MARKET ANALYSIS AND PLANNING SERVICES

ANNUAL PRESENTATION 1984

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MARKET ANALYSIS AND PLANNING SERVICE (MAPS)

Annual Client Presentation 1984

MAPS Presentation 1984

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INPUT'S 1984 MAPS ANNUAL CLIENT PRESENTATION

CONTENTS

INPUT Presents . . .

NEW DIRECTIONS FOR TURBULENT TIMES

AGENDA

- Setting the Stage
- Industry at a Glance
- Dimensions of Turbulence
- Markets
- Conclusions

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SETTING THE STAGE

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INPUT RESEARCH SOURCES

- Subscription Programs
- Multiclient Projects
- Custom Consulting

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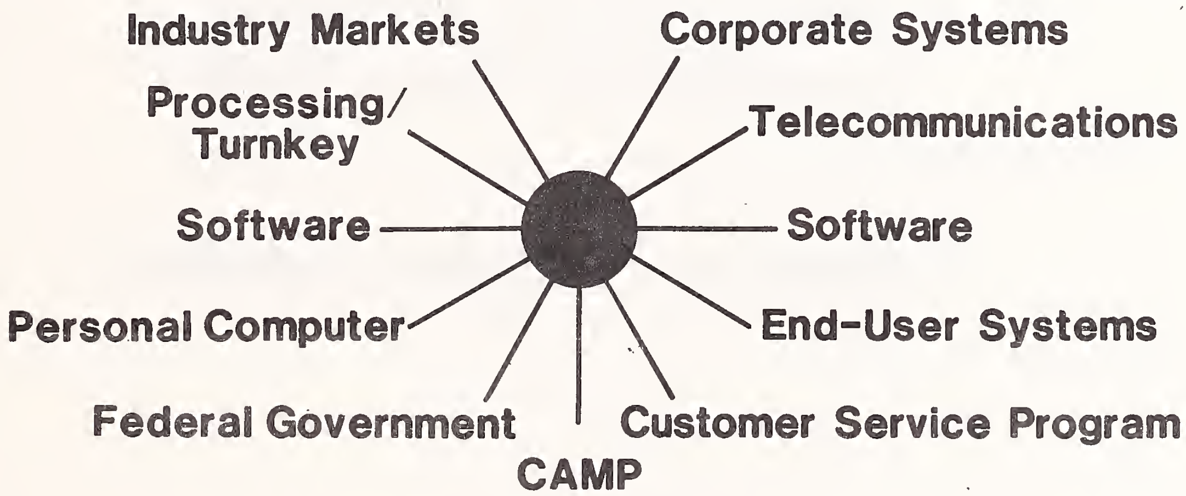
INPUT SUBSCRIPTION PROGRAMS



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TODAY'S OBJECTIVE

- Identify Key Marketplace Changes for 1984-1989

- Suggest Profitable Opportun-ities

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KEY ISSUES

- Outcome of Micro Turmoil?
- Impact of Giant Firms?
- More Decline in Software Prices?
- What Markets Look Best?

INPUT

ASPECTS OF GROWTH

- Much Growth, But Uneven
- Vertical Market Approach Is Vital
- Integration Critical

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FORECAST PARAMETERS

- U.S. Noncaptive User Expenditures
- Calendar Year
- 6% Annual Inflation
- Current Dollars
- AAGR = Average Annual Growth Rate

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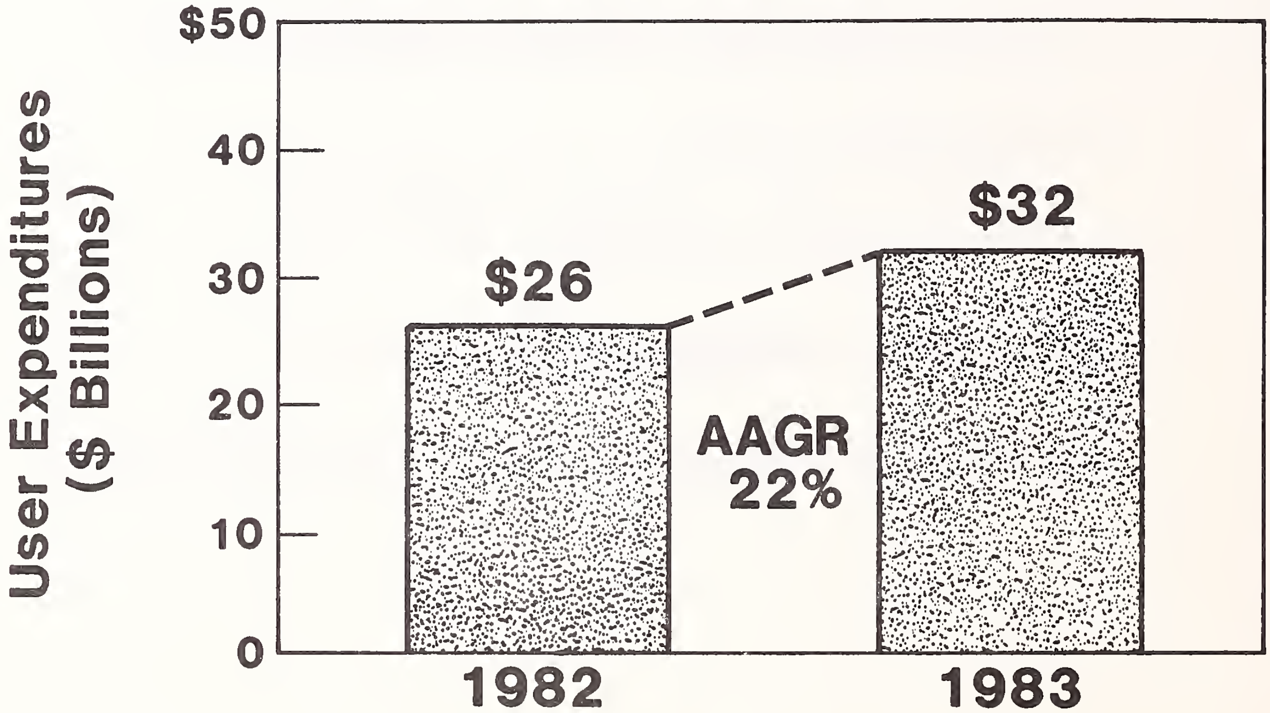
INFORMATION SERVICES: A GOOD YEAR OVERALL



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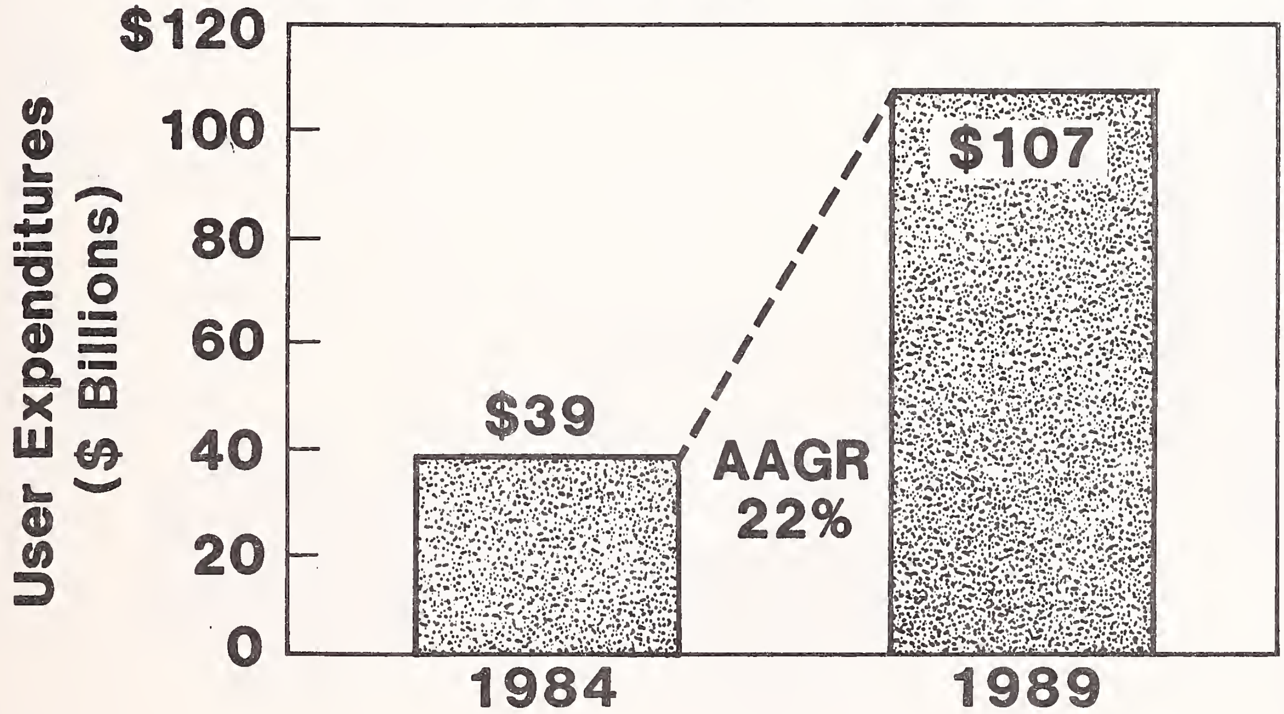
INFORMATION SERVICES: A $107 BILLION POT OF GOLD



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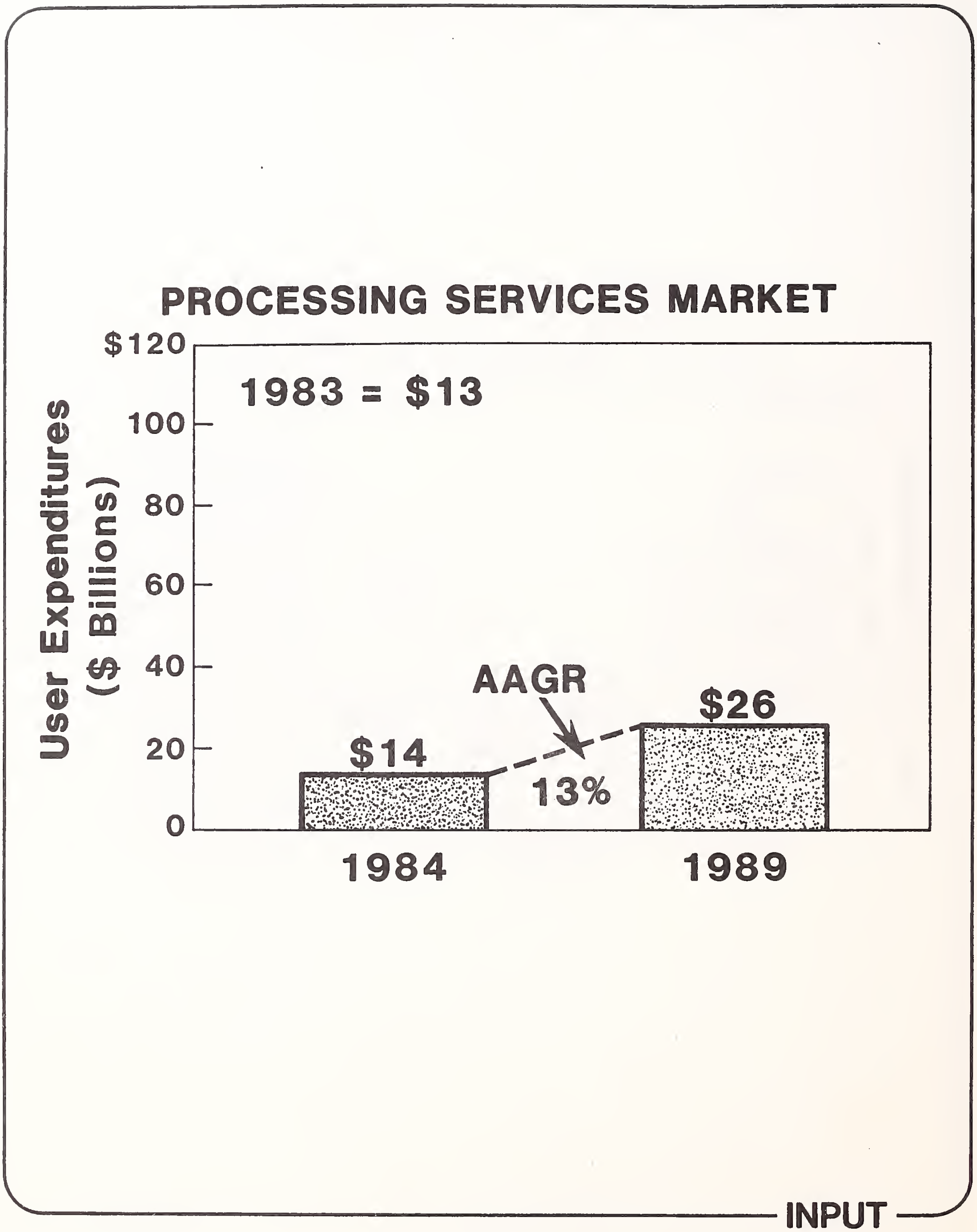
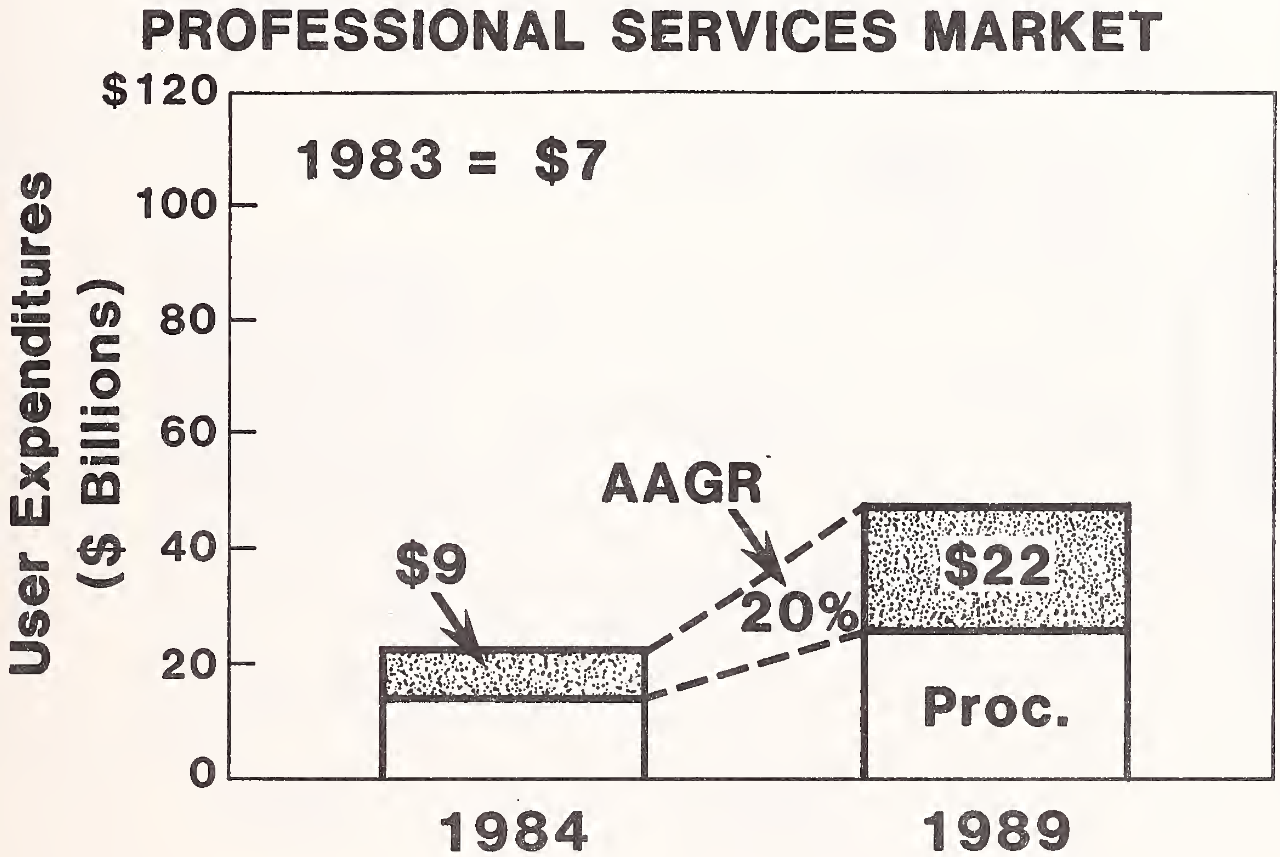
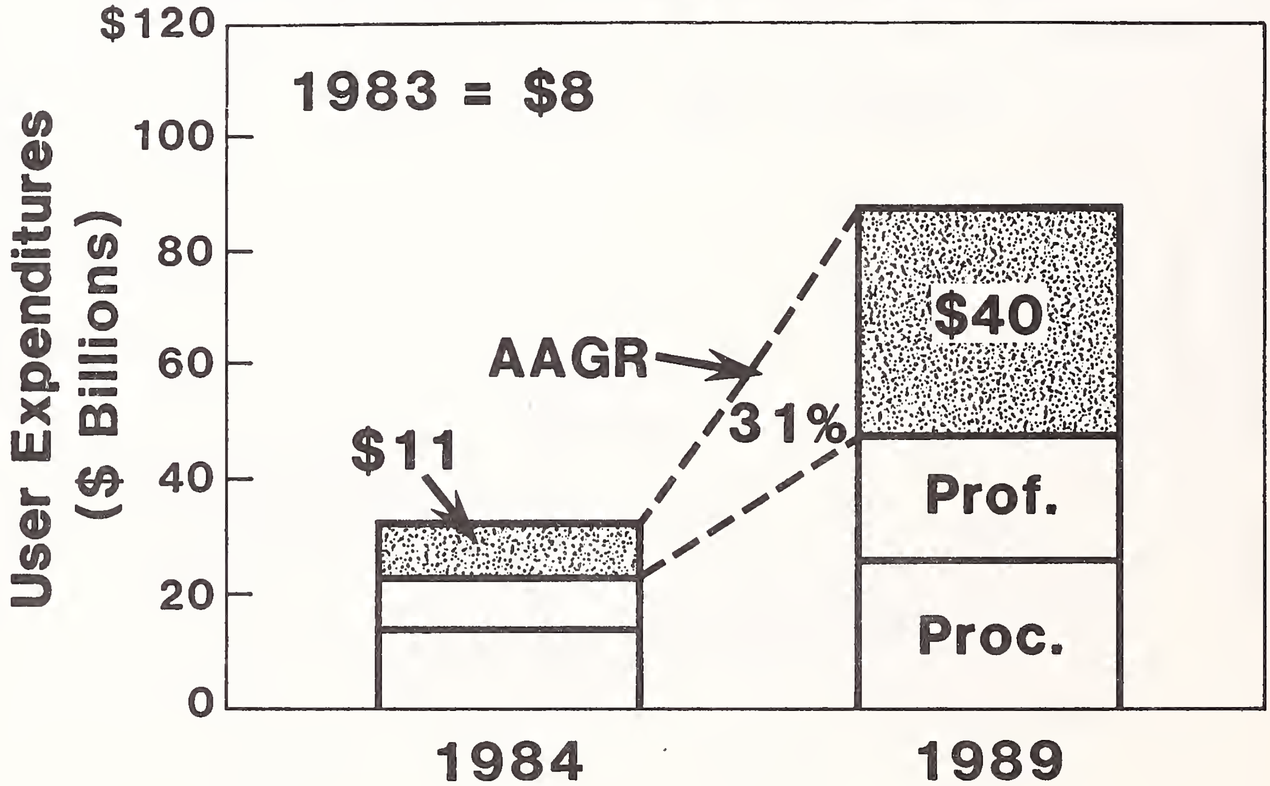

