger-scale service offerings.
- A significant portion of the IS requirement is within engineering and operations—the buyer is typically not IS.

B
Respondent Findings

1. Demographics

a. Sample and Participants

Type of Utility	Number of Companies Sample	Number of Companies Participants
Electric	11	2
Gas	8	4
Electric and Gas	3	1
Water/Telephone/Electric	1	1
Telecommunications		
• Telephone	5	0
• Other	1	0
Totals:	29	8

Comments

- Both sample and participants have a high proportion of gas companies compared to the national utility population, which includes slightly more than two electric utilities for every gas utility.

- Respondents—all Corporate IS Management

  - Director-level 4
  - VP / Assistant VP 2
  - Manager-level 2

Comments

- Sample included 29 companies—of 21 not participating, 7 declined, 3 missed multiple appointments and others did not respond to repeated inquiries.

- All respondents were in information systems; no interviews were conducted with engineering and operations management, who typically control significant IT expenditures.

- Two of the 8 responding organizations are believed to be non-IBM shops.

1. Demographics

b. Company Size and Computing Resources

- Annual Revenue - *all over $50 Million*

- $1-10B	1
- $500-999M	2
- $100-499M	3
- $50M-99M	2

- Employees - *largely in the 1,000-5,000 range*

- 1,000-5000	5
- 500-999	2
- Fewer than 500	1

- Computing Environment - heavily mainframe/centralized
  - 7 sites said mainframe is the primary platform
  - 1 mixed environment—mainframe, dedicated minis and PCs
  - 1 site noted planned move to distributed environment

2. Information Systems Budgets

a. 1991 Budgets and 1992 Plans

- 1991 IS Budgets - range from $1.5-15.1M
  - Average: $6.8M
- Budget Responsibility - highly centralized in IS
  - 7 of 8 sites said 100% IS control
  - 1 site said 95% IS control, 5% user departments
- 1992 IS Budget Plans - mostly conservative
  - Average for 7 of 8 sites: 4.2% increase
  - Range for these 7 sites: 10% decrease - 30% increase

Comments

- INPUT's annual industry report for the utilities sector shows no growth in IS budgets for 1990 through 1992.
- Engineering and operations traditionally have independent IT budgets.
- Total IT expenditures can equal 1.5 to 2 times the IS budget.

2. Information Systems Budgets

b. Breakdown by Expenditure Categories

Budget Category	Average Pct. of Budget 1991	1992	Avg. Pct. Change 1991 vs. 1992
Personnel	44	44	3
Hardware/Equipment	23	23	9
Telecommunications	2	2	0
Software	12	12	1
Outside Services	11	12	2
Other	8	7	0
Total	100	100	

Comments

- **Personnel and Hardware:** Together comprise over 65% of budgets on average. Slight-to-moderate spending increases planned for most sites.
- **Telecommunications:** Less than 2% of budget on average, no sites planned changes. Utilities IS budgets are typically lower than those of other industries due to geographical restrictions.
- **Software:** Currently approximately 12% of budgets on average—sites ranged from 5%-25%. Very few increases planned—sites planning increases ranged from 0%-5%.
- **Outside Services:** Biggest variations between sites were in this budget category (see Outside Services Detail).

2. Information Systems Budgets

c. Outside Services Detail

Interview Site	——Percent of Budget—— 1991	1992	1993/1994	Pct. Change 1991 vs. 1992
1	1	5	5	0
2	10	10	12.5	0
3	27	15	15	-50
4	0	0	unknown	0
5	40	50	50	0
6	5	5	5	0
7	2	2	2	0
8	5	7	8.5	280
Averages:	**11.3**	**11.8**	**11.8**	**29.1**

Comments

- **Site 1:** Spends heavily on internal personnel (58%-68%) - very little on outside services.
- **Site 3:** 1992 budget reflects shift from contract development to packaged software and internal staff.
- **Site 4:** Currently no outside services, planning a customer information system project (cost unknown) in 1993 or 1994.
- **Site 5:** Services spending high possibly due to terminology - this site has no separate hardware or software allocation.
- **Site 6:** Similar IS budget breakdown to Site 1 - heavy on internal personnel (65%), light on outside services.
- **Site 8:** Planning to almost triple outside services; however, they represent a relatively small percent of total IS budget.

3. Outside Services and Software Products

a. Budget Breakdown by Services Mode

Services Mode	Average Pct. of Services Budget Cos. Responding	Expenditures, 1992-97 No. of Respondents Inc.	Dec.	No Chg.
Systems Integration	5	1	1	5
Systems Operations	0	0	0	8
Consulting Services	16	3	0	5
Software Development	22	3	1	4
Applications Support	1	0	0	8
Education and Training	17	3	0	5
Network Services	1	0	0	7
Processing Services	0	0	0	6
Applications Software	30	2	0	6
Turnkey Systems	3	0	0	8
Systems Software	5	1	0	7

Comments

- Percentages do not add to 100 because of varying number of respondents.
- Largest budget percentages are for applications software (37.5%), software development (27.5%), and consulting services (19.5%).
- The majority of respondents expected spending to remain flat in every category. 25%-30% of respondents thought increases would occur in software development, education and training, and applications software.
- Outside services and software budgets together represent approximately 25% of total IS budgets.

3. Outside Services and Software Products

b. Project Expenditures Planned—1992

Project	Number of Mentions	Type of Service
Customer Support Systems	4	Systems Integration, Consulting, Systems Development, Software Products
Financial/Accounting Systems	2	Systems Development Applications Support
Work Management System	1	Project Management
Auto Map/Facilities Management	1	Consulting Services
Network Management	1	Consulting Services
Meter Inventory	1	Consulting Services
Gas Management	1	Consulting Services
Mobile Data	1	Consulting Services
IS Planning	1	Consulting Services
Outsourcing IS training	1	Education & Training
Marketing System	1	Consulting

Comments

- Responses reflect both central and engineering/operations requirements.
- Numerous mentions of consulting services requirements suggest potential for systems integration or systems development opportunities. Also may reflect tradition of using experts to specify and internal resources to develop.

3. Outside Services and Software Products

c. User Influence

Type of Service	Decision Maker (No. Respondents) Joint User/IS	IS Alone
Consulting Services	5	3
Systems Development	4	4
Applications Software	4	4
Turnkey Systems	4	3
Applications Support	4	4
Processing Services	3	4
Systems Integration	2	6
Systems Operations	2	6
Education and Training	2	6
Network Services	2	5
Systems Software	2	6

User funding for outside services or products

	No. of Respondents
Always	0
Most of the time	1
Often	0
Occasionally	4
Never	3

Comments

- User role believed somewhat less strong than in other INPUT regional and industry sector studies
- Joint user/IS vendor selection in approximately 50% of sites for applications-oriented services
- User funding at least part of the time at 5 of 8 sites

3. Outside Services and Software Products

d. Development Approaches—1992

	Usage	
Development Approach	Average Pct.	Range
Internal Staff	57	15-80
Packaged Software	21	0-75
Outside Services	16	0-60
End-User Personnel	6	0-10

Comments

- Respondents were asked to estimate what percentage of all 1992 applications development activities would be performed using each of the approaches above.
- Internal Staff: Role varies from predominant in-house developers to supplementing applications development provided by packaged software and outside services firms.
- Packaged Software: Use varies from none to extensive. Sites using packages little or not at all utilize internal staff most heavily.
- Outside Services: Again, a wide range of levels of deployment. Used most heavily where packaged software utilization is low.
- End Users: Role in systems development relatively small, but present in 5 of 8 sites.

3. Outside Services and Software Products

e. Systems Requirements, 1992-1995

Systems Activity	Need	Out
Re-engineering Business Processes	8	6
Developing Strategic Systems or Architectural Plans	7	5
Developing New Applications	7	5
Integrating or Upgrading Networks	7	3
Integrating Existing Applications	6	2
Downsizing Existing Applications	5	3
Re-engineering Existing Applications	5	3
Migrating to New Data Base Environments	5	2
Systems Management	5	0

Comments

- Respondents indicated if they had a need for each type of systems activity over the next three years (NEED), and whether they were likely to look for outside services and software to assist in each area (OUT).
- In general, level of interest in outside services is higher than in other utilities studies.
- Re-engineering business processes offers significant opportunity for outside services firms.
- Frequency of outside help for systems architecture and applications development suggests significant level of new investment and aging application portfolio.