PROCESSING SERVICES MARKET
$120
100
80
60
40
20
0
User Expenditures ($ Billions)
1983 = $13
AAGR
13%
$14
$26
1984
1989
INPUT


PROFESSIONAL SERVICES MARKET
User Expenditures ($ Billions)
$120
100
80
60
40
20
0
1983 = $7
AAGR
20%
$9
$22
Proc.
1984
1989

INPUT

SOFTWARE PRODUCTS MARKET



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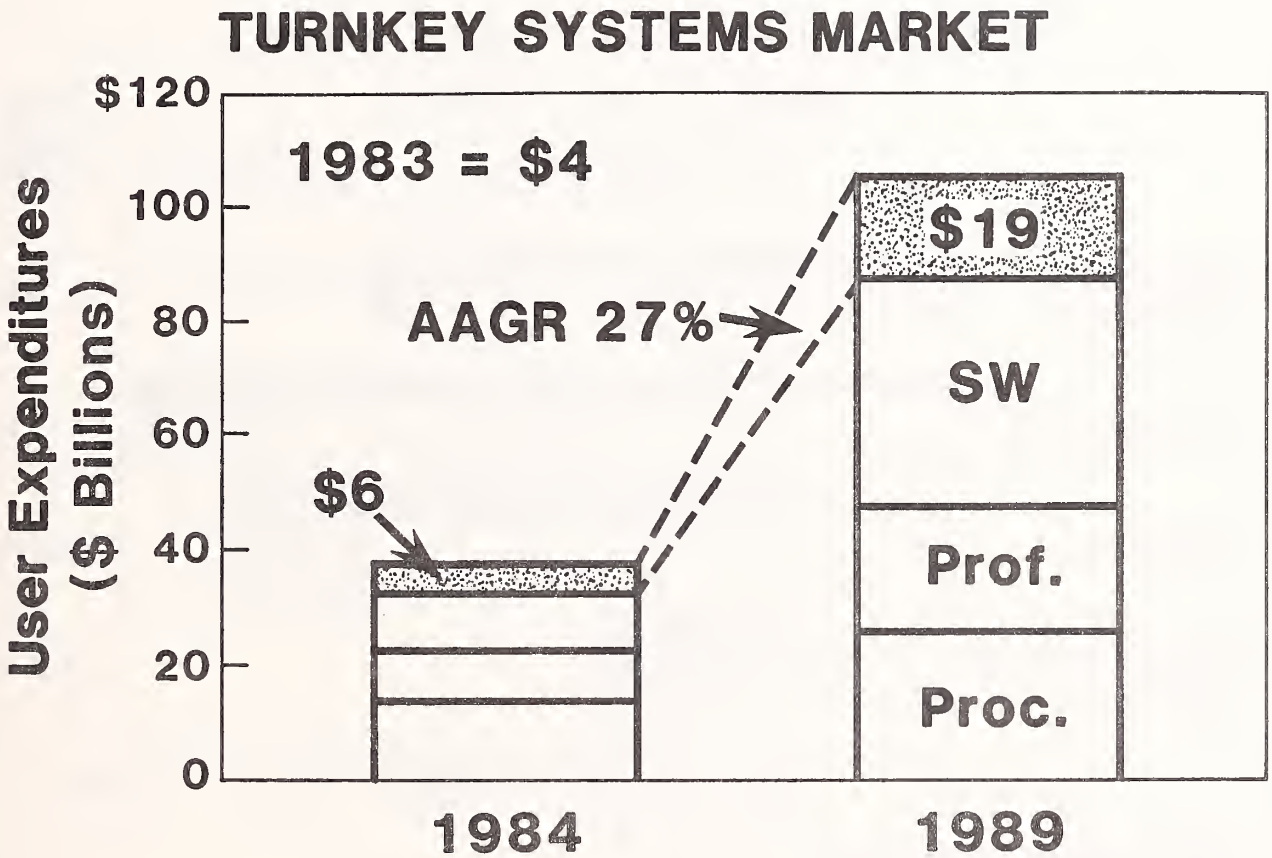
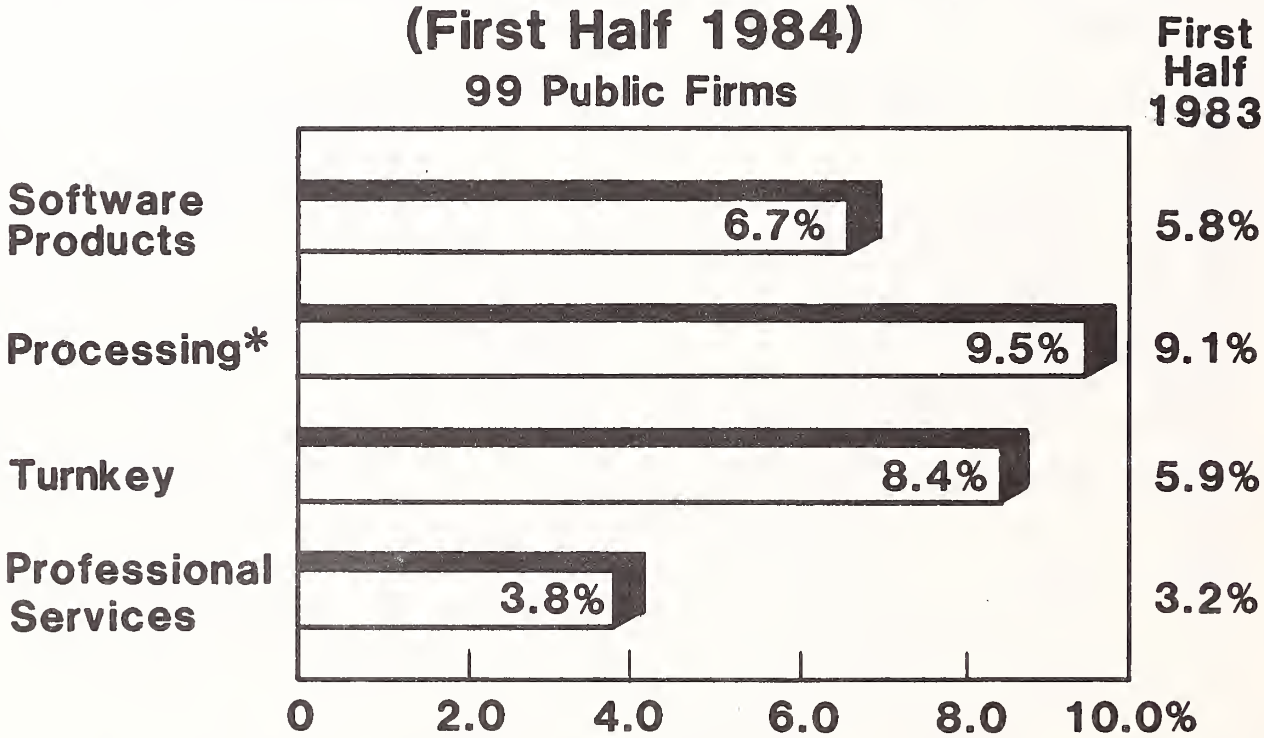

TURNKEY SYSTEMS MARKET
$120
100
80
60
40
20
0
User Expenditures
($ Billions)
1983 = $4
$19
AAGR 27%
SW
$6
Prof.
Proc.
1984
1989

INPUT

PROFIT TRENDS (After Tax)
(First Half 1984)

99 Public Firms



*Excludes Anacomp

INPUT

DIMENSIONS OF TURBULENCE

- Industry Structure
- Information Systems Viewpoints
- The User View
- Telecommunications
- People

INPUT

INDUSTRY STRUCTURE

INPUT

MARKET STRUCTURE: 1983-1989

Type Firm	Share of Market 1983	Share of Market 1989
Independents	69%	59%
Computer/ Communications Hardware	10%	16%
Subsidiaries	10%	19%
Other	11%	6%
Total	100%	100%

INPUT

MORE BIG KIDS

Vendor Size	Number of Firms 1979	Number of Firms 1983
Over $100M	20	60
$10M to $100M	100	300

INPUT

MORE PUBLIC FIRMS

Number of Firms	
1977	1984
50	200

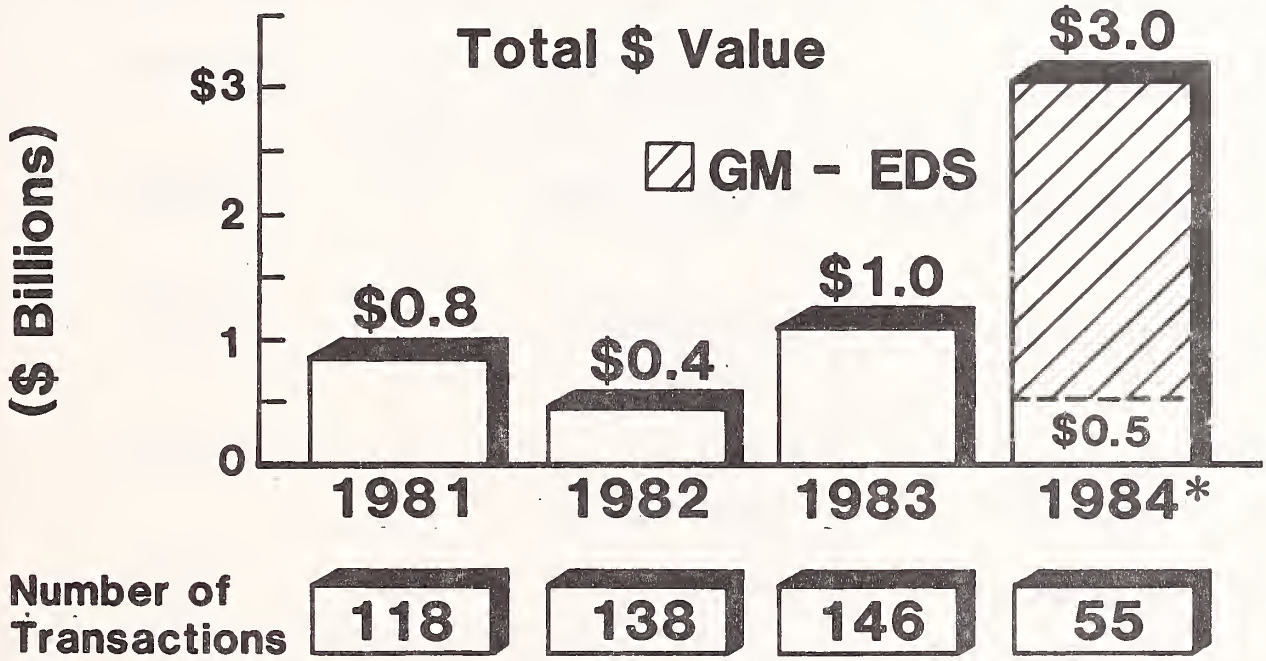
INPUT

MORE GIANTS ONSTAGE

- Dun & Bradstreet
- McGraw-Hill
- General Motors
- AT&T
- Regional Bell Operating Companies