4. Vendor Selection

a. Leading Vendors by Delivery Mode

Summary
- Greatest number of mentions were in consulting, led by Big 6
- Few multiple mentions, but each delivery mode dominated by different types of firms

Systems Integration
- Only 2 sites use or plan SI services
- Andersen the only player mentioned
- Industry knowledge and resources reasons for selection

Consulting
- 5 of 9 mentions are Big 6
- Andersen, CSC each mentioned twice
- Industry knowledge, reputation, and methodology are key

Systems Development
- Mostly large services firms and Big 6
- Skills, methodology, and relationship/reputation are important

Applications Support
- Mostly product companies
- Product knowledge is key

Education and Training
- Product providers and training specialty firms
- Price a key factor here, not mentioned elsewhere

Network and Processing Services
- Product vendors mentioned, not services vendors

Applications Software
- Only cross-industry financial systems vendors mentioned
- No industry-specific vendor or product mentions

Turnkey Systems
- No mentions

4. Vendor Selection

b. Leading Vendors by Delivery Mode—Detail

Systems Integration
- Andersen Consulting (2): industry knowledge, resources

Consulting Services
- Andersen Consulting (2): industry knowledge, reputation
- CSC Partners (2): strong relationship, development methodology
- Canyon Group: reputation
- Ernst and Young: industry knowledge
- GE Consulting: availability and skills of personnel
- Peat Marwick: internal auditors
- Price Waterhouse: methodology
- Sewell Associates: regional reputation

Systems Development
- Andersen Consulting: expertise
- CSC Partners: relationship
- GE Consulting: availability and skills of personnel
- Price Waterhouse: methodology
- W5: reputation, quality work

Applications Support:
- Computer Associates: developed the software
- local computer supplier: good experience
- Price Waterhouse: product knowledge
- Unisys: product knowledge
- Walker Interactive: developed the software

Education and Training
- Computer Associates (Online Software): availability of resources
- Computron: price, quality training
- IBM: product knowledge
- local firm: PC training capabilities
- SRA: price (video services)
- Unisys (2): hardware supplier, product knowledge
- W5: reputation, quality
- Woillette Associates: recommendation

4. Vendor Selection

b. Leading Vendors by Delivery Mode—Detail

Network Services
- DEC: breadth of knowledge
- IBM: product knowledge
- Novell: expertise
- SSSI: recommendation

Applications Software
- Computer Associates (2): bought out predecessor
- Lawson Associates: financial software
- Walker Interactive

Comments

- Respondents were asked to name vendors they have used or would consider using, and to comment on reasons for considering these vendors. Number of mentions follows vendor name in parentheses.

4. Vendor Selection

c. Selection Factors by Delivery Mode

	Selection Factors				
	Price	Reputation	Industry Knowledge	Technical Expertise	Functional Capability
Systems Integration	2		1	1	
Systems Operations	2			1	
Consulting	2		1	1	
Systems Development	2	2	1	1	
Education & Training	2			1	
Network Services	2			1	
Processing Services	2			1	
Applications Software	2				1
Turnkey Systems	2				1

Comments

- The primary and secondary selection factors most frequently mentioned for each delivery mode are shown in the matrix above.
- 1 = primary factor, 2 = secondary factor
- Noticeable lack of response for processing services, turnkey systems and systems operations

4. Vendor Selection

d. Consulting Services—Key Vendor Characteristics

Vendor Characteristic	Average Rating
Experience providing the specific service	5.0
Quality of service	4.9
General reputation of the vendor	4.1
Contract terms and conditions	4.0
Use of standard methodology	3.5
Experience full range of consulting services	2.9
Geographic coverage	1.9

Comments

- Respondents rated the importance of the vendor characteristics on a scale of 1-5, where 1 is not important and 5 is very important. Average ratings are shown.
- Other characteristics mentioned: "chemistry," industry knowledge, responsiveness and flexibility—all rated 5.

4. Vendor Selection

e. Ratings of Leading Consulting Services Vendors

Andersen Consulting Average Rating: 3.4 Respondents: 7

- Strengths: Broad experience, industry knowledge, proven in consulting, strong in utilities, expertise, quality of people, software availability

- Weaknesses: Cost, hordes of people, large-project orientation, lack of competitiveness to some degree, too procedural

DEC Average Rating: 3.0 Respondents: 3

- No comments recorded

EDS Average Rating: 3.7 Respondents: 6

- Strengths: Expertise, technology
- Weaknesses: Reputation in utility industry, price

IBM Average Rating: 3.5 Respondents: 8

- Strengths: Size, utility savvy, technical expertise, resources, quality/products

- Weaknesses: Size - trying to be all things to all people, price, lack of hands-on experience in utilities, lack of flexibility, reorganizations

Price Waterhouse Average Rating: 3.5 Respondents: 5

- Strengths: Experience, professionalism, industry expertise, structure and methodology

- Weaknesses: Cost, no real presence in utility industry

CSC/CSC Partners Average Rating: 4.2 Respondents: 2

- Strengths: Quality people, in-depth expertise

Ernst and Young Average Rating: 5.0 Respondents: 1

- Strengths: Industry knowledge, communications ability with senior management

- Weaknesses: Limited breadth of service

5. Key Information Systems Issues

a. Linking IS and Business Planning

- All respondents indicated that this is an important objective of their planning process.