INPUT

INFORMATION SERVICES INDUSTRY MERGERS & ACQUISITIONS TRENDS



*First Six Months

Source: Broadview Associates

INPUT

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ACQUISITION EXAMPLES

ACQUIRED	ACQUIRER	PAYMENT ($ Millions)
EDS	General Motors	$2,500
Monchik-Weber	McGraw-Hill	$56
Tymshare	McDonnell-Douglas	$307
Thomas National	Dun & Bradstreet	$45
Execucom	Contel	$18

INPUT

GM/EDS RATIONALE

1. Internal Opportunities

2. Business Opportunity

INPUT

AT&T

- Experienced Computer Manufacturer
- Telecommunication Services Thrust
  - Development
  - Consulting
  - Systems Integration
- Use Systems Software to Establish Position

INPUT

BELL OPERATING COMPANIES

- Moving to Enhance Services
- Have Money
- Can Be Distributors
- Targetting Office Systems
- Potentially Active Players
- Major Market for Information Services Vendors

INPUT

IBM

- $400 Billion by 2000 A.D.
- Over $100 Billion in Services
- Initial Emphasis on Delivery Vehicles
- Targetting Systems Integration
- Vertical Markets Later
- Looking for Partners

INPUT

IBM SOFTWARE DIRECTIONS

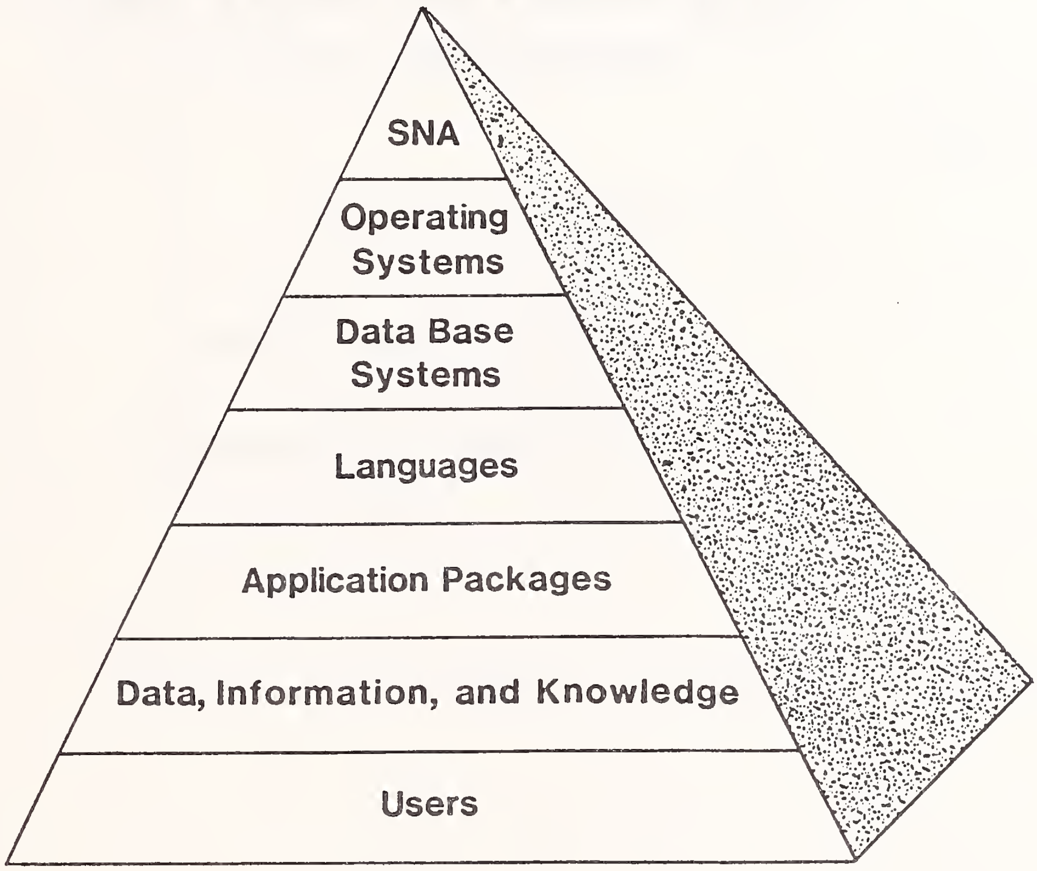
INPUT

IBM GROWTH POTENTIAL

	1990	1995	2000
IBM Revenue ($ Billions)	$100	$200	$400
Information Services As Percent of Revenue	7-12%	18%	27%

INPUT

SNA IS THE CAPSTONE OF IBM'S SOFTWARE STRATEGY



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51UUCP
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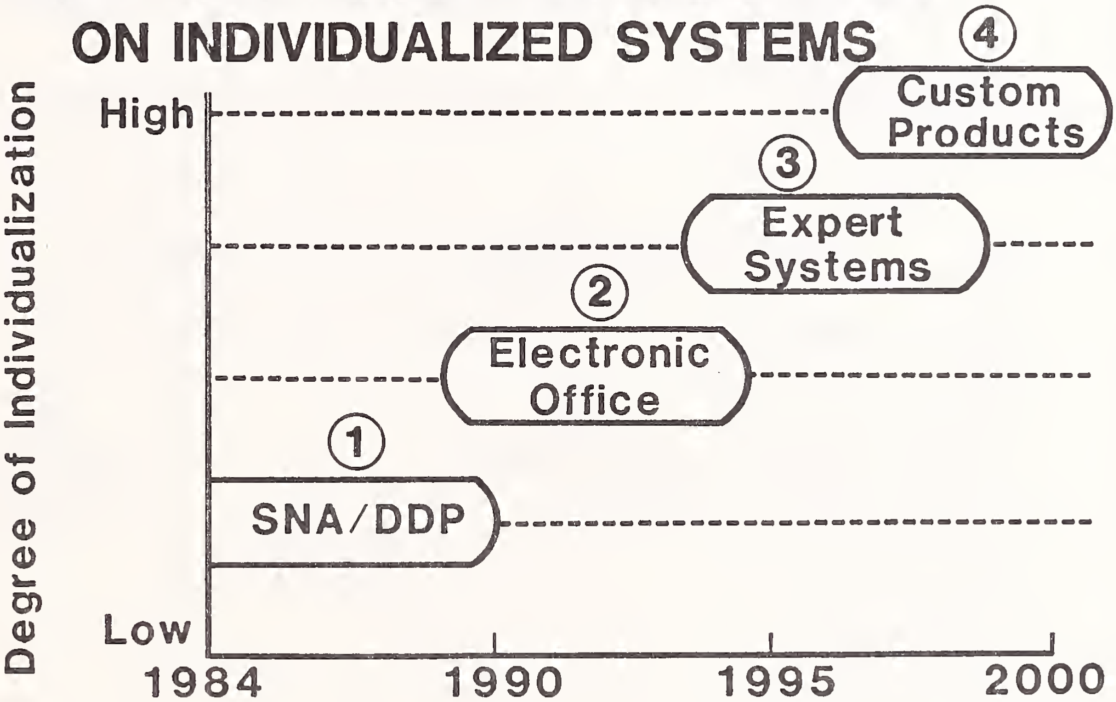
VENERABLE IMS WILL LAST THROUGH 1990

- Widely Used
- Operational Files
- Difficult to Convert

INPUT

IBM STRATEGIES ARE FOCUSING ON INDIVIDUALIZED SYSTEMS



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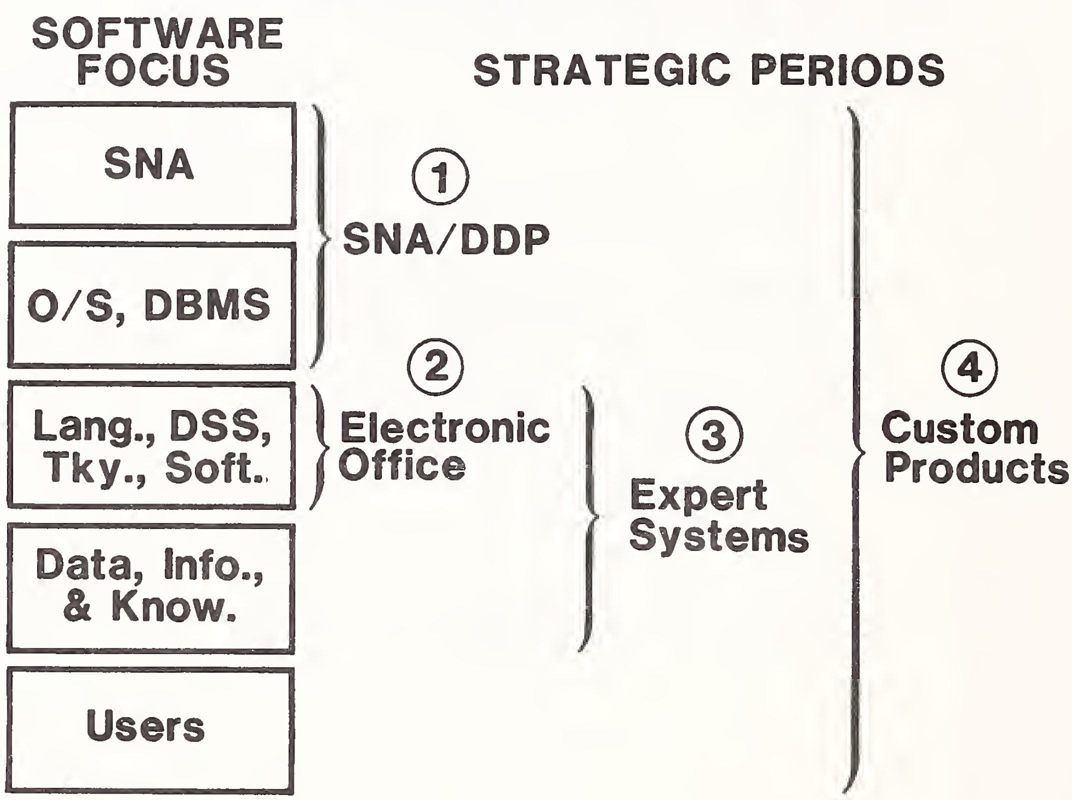
THE CHANGING SOFTWARE FOCUS



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VENDOR OPPORTUNITIES

- Make Large Systems More Productive
  - Performance
  - DBMS with Text/Data/Image
  - Languages/DSS

INPUT

VENDOR OPPORTUNITIES

- Support Large-Scale Integrated Electronic Offices
- Sell Hardware/Software with Data/ Information/Knowledge

INPUT

INFORMATION SYSTEMS VIEWPOINTS

INPUT

no copy

INFORMATION SYSTEMS AS WEAPONS

- Complex Systems as Barrier to Entry
- Multiple Systems as 'Chips' in the Game
- Integration into Customers' Activities

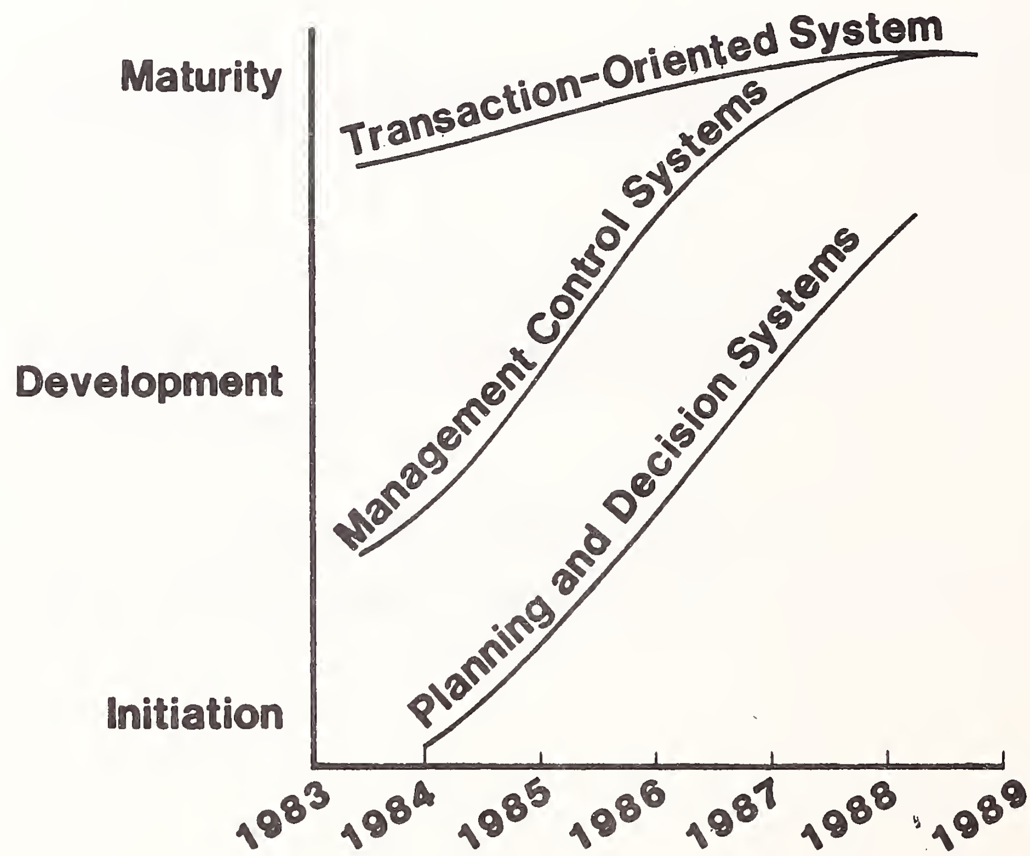
INPUT

INFORMATION SYSTEMS AS WEAPONS

- **Reduction of Cost, Time**
- **Improvement of Accuracy, Effectiveness**
- **Products Themselves**

INPUT

PLANNING SYSTEMS ARE IN THEIR INFANCY



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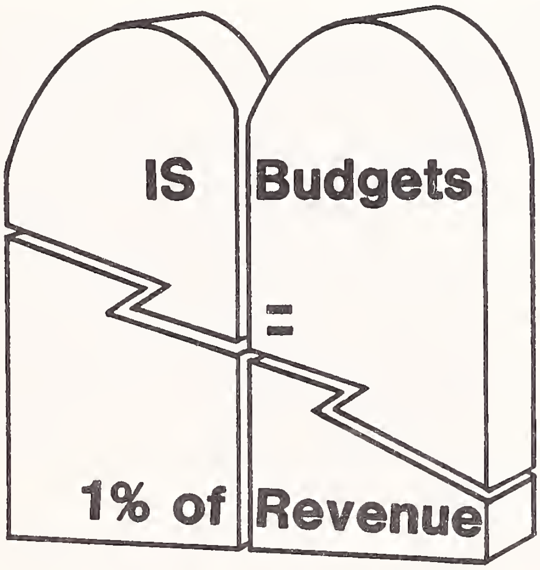
OLD ASSUMPTIONS NO LONGER VALID