- Five sites have projects recently completed or currently under way to redefine planning processes, include IS issues more prominently in business planning, or reorganize IS along business lines.

b. Integration of Systems and Processes

- Most comments related to IS planning and not to information technology integration. Either issue misunderstood or a consulting services opportunity.

c. Network Integration and Management

- Three sites have planning or development projects under way in this area.

- Five sites see this as a routine technical support function.

d. Justifying IS Investment

- Four sites use cost benefit analyses or emphasize that systems investments add value.

- Two sites mentioned the role of senior officers or steering committees in approving expenditures.

- One site is implementing a chargeback system to share costs with users.

- One site is working on improving its approach to cost justification, including examining software products that may support the process.

Comments

- Respondents were asked how their institution plans to address the IS issues listed. The specific issues were defined in the questionnaire by IBM.

C

Information Systems Questionnaire

Information Systems Questionnaire
Annual Budget Review: Buying Services and Software Products

INPUT is conducting its annual information systems budget review and analysis of the purchase of services and software products from external firms.

This questionnaire is designed to help INPUT tell you, the information systems manager, how these alternatives are being used and how they are of benefit. The questionnaire should be completed by the CIO or the planning and administration manager. Your answers will be held in confidence and you will receive a summary of the findings should you provide your name and address. Thank you for participating.

Name: ____________________

Title: ____________________

Company: ____________________

Address: ____________________

City ____________ State: ________ ZIP ______

Phone: ____________________

Thank you,
Douglas H. Tayler
Vice President, Research

IOGRAPHICS

1. What is your position/title? ______________________________

2. Is your information systems organization at the corporate or division level?

    ____ Corporate ____ Division ____ Other ________________

3a. In which of the following industries is your firm (institution)?

    ___ Discrete Manufacturing
    ___ Process Manufacturing
    ___ Transportation
    ___ Utilities
    ___ Telecommunications
    ___ Retail Distribution
    ___ Wholesale Distribution
    ___ Banking & Finance
    ___ Insurance
    ___ Health Services
    ___ Education
    ___ Services
    ___ Federal Government
    ___ State & Local Government
    ___ Other (Specify)

3. What is the size of your firm (institution)?

    b. Revenue
    ___ Over $10 Billion
    ___ Over $1 Billion
    ___ Over $500 Million
    ___ Over $100 Million
    ___ Over $50 Million
    ___ Under $50 Million

    c. Number of Employees
    ___ Over 10,000
    ___ Over 5,000
    ___ Over 1,000
    ___ Over 500
    ___ Under 500

4. Which of the following best describes your primary computing environment?

    _____Mainframe with dumb workstations or connected LANs and PCs
    _____Minicomputers with dumb workstations or connected PCs
    _____Minicomputers dedicated to specific applications
    _____Local-area or wide-area networks supporting minis/PCs
    _____Other ____

INFORMATION SYSTEMS BUDGET

5a. What is the total amount of your information systems budget for 1991, both your original budget and estimated actual for the entire year?

    Budget $_____ Million Estimated Actual $_____ Million

5b. If this budget represents less than the entire IS budget for your firm (institution) please indicate who controls the remainder of the budget and what is the approximate percentage controlled by each.

Budget Responsibility	Percent of Total
Information Systems	_____
User Departments	_____
Other IS Groups	_____
Total	100%

6. By what percentage is your 1992 IS budget planned to change from 1991 expenditures?

______% (+/-)

7a. Please indicate the percentage of your budget for each of the following categories for 1991 and 1992.

7b. Also indicate the percentage that each category is planned to change in 1992 over 1991.

Category	Percent of Budget (a)		Percent Change (b)
	1991	1992	1992 vs. 1991
Personnel			
Hardware/Equipment			
Telecommunications			
Software			
Outside Services			
Other			
Total	100%	100%	

8. What percent of your total budget will outside services represent in 1993 and 1994?

	Percent
1993	______
1994	______

[illegible]SIDE SERVICES AND SOFTWARE PRODUCTS EXPENDITURES

9. Please indicate the percentage of your outside services budget that is represented by each of the following types of services and whether that expenditure is increasing (I), decreasing(D) or remaining flat (R) over the next five years.

	% (a)	I/D/R (b)	Function	Definitions/Prompt
9.1			Systems Integration	One-time contracts where the vendor assumes responsibility for the complete design and implementation of a finished system.
9.2			Systems Operations	Long-term contracting for the operation and management of all or a significant portion of the user's IS function/operation.
9.3			Consulting Services	Utilization of high-level consultants to develop IS strategy, plans, conceptual design, etc.
9.4a			Software Development	Contracting for professional services to support implementation. (Detail design, project management, code development, etc.)
[illegible]b			Applications Support Services	Contracting for ongoing support of applications systems
9.5			Education & Training	Course design or delivery for users or IS staff on such topics as new systems, technologies, etc.
9.6			Network Services	Enhanced processing capabilities provided as value-added functional capability on a network (VAN).
9.7			Processing Services	Transaction processing, utility processing or other processing services such as COM, CD ROM preparation, etc.
9.8			Applications Software	Purchased/licensed software which enables a user or group of users Products to carry out operational or administrative processes.
9.9			Turnkey Systems	Off-the-shelf packaged solutions, bundling hardware, software and installation services.
9.10			Systems Software Products	Purchased/licensed software which operates computers and networks or is used in developing application systems.

9b. Please list three key project expenditures planned for 1992 which include one or more of the above types of outside products and services and indicate the type of services involved.

Project/Expenditure   Type of Service

9b.1

9b.2

9b.3

10a. Please indicate who is involved in making decisions involving the selection of vendors that provide outside services. For each class of services, please indicate whether IS (1) or the user (2) is the primary decision maker or whether the decision is made jointly (3).

	1/2/3	Function	Definitions/Prompt
10a.1		Systems Integration	One-time contracts where the vendor assumes responsibility for the complete design and implementation of a finished system.
10a.2		Systems Operations	Long-term contracting for the operation and management of all or a significant portion of the user's IS function/operation.
10a.3		Consulting Services	Utilization of high-level consultants to develop IS strategy, plans conceptual design, etc.
10a.4a		Systems Development	Contracting for professional services to support implementation. (Detailed design, project management, code development, etc.)
10a.4b		Applications Support Services	Contracting for the ongoing support of applications systems
10a.5		Education & Training	Course design or delivery for users or IS staff on such topics as new systems, technologies, etc.
10a.6		Network Services	Enhanced processing capabilities provided as value-added functional capability on a network (VAN).
10a.7		Processing Services	Transaction processing, utility processing or other processing services such as COM, CD ROM preparation, etc.
10a.8		Applications Software Products	Purchased/licensed software which enables a user or group of users to carry out operational or administrative processes.
10a.9		Turnkey Systems	Off-the-shelf packaged solutions, bundling hardware/software and installation services.
10a.10		Systems Software Products	Purchased/licensed software which operates computers or networks or is used in developing application systems.

How often does the user provide the budget/funds for the use of outside services or products? **(circle one)**

Never Occasionally Often Most of the time Always

10c. For all of your application systems development activities planned for 1992, please estimate the percentage that will be performed by each of the following.

Development Approach	Percent
Internal Staff	_____
End User Personnel	_____
Outside Services Firms	_____
Packaged Software	_____
Total	100%

11. For each of the types of systems requirements listed, please indicate whether your firm (institution) is: (a) Likely to need to fill that requirement over the next three years (Y/N); and if so, (b) Whether it is likely to look outside for software and services to assist in meeting the requirement. (Y/N).

	Need (a)	Out (b)	Systems Requirement
11.1			Developing Strategic Systems or Architectural Plans
11.2			Developing New Applications
11.3			Re-engineering Existing Applications
11.4			Integrating Existing Applications
11.5			Downsizing of Existing Applications
11.6			Integrating or Upgrading Networks
11.7			Re-engineering Business Processes
11.8			Migrating to New Data Base Environments
11.9			Systems Management

11.a Could you please identify any significant specific projects that your firm (institution) anticipates undertaking during the next three-year period?

11.a1 ______________________________

11.a2 ______________________________

____

VENDOR SELECTION

12a. Please provide your opinions regarding vendors of the types of products and services listed. For each type of product or service, please indicate the vendor your firm (institution) has used most often or would consider using, and why.