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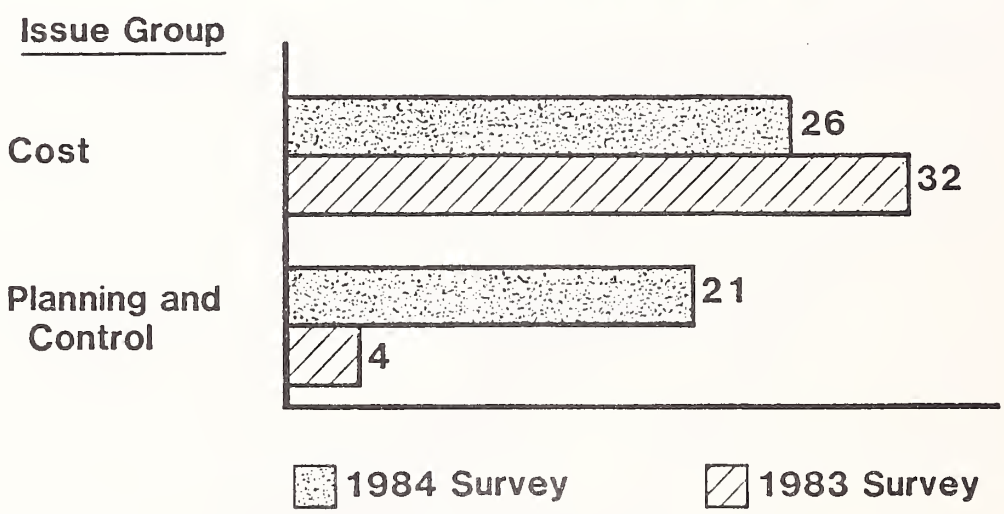
25UUCP

SENIOR MANAGERS SHIFTING THEIR CONCERNS



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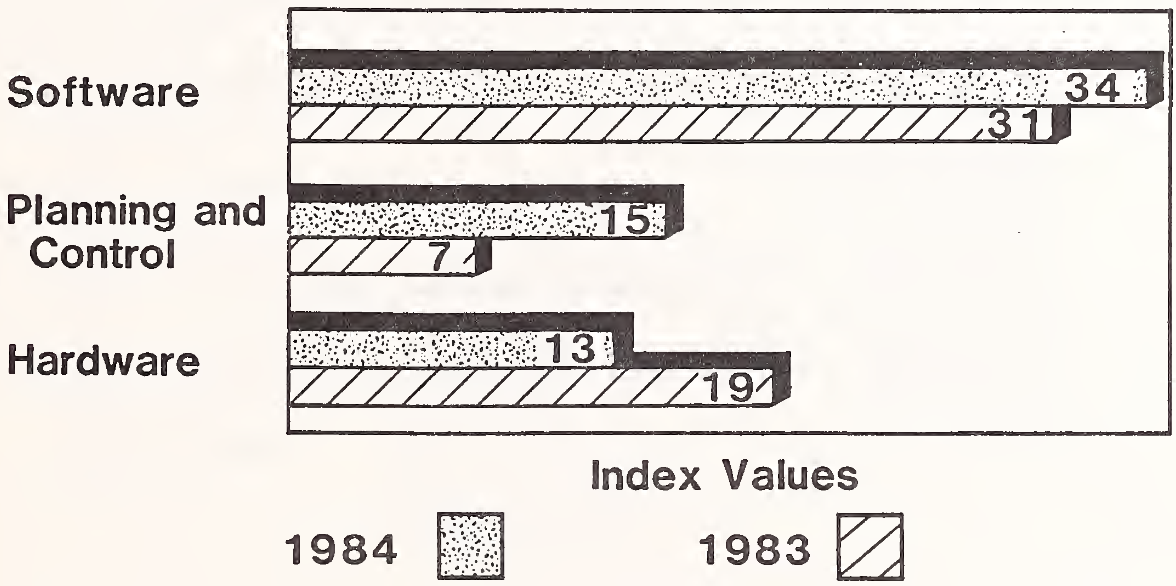
SOFTWARE STILL DOMINATES OBJECTIVES



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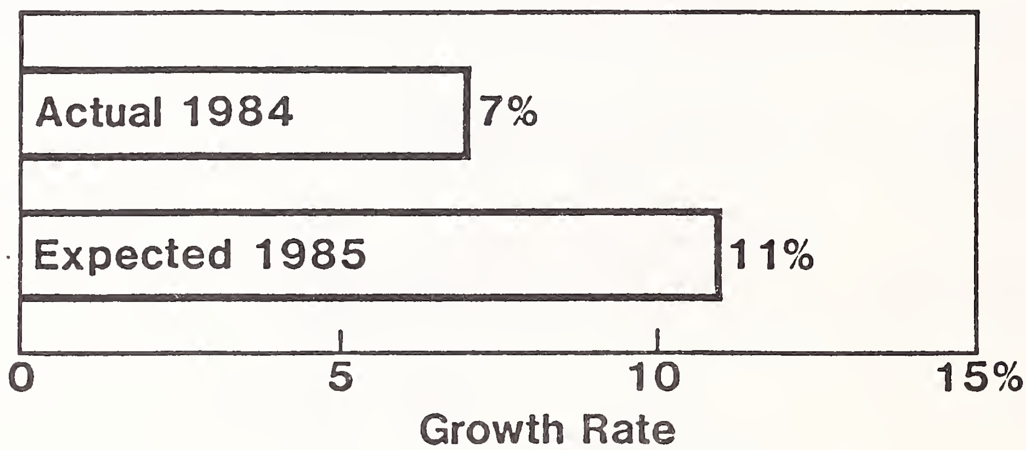
I.S. BUDGETS ARE GROWING



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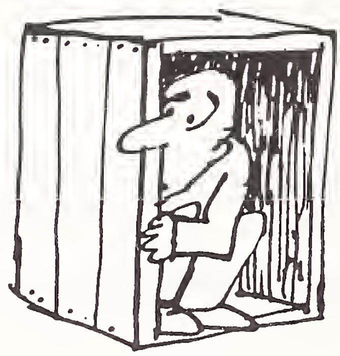
MOST SIGNIFICANT CHANGES AFFECTING I.S.

1.	End-User Computing	31.7%
2.	Software	18.3%
3.	Hardware	12.4%
4.	Corporate Relationships	8.4%
5.	Planning & Control	5.3%
6.	Other	23.9%

INPUT

THE USER VIEW



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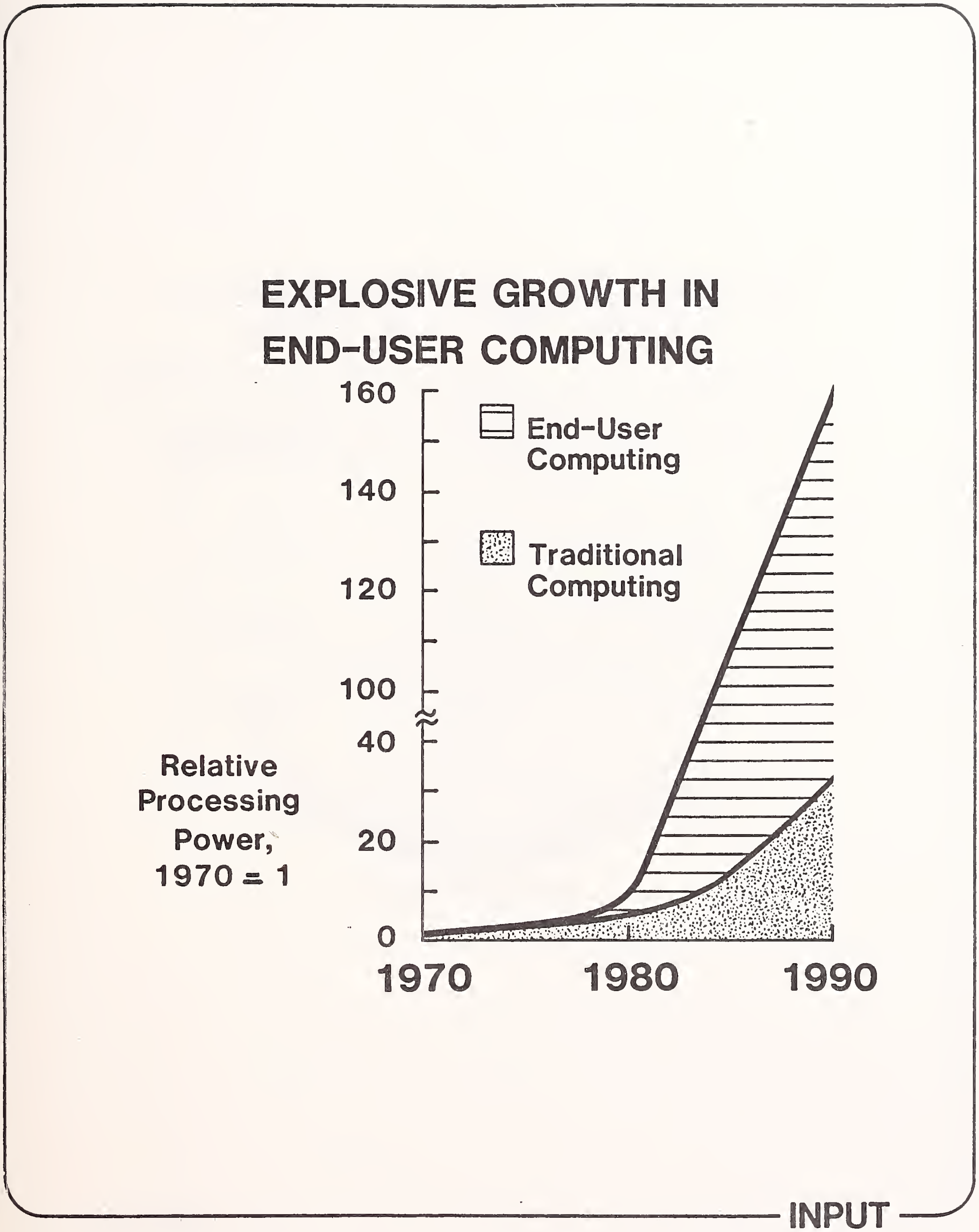
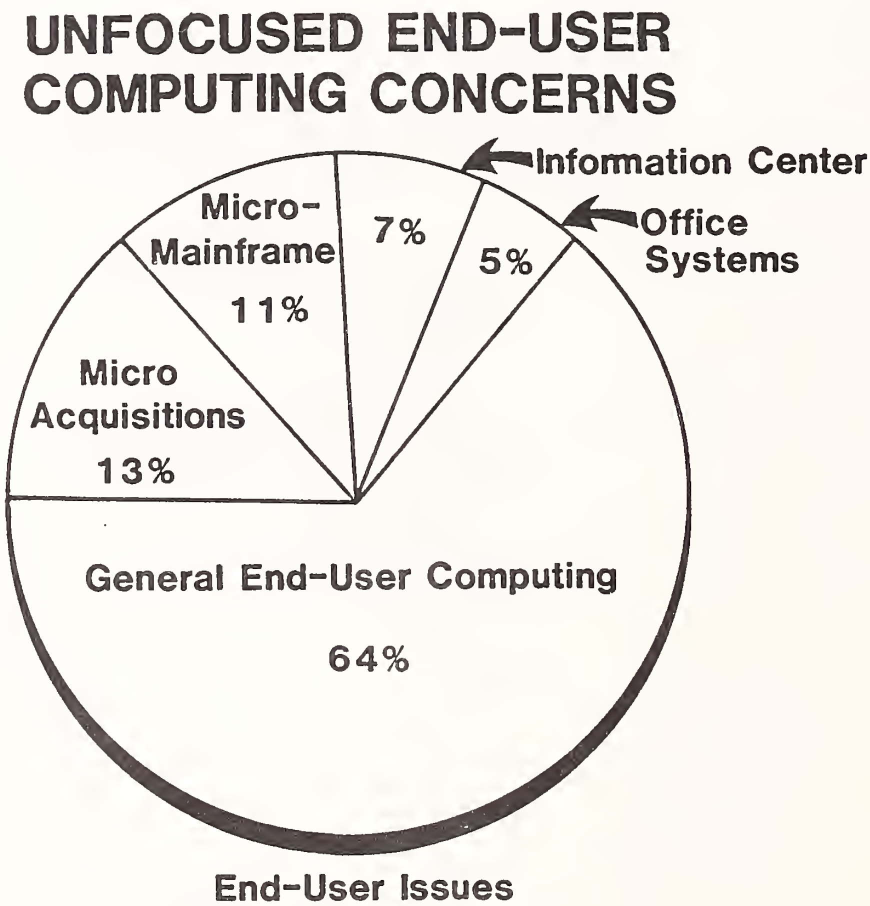


2UJCCSK
73MMCP


UNFOCUSED END-USER
COMPUTING CONCERNS
Information Center
Office
Systems
Micro-
Mainframe
11%
7%
5%
Micro
Acquisitions
13%
General End-User Computing
64%
End-User Issues

INPUT

(330)

INFORMATION CENTER GROWTH

Year	Number of Centers	Percent of CPUs
1982	500	4%
1984	2,000	14%
1989	5,000	36%

20% AAGR (1984-1989)

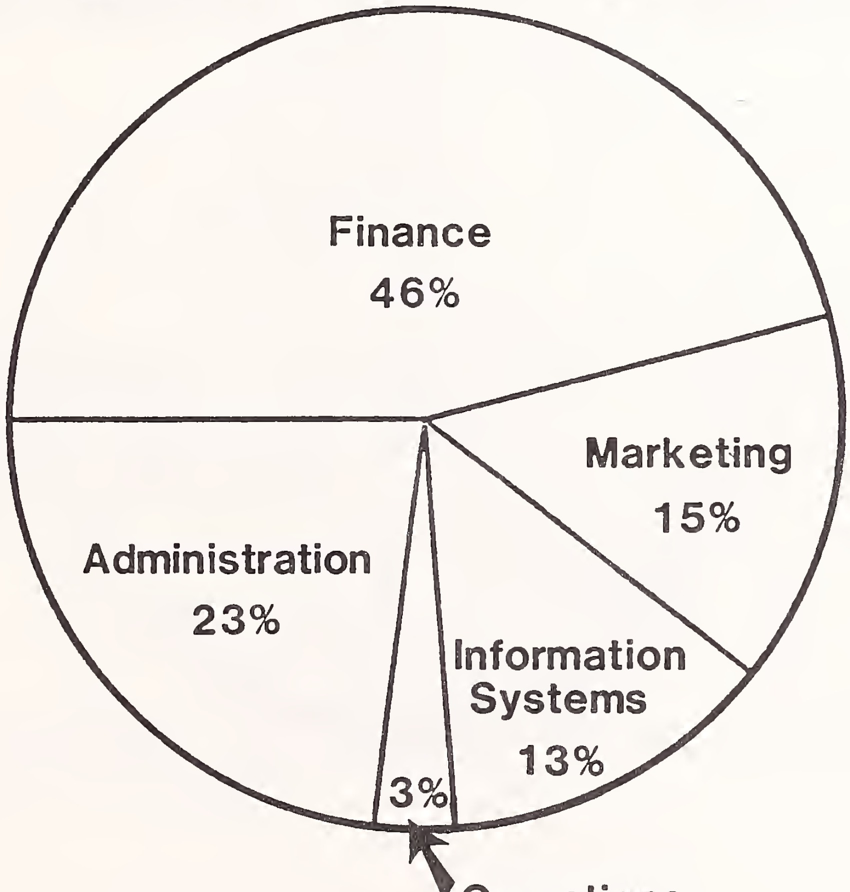
INPUT

PERSONAL INFORMATION CENTERS ARE COMING

- Extension to Mainframe Information Centers
- Decision Support
- Report Generation Integrated With Word Processing