	Function	Provider	Why?
12.1	Sys. Integration		
12.2	Consulting Svcs.		
12.3a	Systems Dev.		
12.3b	Appl. Supp. Svcs.		
12.4	Ed. & Training		
12.5	Network Services		
12.6	Processing Svcs.		
12.7	Appl. Soft. Prod.		
12.8	Turnkey Systems		

12.b What other providers do you use and for what function or services areas?

	Function	Provider	Why?
12.9			
12.10			
12.11			
12.12			

Finally, please provide your views on the factors that your firm (institution) is likely to use in selecting a vendor for each type of service we have discussed. For each type, indicate the primary (a) and secondary (b) factors that you think would influence the buying decision.

Factor:
1 - Price
2 - Reputation
3 - Industry Knowledge
4 - Technical Expertise
5 - Functional Capability of Product
6 - Other (Explain in Comments section.)

	#1 (a)	#2 (b)	
13.1	_____	_____	Systems Integration
13.2	_____	_____	Systems Operations
13.3	_____	_____	Consulting Services
13.4	_____	_____	Systems Development
13.5	_____	_____	Education and Training
13.6	_____	_____	Network Services
13.7	_____	_____	Processing Services
13.8	_____	_____	Applications Software Products
13.9	_____	_____	Turnkey Systems

Comments:

____

____

____

14a. In selecting a provider of consulting services, how important are each of the following characteristics?

(1=not important; 5=very important)

Having specific experience in providing a needed service	_____
Experience in providing a full range of consulting services	_____
General reputation of the vendor	_____
Vendor use of standard methodology	_____
Contract terms and conditions	_____
Quality of service	_____
Geographic coverage	_____
Other	_____

14b. How would you rate each of the IT consulting services vendors listed below relative to their ability to meet your needs? (1=not qualified; 5=very qualified; u=don't know)

Andersen Consulting	_____
DEC	_____
EDS	_____
IBM	_____
Price Waterhouse	_____
Other ________________	_____
Other ________________	_____

14c. Taking two of the vendors that you rated, what do you see as their specific strengths and weaknesses?

Vendor	Strengths	Weaknesses
____________	________________	________________
	________________	________________
____________	________________	________________
	________________	________________
____________	________________	________________
	________________	________________

KEY ISSUES

15. How is your firm (institution) planning to address the following systems-related issues within your industry?

15a. Tying the information systems plan to the business plan

____

____

15b. Addressing the integration of systems and processes

____

____

15c. Addressing network integration and management

15d. Justifying information systems investment

Appendixes

A

Information Services Industry Definitions

A Introduction

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

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

The changes made in INPUT definitions this year are as follows:

- *Systems Operations Submodes* - the submodes of systems operations have been redefined from processing services and professional services to platform systems operations and applications systems operations.

- *Business Services Industry* - the industry sectors of business services and personal services have been combined into a single business services sector.

- *Transportation Industry* - the information services expenditures relating to airline reservation systems have been returned to the transportation sector where they resided prior to 1990.

B
...rall Definitions and Analytical Framework

1. Information Services

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

- Processing of specific applications using vendor-provided systems (called *Processing Services*)
- A combination of hardware, packaged software and associated support services which will meet a specific application processing need (called *Turnkey Systems*)
- Packaged software products, either systems software or applications software products (called *Software Products*)
- People services that support users in developing and operating their own information systems (called *Professional Services*)
- Bundled combinations of products and services where the vendor assumes total responsibility for the development of a custom solution to an information systems problem (called *Systems Integration*)
- Services that provide operation and management of all or a significant part of a user's information systems functions under a long-term contract (called *Systems Operations*)
- Services associated with the delivery of information in electronic form—typically network-oriented services such as value-added networks, electronic mail and document interchange, on-line data bases, on-line news and data feeds, etc. (called *Network Services*)

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

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

The analytical framework of the information services industry consists of the following interacting factors: overall and industry-specific business environment (trends, events and issues); technology environment; user

information system requirements; size and structure of information services markets; vendors and their products, services and revenues; distribution channels; and competitive issues.

2. Market Forecasts/User Expenditures

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

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

- Double counting, which can occur by estimating total vendor revenues when there is significant reselling within the industry (e.g., software sales to turnkey vendors for repackaging and resale to end users)

- Missed counting, which can occur when sales to end users go through indirect channels such as mail order retailers

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

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

3. Delivery Modes

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

Of the eight delivery modes defined by INPUT, five are considered primary products or services:

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

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

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

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

C

Delivery Modes and Submodes

Exhibit 1 provides the overall structure of the information services industry as defined and used by INPUT. This section of *Definition of Terms* provides definitions for each of the delivery modes and their submodes or components.