INPUT

DEPARTMENTS USING THE INFORMATION CENTER



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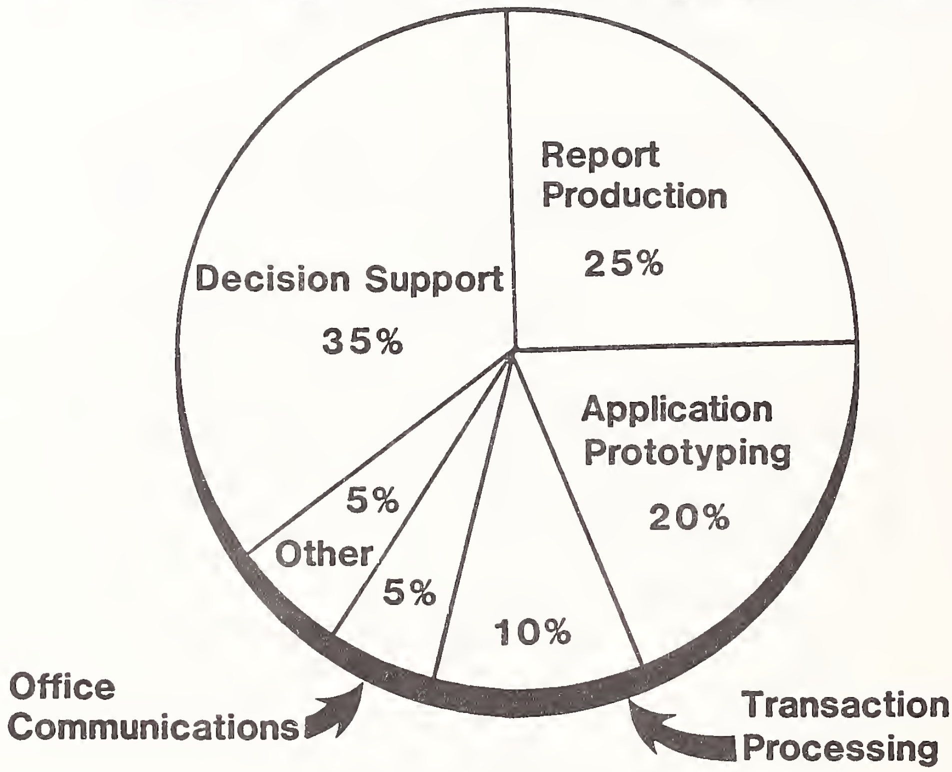
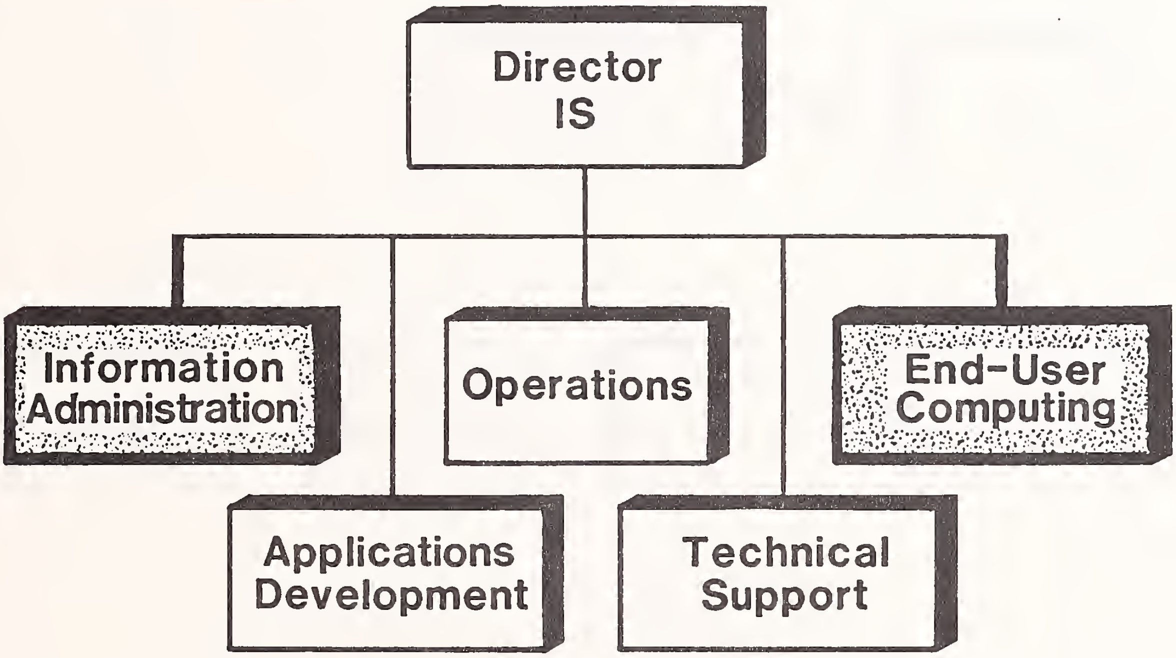
DECISION SUPPORT LEADS INFORMATION CENTER APPLICATIONS



INPUT

I.S. ORGANIZATIONS WILL CHANGE

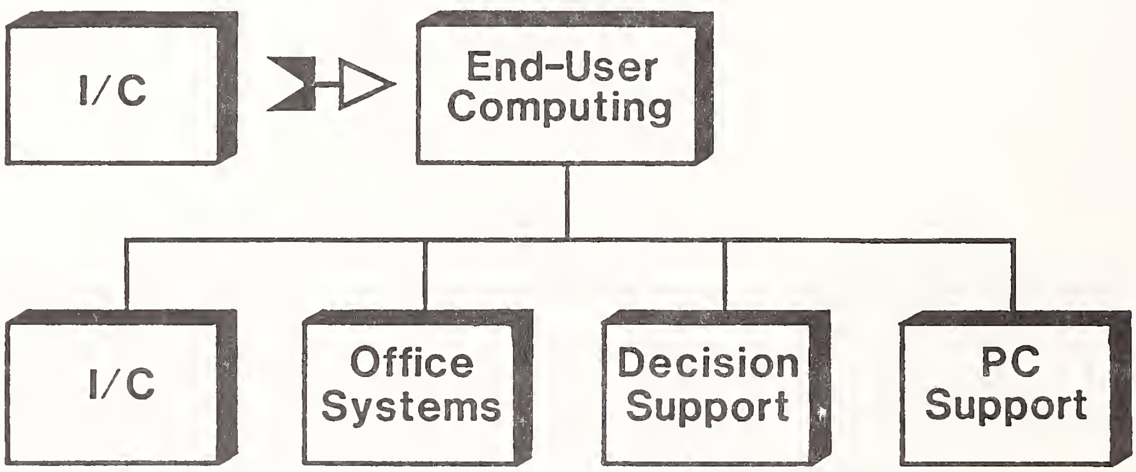


- **Chief Information Officer**

INPUT

31 UUCP
98 MMCP

THE INFORMATION CENTER EVOLUTION

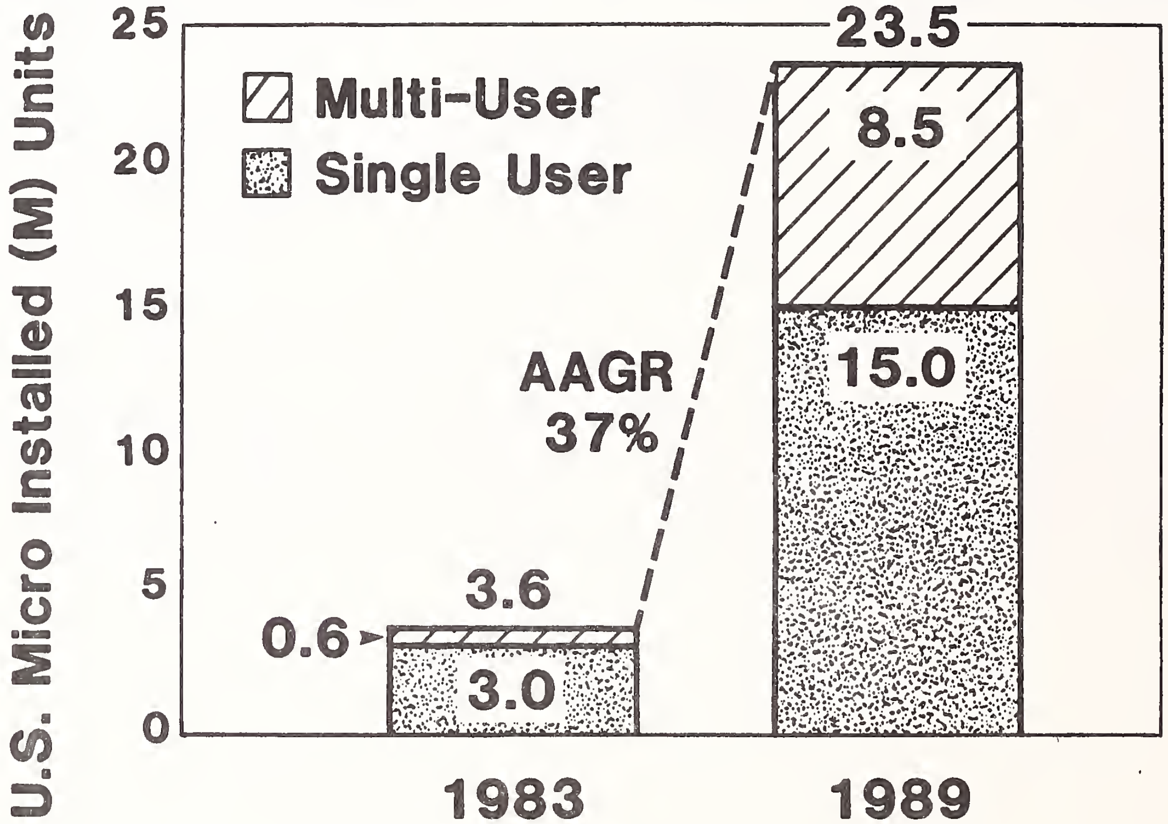


INPUT

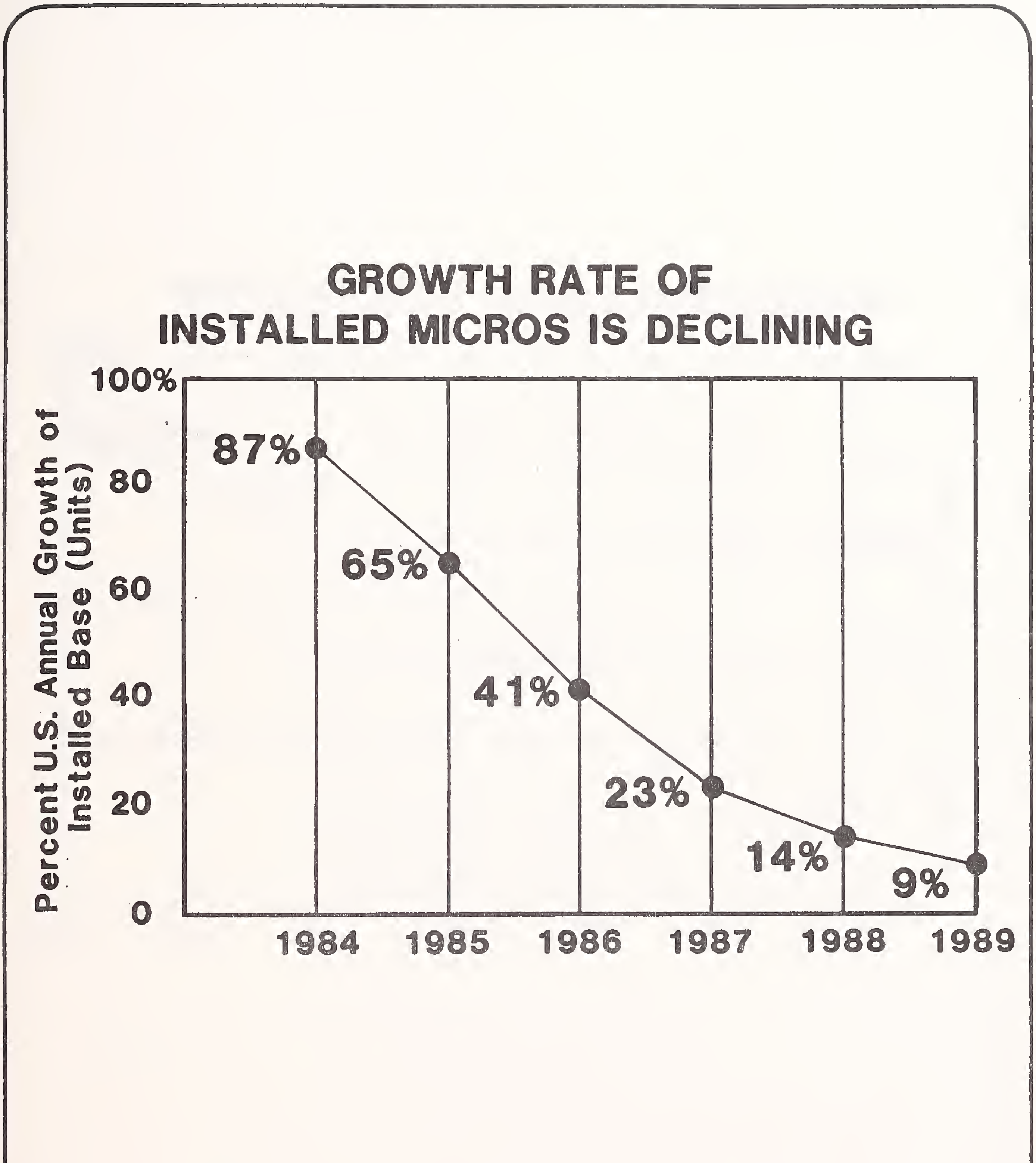
MICROS

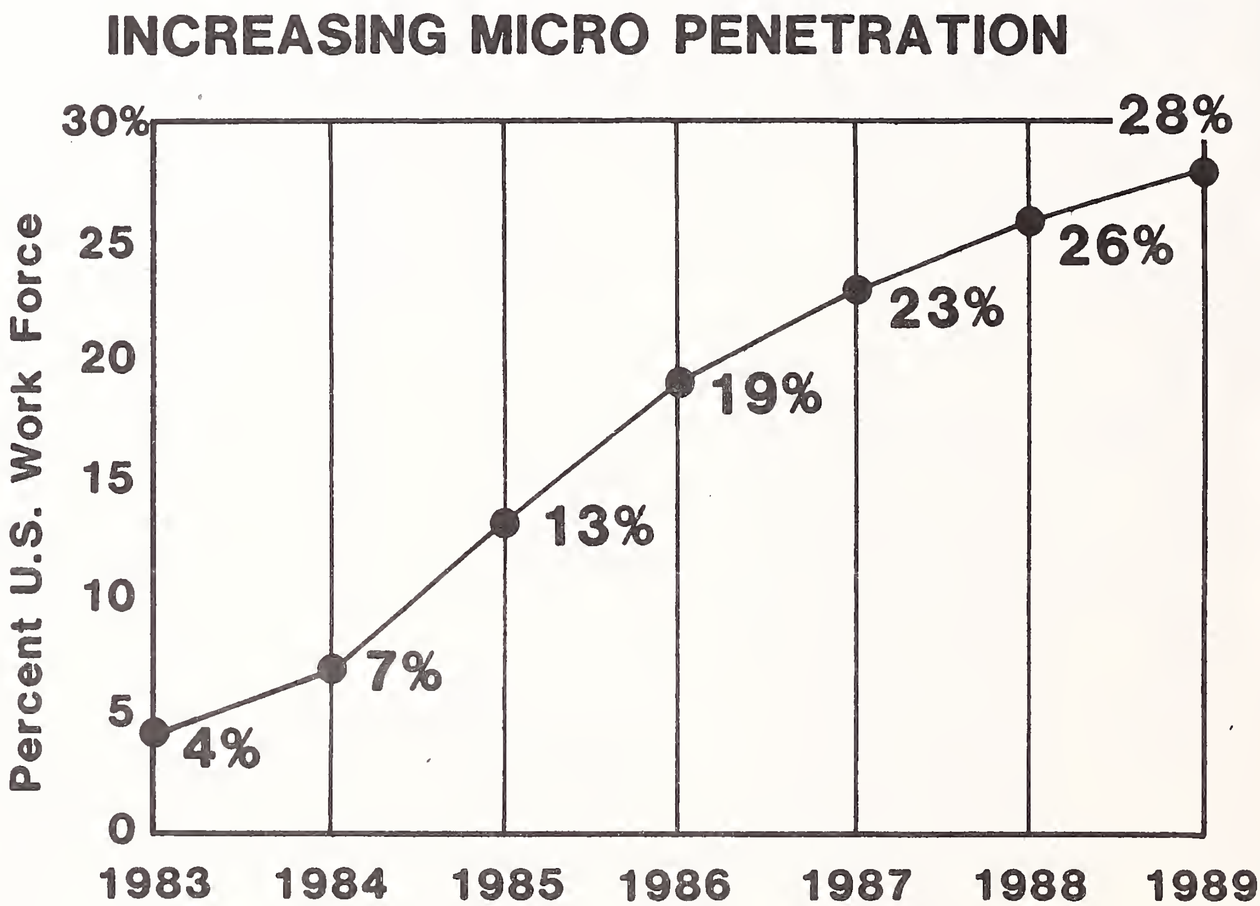
INPUT

GROWTH OF INSTALLED BASE IS SIGNIFICANT



INPUT


GROWTH RATE OF
INSTALLED MICROS IS DECLINING
Percent U.S. Annual Growth of Installed Base (Units)
100%
80
60
40
20
0
87%
65%
41%
23%
14%
9%
1984
1985
1986
1987
1988
1989
INPUT


INCREASING MICRO PENETRATION
Percent U.S. Work Force
30%
25
20
15
10
5
0
1983
1984
1985
1986
1987
1988
1989
4%
7%
13%
19%
23%
26%
28%

INPUT

CONTINUED BLOODLETTING

Retailers - Stronger Chains Will Continue to Expand

- Weakness in Smaller Chains

Distributors - Rapid Squeeze

- Direct Mail Discounters = OK

Hardware/Software Manufacturers:

- Single Products Sinking
- Product Families Required

INPUT

SELLING MICROS TO CORPORATE AMERICA

- PCs: "Out"/Workstations: "In"
- Corporations Consolidating Purchasing
- New Distribution Approaches

INPUT

MICROS STIMULATING ALL INFORMATION SERVICES

- Decision-Makers Get First-Hand Experience
- Reduces Fear of Computing
- Creates Demand for More Computing Power
- Every Desk a Computing Outlet

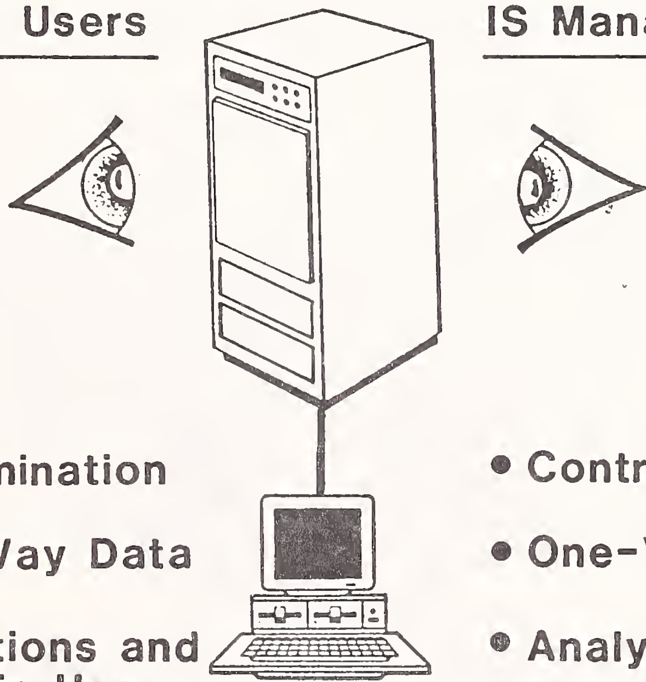
INPUT

MICRO-TO-MAINFRAME

INPUT

(54)

END-USER AND I.S. VIEW MICRO-MAINFRAME DIFFERENTLY



End Users

- Self-Determination
- Two-Way Data
- Operations and Analytic Use

IS Management

- Control
- One-Way Data
- Analytic Use

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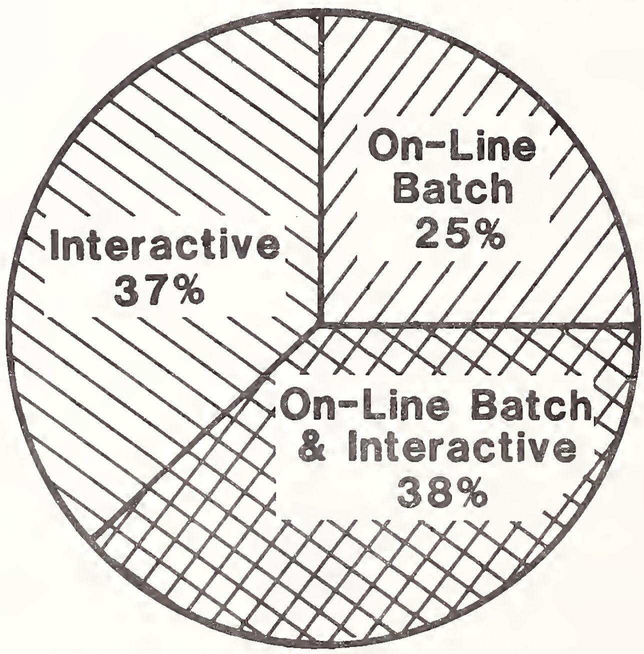
TYPES OF MICRO-MAINFRAME LINKAGES FORESEEN BY CORPORATIONS

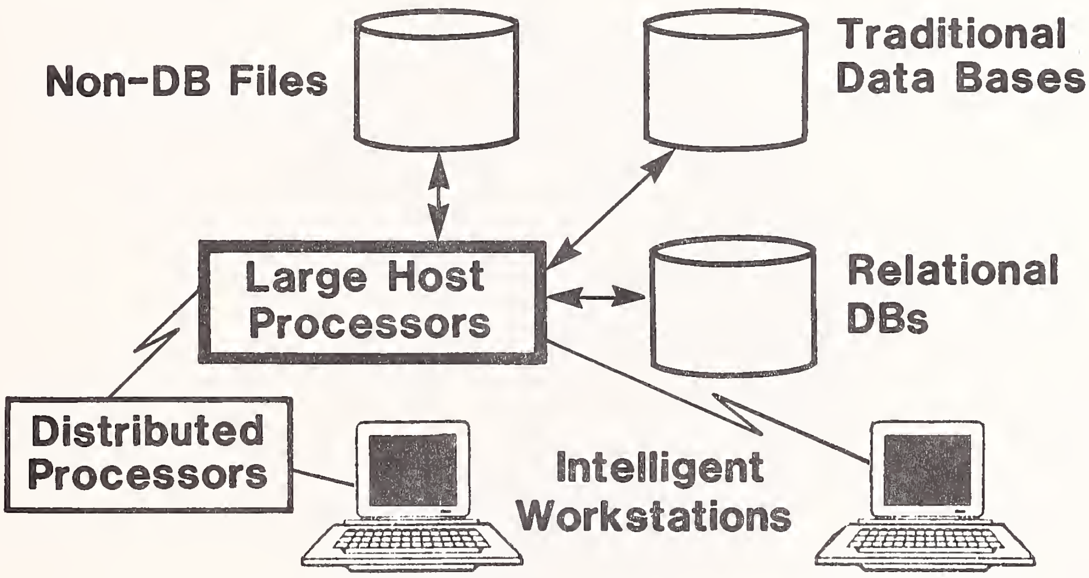


Percent of Linkage Types

INPUT

(332)

MAINFRAMES TO BECOME HUGE DATA BASE PROCESSORS



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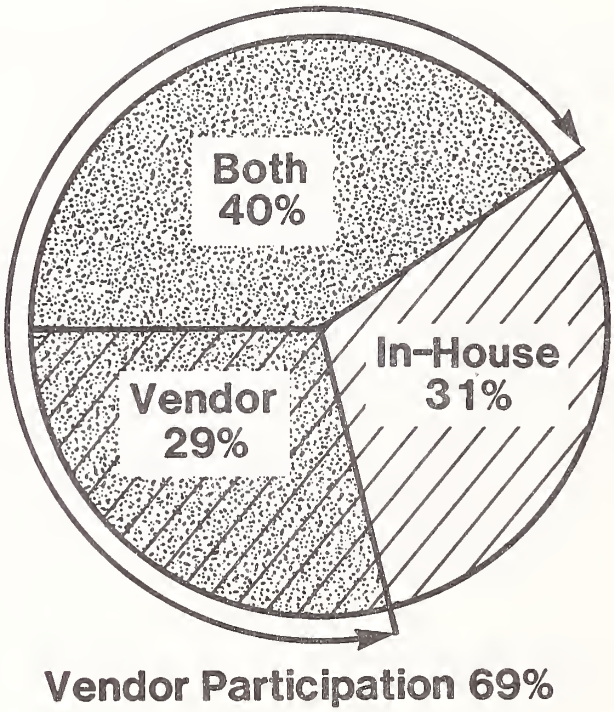
HIGH VENDOR INVOLVEMENT IN MICRO-MAINFRAME APPLICATIONS



INPUT

TELECOMMUNICATIONS

INPUT

TECHNOLOGICAL FORCES FOR CHANGE

- Component Level
  - New Transmission Media: Satellite, Optical Fiber, Micro-wave, Cable, Cellular Radio
  - Processing Elements: Increasing Level of Integration

INPUT

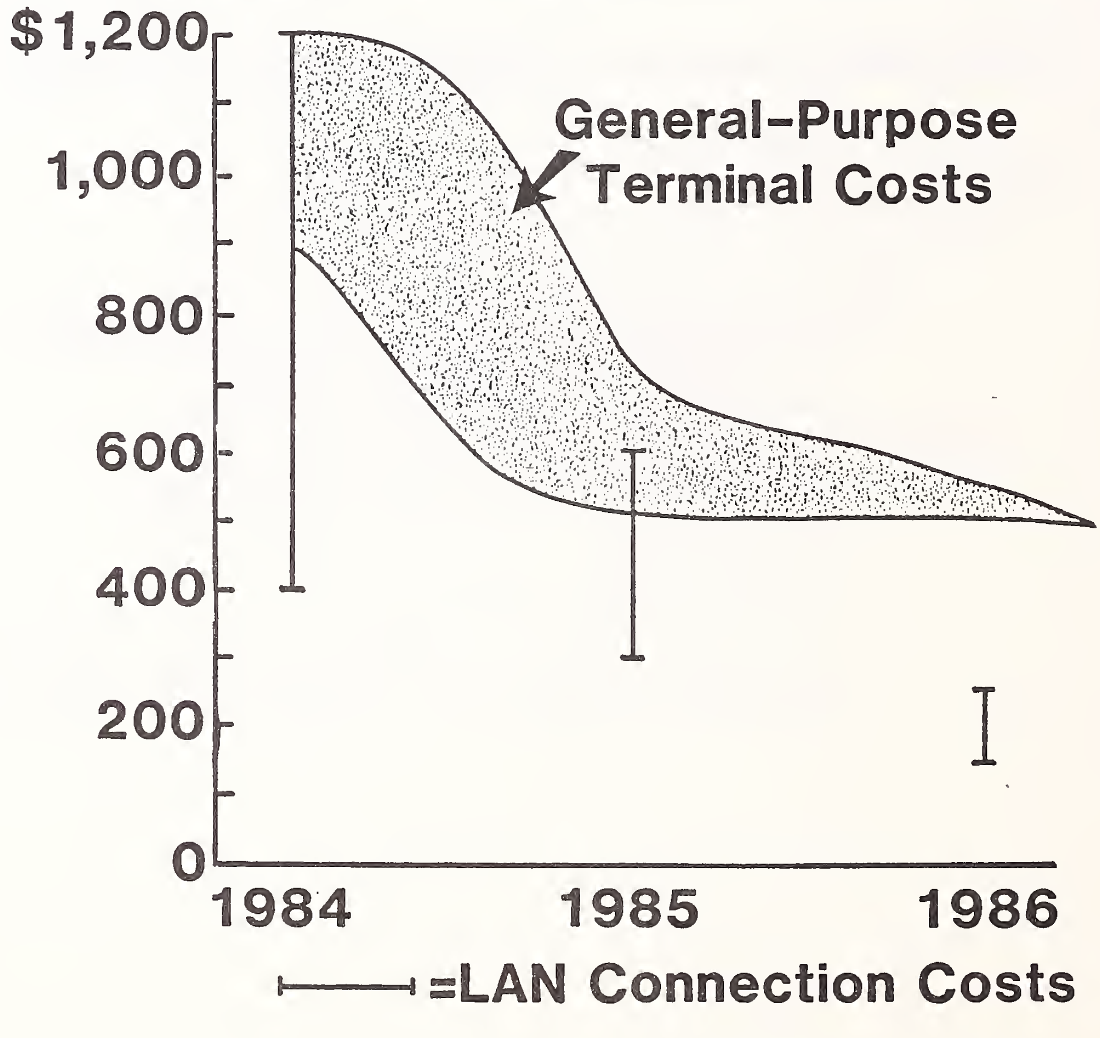
TECHNOLOGICAL FORCES FOR CHANGE

System Level

- Digitalization of Telecommunications Infrastructure: ISDN
- Spread of Packet Switching Networks
- Compression of Voice and Video