1. Software Products

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

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

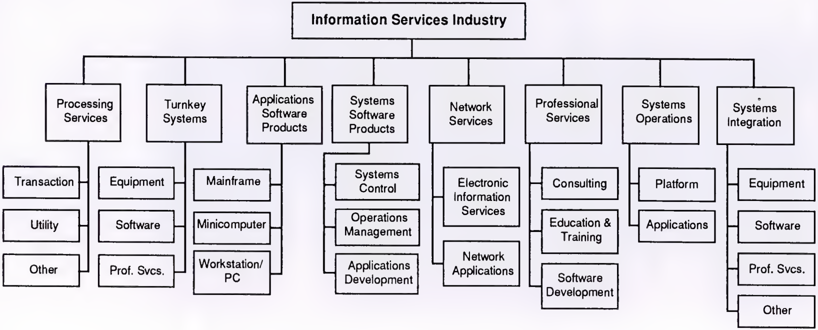
Expenditures for work performed by organizations other than the package vendor are counted in the professional services delivery mode. Fees for work related to education, consulting, and/or custom modification of software products are counted as professional services, provided such fees are charged separately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

a. Systems Software Products

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

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

Information Services Industry Structure—1991



Source: INPUT

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

- *Applications Development Tools* - Software programs used to prepare applications for execution by assisting in designing, programming, testing, and related functions. Included are traditional programming languages, 4GLs, data dictionaries, data base management systems, report writers, project control systems, CASE systems and other development productivity aids. Also included are system utilities (e.g., sorts) which are directly invoked by an applications program.

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

b. Applications Software Products

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

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

- *Cross-Industry Applications Software Products* - Software products that perform a specific function that is applicable to a wide range of industry sectors. Examples include payroll and human resource systems, accounting systems, word processing and graphics systems, spreadsheets, etc.

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

2. Turnkey Systems

A turnkey system is an integration of equipment (CPU, peripherals, etc.), systems software, and packaged or custom application software into a single product developed to meet a specific set of user requirements. Value added by the turnkey system vendor is primarily in the software and support services provided. Most CAD/CAM systems and many small business systems are turnkey systems. Turnkey systems utilize

standard computers and do not include specialized hardware such as word processors, cash registers, process control systems, or embedded computer systems for military applications.

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

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

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

Turnkey systems have three components:

- Equipment - computer hardware supplied as part of the turnkey system

- Software products - prepackaged systems and applications software products

- Professional services - services to install or customize the system or train the user, provided as part of the turnkey system sale

3. Processing Services

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

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

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

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

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

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

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

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

4. Systems Operations

Systems operations was a new delivery mode introduced in the 1990 Market Analysis and Systems Operations programs. It was created by taking the Systems Operations submode out of both Processing Services and Professional Services. For 1991 the submodes have been redefined as indicated below.

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

• *Platform systems operations* - the vendor manages and operates the computer systems, often including telecommunications networks, without taking responsibility for the user's application systems.

• *Applications systems operations* - the vendor manages and operates the computer systems, often including telecommunications networks, and is also responsible for maintaining, or developing and maintaining, the user's application systems.

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

The ownership of the equipment, which was the previous basis for the systems operations submodes, is no longer considered critical to the commercial market. Most of the market consists of systems operations relationships using vendor-owned hardware. What is now critical is the breadth of the vendor/client relationship as it expands beyond data center management to applications management.

Systems operations vendors now provide a wide variety of services in support of existing information systems. The vendor can plan, control, provide, operate, maintain and manage any or all components of the user's information systems (equipment, networks, systems and/or application software), either at the client's site or the vendor's site. Systems operations can also be referred to as "resource management" or "facilities management."

5. Systems Integration (SI)

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

To be included in the information services market, systems integration projects must involve some application processing component. In addition, the majority of cost must be associated with information systems products and/or services.

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

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

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

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

Systems integrators perform, or manage others who perform, most or all of the following functions:

- Program management, including subcontractor management
- Needs analysis
- Specification development
- Conceptual and detailed systems design and architecture
- System component selection, modification, integration and customization
- Custom software design and development
- Custom hardware design and development
- Systems implementation, including testing, conversion and post-implementation evaluation and tuning
- Life cycle support, including
  - System documentation and user training
  - Systems operations during development
  - Systems maintenance

6. Professional Services

This category includes three submodes: consulting, education and training, and software development.