INPUT

STEEP DECLINES COMING FOR LAN AND TERMINAL COSTS



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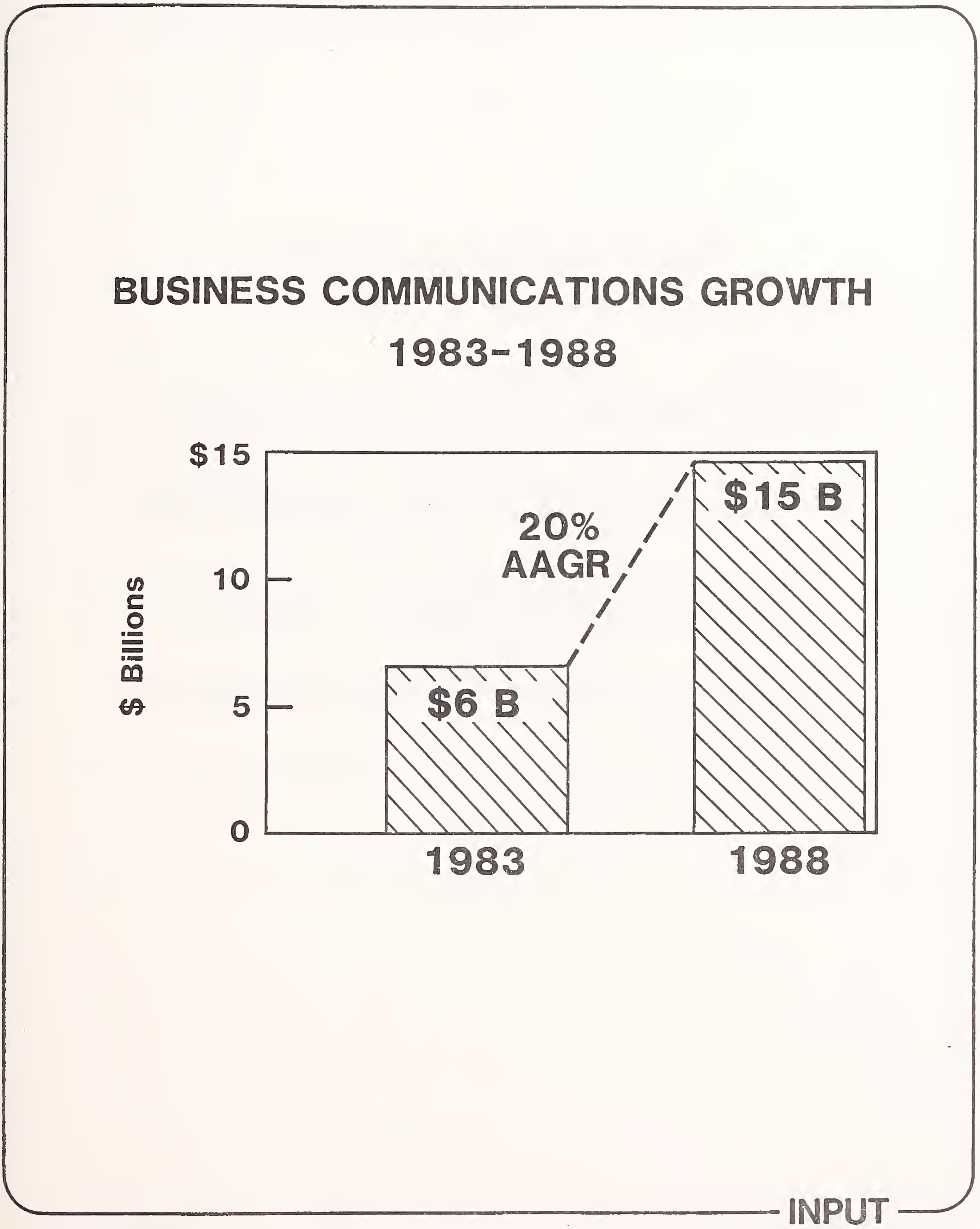
BUSINESS COMMUNICATIONS GROWTH
1983-1988
$15
10
5
0
$ Billions
20%
AAGR
$6 B
$15 B
1983
1988
INPUT

67UUCP

TELECOMMUNICATIONS: KEY ISSUES & TRENDS

- AT&T Break-Up Opens New Markets
  - ROC/AT&T Relationship Acrimonious
  - ROCs Want Less Reliance on AT&T
  - ROCs Seek New Revenue-Enhancing Services

INPUT

	Examples of Service	Competitive Characteristics Economies of Scale
Level 3: Enhanced Services	Electronic Mail, Protocol Conversion	Low
Level 2: Switched Networks	Dial-Up Telephone Network, Packet Data Networks	
Level 1: Transmission Links	Satellite, Coaxial Cable, Optical Fiber Circuits	High

INPUT

	Competitive Characteristics	
	Character of Market	Sources of Competitive Advantage
Level 3: Enhanced Services	Differentiated Quality/Service Competition	Service Innovation, Support, Software Capabilities
Level 2: Switched Networks	↕	↕
Level 1: Transmission Links	"Commodity" (Price Competition)	Technology Innovation, Volume, Standardization

INPUT

TURBULENCE IN PEOPLE

HUMATICS T.M.

INPUT

THE OFFICE: UNSAFE AT ANY SPEED?

- VDT Users
  - Higher Absenteeism, Health Problems
  - Less Job Satisfaction

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THE OFFICE: UNSAFE AT ANY SPEED?

- Lawsuits, Organized Labor Concerns
- Legislation Potential, Fear of Unknown
- Scientific Uncertainty

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COMPUTERIZATION IS CHANGING US

- Definition of "Uniquely Human" Becoming Less Clear
- The Computer as a Personal Companion
- Ourselves as a Machine
- Thus Ambivalence: Attraction and Fear

INPUT

VDT Issues

RECOMMENDATIONS

- External Humatics
  - Design "Right" VDT Into Products
  - Sell Lowered Risk, Appropriate Training
- Internal Humatics
  - Environment Improvement
  - Job Content/Training Analysis

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MARKETS

INPUT

PROCESSING SERVICES

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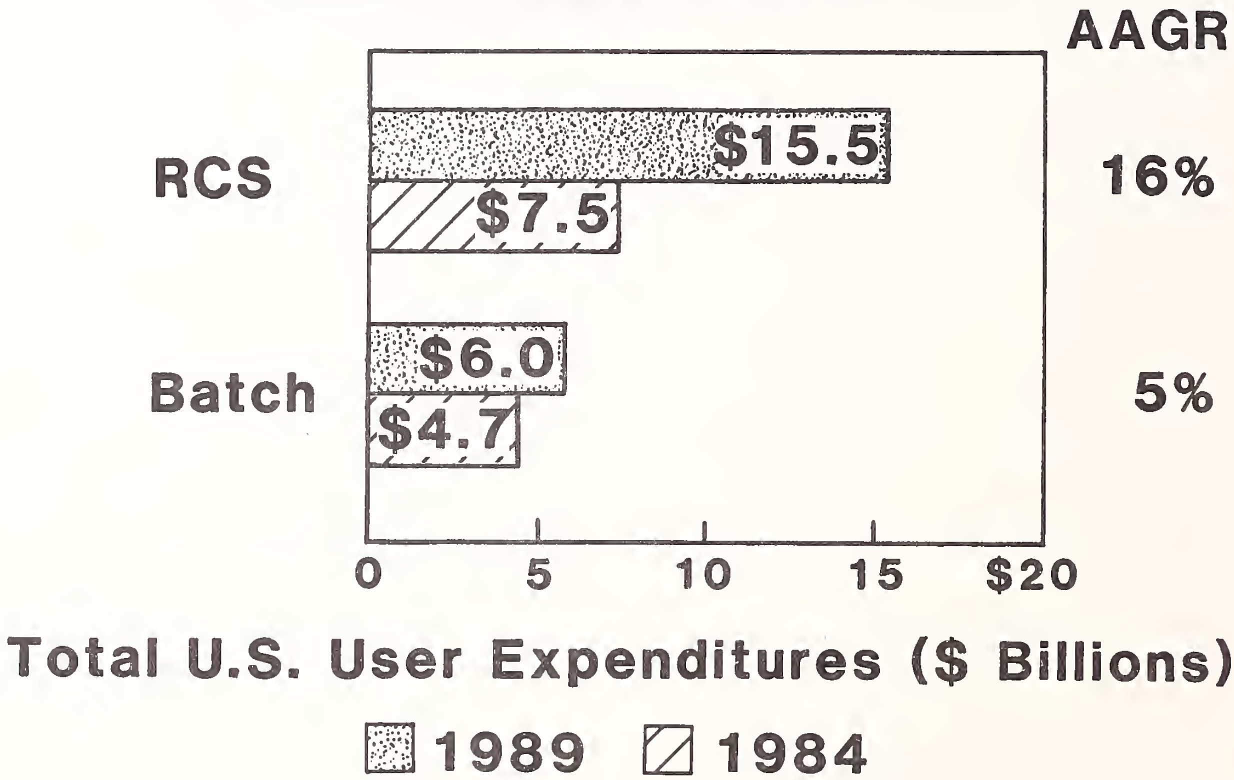
MUCH VARIABILITY WITHIN PROCESSING SERVICES



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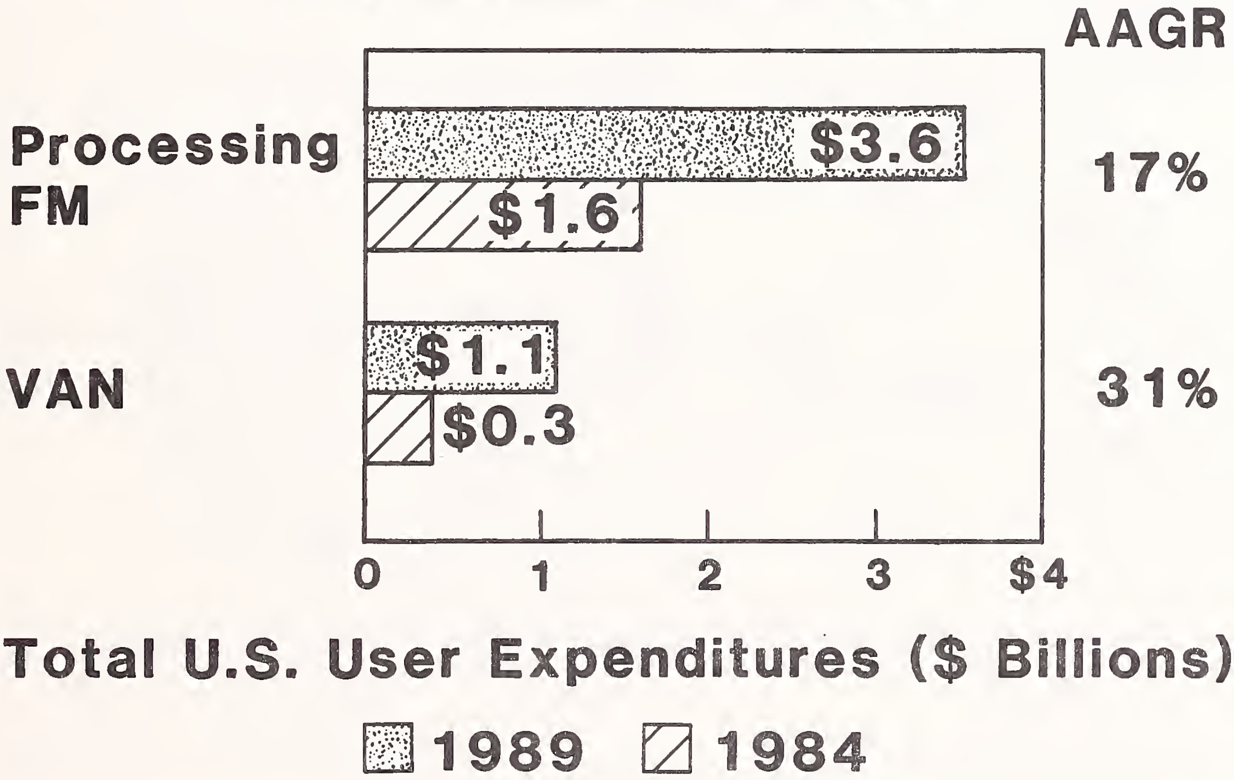
MUCH VARIABILITY WITHIN PROCESSING SERVICES



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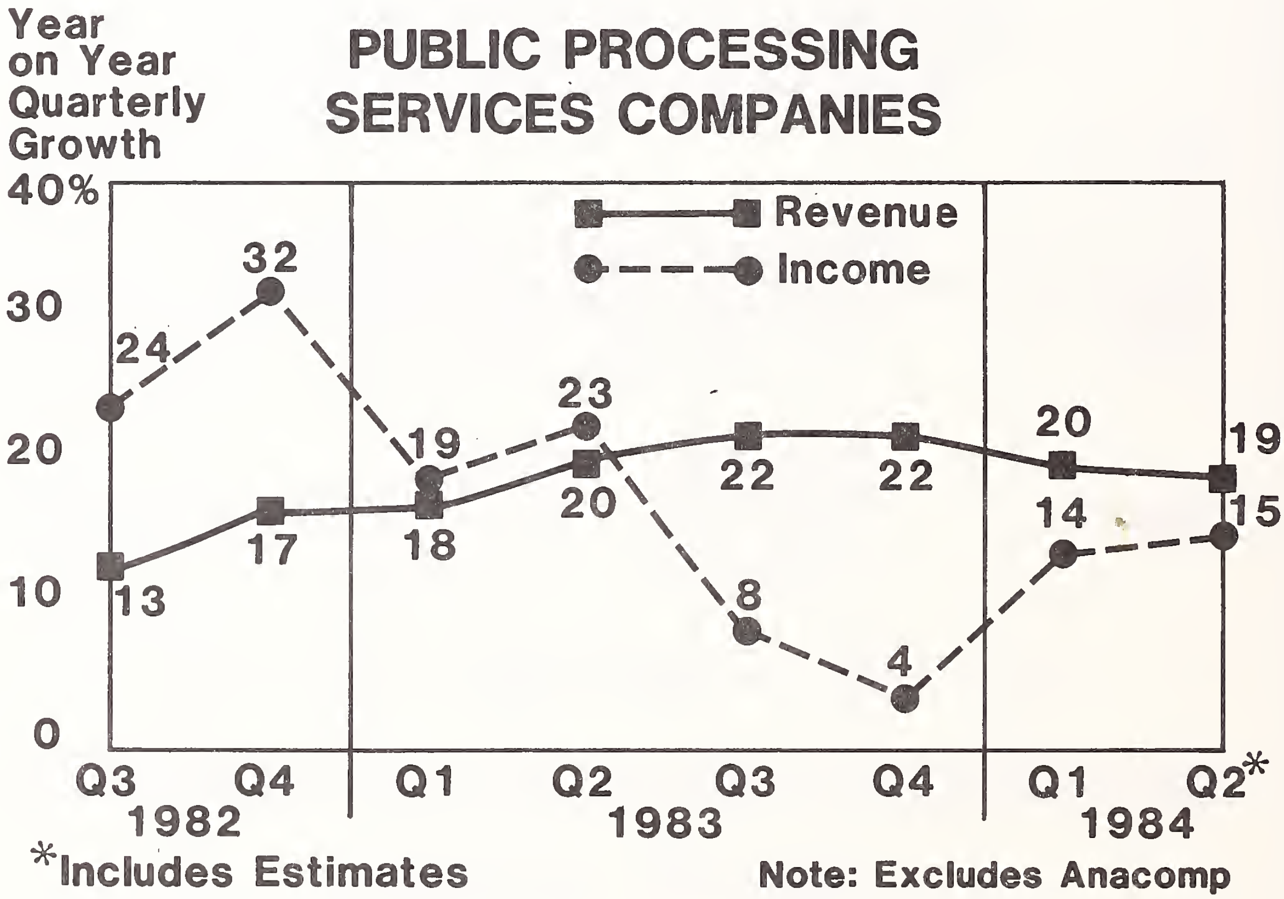

Year
on Year
Quarterly
Growth
PUBLIC PROCESSING
SERVICES COMPANIES
Revenue
Income
40%
30
20
10
0
32
24
19
23
20
19
22
22
20
14
15
17
18
13
8
4
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Q2*
1982
1983
1984
*Includes Estimates
Note: Excludes Anacomp