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

- *Education and Training:* Products and services related to information systems and services for the professional and end user, including computer-aided instruction, computer-based education, and vendor instruction of user personnel in operations, design, programming, and documentation.

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

7. Network Services

Network services typically include a wide variety of network-based functions and operations. Their common thread is that most of these functions could not be performed without network involvement. Network services is divided into two submodes: *Electronic Information Services,* which involve selling information to the user, and *Network Applications,* which involve providing some form of enhanced transport service in support of a user's information processing needs.

a. Electronic Information Services

Electronic information services are data bases that provide specific information via terminal- or computer-based inquiry, including items such as stock prices, legal precedents, economic indicators, periodical literature, medical diagnosis, airline schedules, automobile valuations, etc. The terminals used may be computers themselves, such as communications servers or personal computers. Users typically inquire into and extract information from the data bases. Although users may load extracted data into their own computer systems, the electronic information vendor provides no data processing or manipulation capability and the users cannot update the vendor's data bases.

The two kinds of electronic information services are:

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

- *News Services* - Unstructured, primarily textual information on people, companies, events, etc.

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

b. Network Applications

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

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

INPUT's market definition covers VAN services only, but includes the VAN revenues of all types of carriers. The following are examples of VAN services.

- *Electronic Data Interchange (EDI)* - Application-to-application exchange of standardized business documents between trade partners or facilitators. This exchange is commonly performed using VAN services. Specialized translation software is typically employed to convert data from organizations' internal file formats to EDI interchange standards. This software may be provided as part of the VAN service or may be resident on the organization's own computers.

- *Electronic Information Exchange (EIE)* - Also known as electronic mail (E-mail), EIE involves the transmission of messages across an electronic network managed by a services vendor, including facsimile transmission (FAX), voice mail, voice messaging, and access to Telex, TWX, and other messaging services. This also includes bulletin board services.

- *Other Network Services* - This segment contains videotex and pure network management services. Videotex is actually more a delivery mode than an application. Its prime focus is on the individual as a consumer or in business. These services provide interactive access to data bases and offer the inquirer the ability to send as well as receive information for such purposes as home shopping, home banking, travel reservations, and more.

  Network management services included here must involve the vendor's network and network management systems as well as people. People-only services are included in professional services that involve the management of networks as part of the broader task of managing a user's information processing functions are included in systems operations.

B

Industry Sector Definitions

This appendix provides the definitions for the industry (vertical) sectors used in this study of the IBM Northeastern Region.

INPUT has structured the information services market into 15 industry sectors, such as process manufacturing, insurance, transportation, etc. The definitions of these sectors are based on the 1987 revision of the Standard Industry Classification (SIC) Code system.

The definitions used here are identical to those used by INPUT in its annual assessment and forecast for the U.S. information services industry, with the following changes. The changes result in 17 industry sectors.

Discrete Manufacturing - this sector is as defined by INPUT except that SIC Codes 271x-274x which represent the *Publishing* industry were removed and used in a new industry sector called *Media.*

Telecommunications - this sector is as defined by INPUT except that SIC Codes 483x and 484x, which cover the Radio and TV Broadcasting and Cable and Other Pay TV Services industries, were removed and used in a new industry sector called *Media.*

State and Local Government - this sector was split into two sectors: *State Government* and *Local Government.*

The 17 specific industries (and their SIC Codes) used in this study for IBM are detailed in Exhibit B-1.

EXHIBIT B-1

Industry Sector Definitions

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

EXHIBIT B-1 (CONT.)

Industry Sector Definitions

Industry Sector	SIC Code	Description
Utilities	49xx	Electric, gas and sanitary services
Telecommunications	48xx	Communications (except 483x and 484x)
Media	27xx 483x 484x	Publishing Radio and television broadcasting Cable and other pay television services
Retail Distribution	52xx 53xx 54xx 55xx 56xx 57xx 58xx 59xx	Building materials General merchandise stores Food stores Automotive dealers, gas stations Apparel and accessory stores Home furniture, furnishings and accessory stores Eating and drinking places Miscellaneous retail
Wholesale Distribution	50xx 51xx	Wholesale trade - durable goods Wholesale trade - nondurable goods
Banking and Finance	60xx 61xx 62xx 67xx	Depositary institutions Nondepositary institutions Security and commodity brokers, dealers, exchanges and services Holding and other investment offices
Insurance	63xx 64xx	Insurance carriers Insurance agents, brokers and services
Health Services	80xx	Health services
Education	82xx	Educational services

EXHIBIT B-1 (CONT.)

Industry Sector Definitions

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