INPUT

Public Processing Firms

GROWTH STARS*

	Revenue	Net Income
Numerax	33%	78%
Comdata	55%	28%
Paychex	31%	36%
Quotron	29%	28%

*September 1983 to June 1984, versus Year Earlier

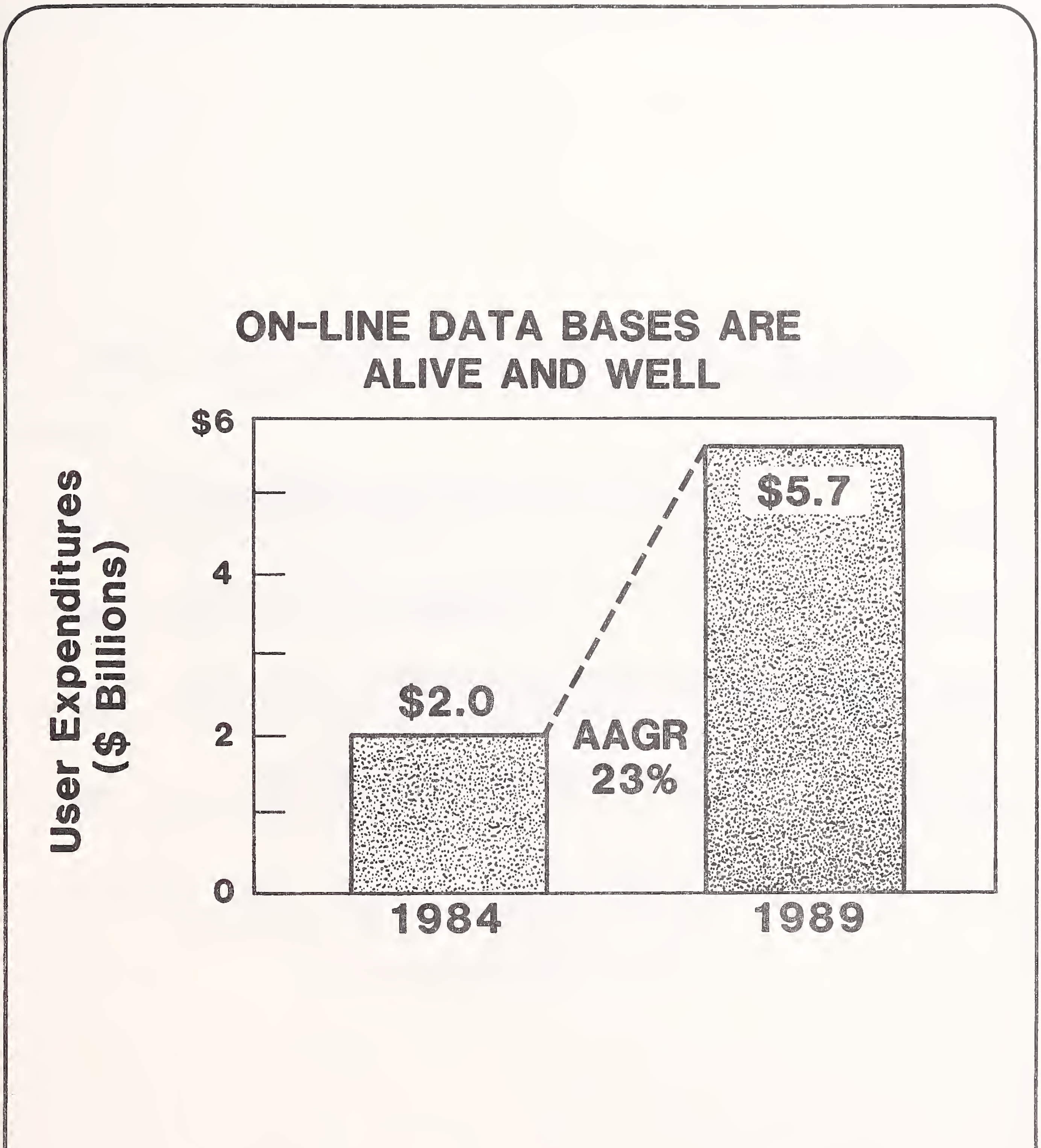
INPUT

Processing Services

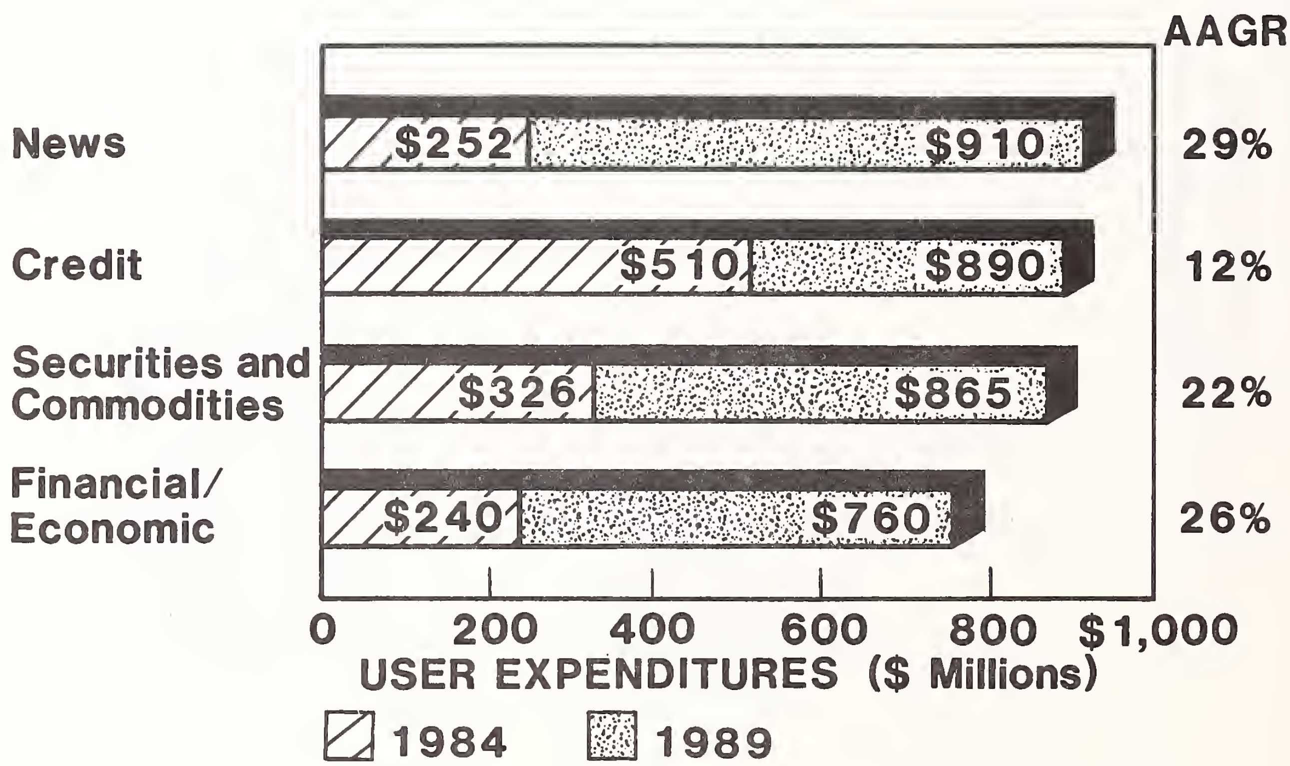
ISSUES AND TRENDS

- Positive RCS Factors
  - Industry-Specific Applications
  - On-Line Data Bases/VANS
  - EDI/EII Emergence
- "Basic" Applications Growing
  - Payroll/Tax/Direct Mail, etc.

INPUT


ON-LINE DATA BASES ARE
ALIVE AND WELL
User Expenditures
($ Billions)
$6
4
2
0
$2.0
$5.7
AAGR
23%
1984
1989
INPUT

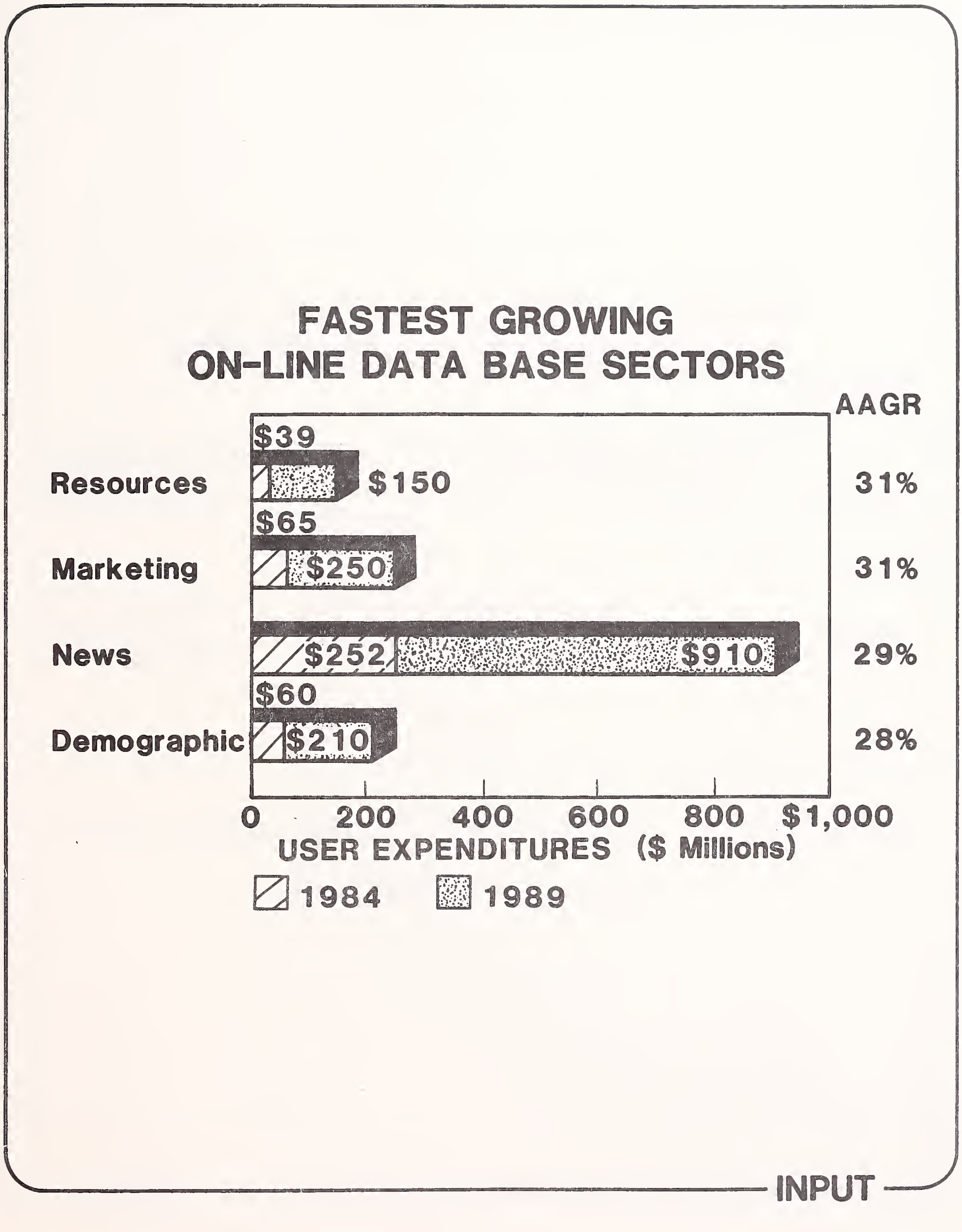
LARGEST ON-LINE DATA BASE SECTORS



INPUT

(157)

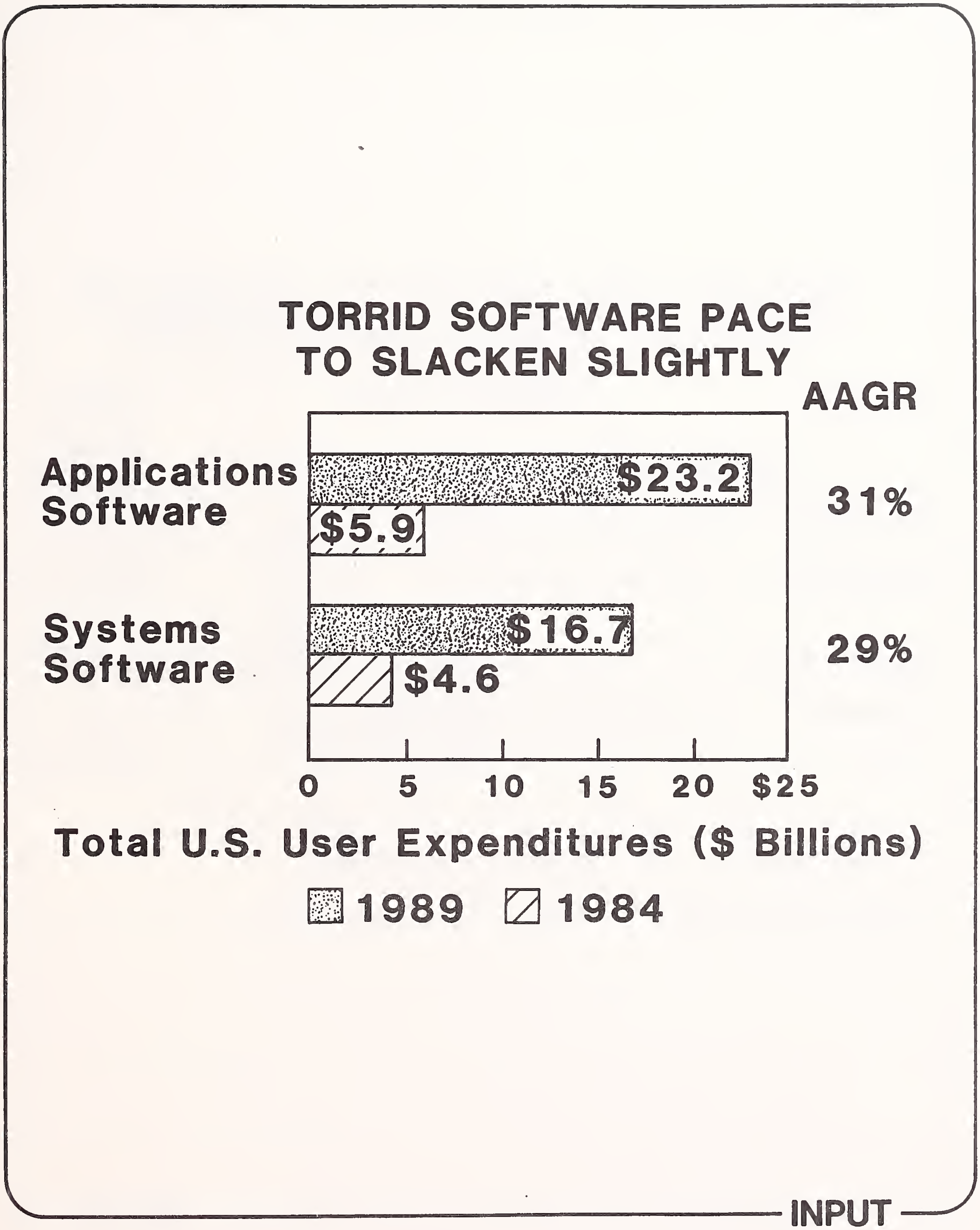
205

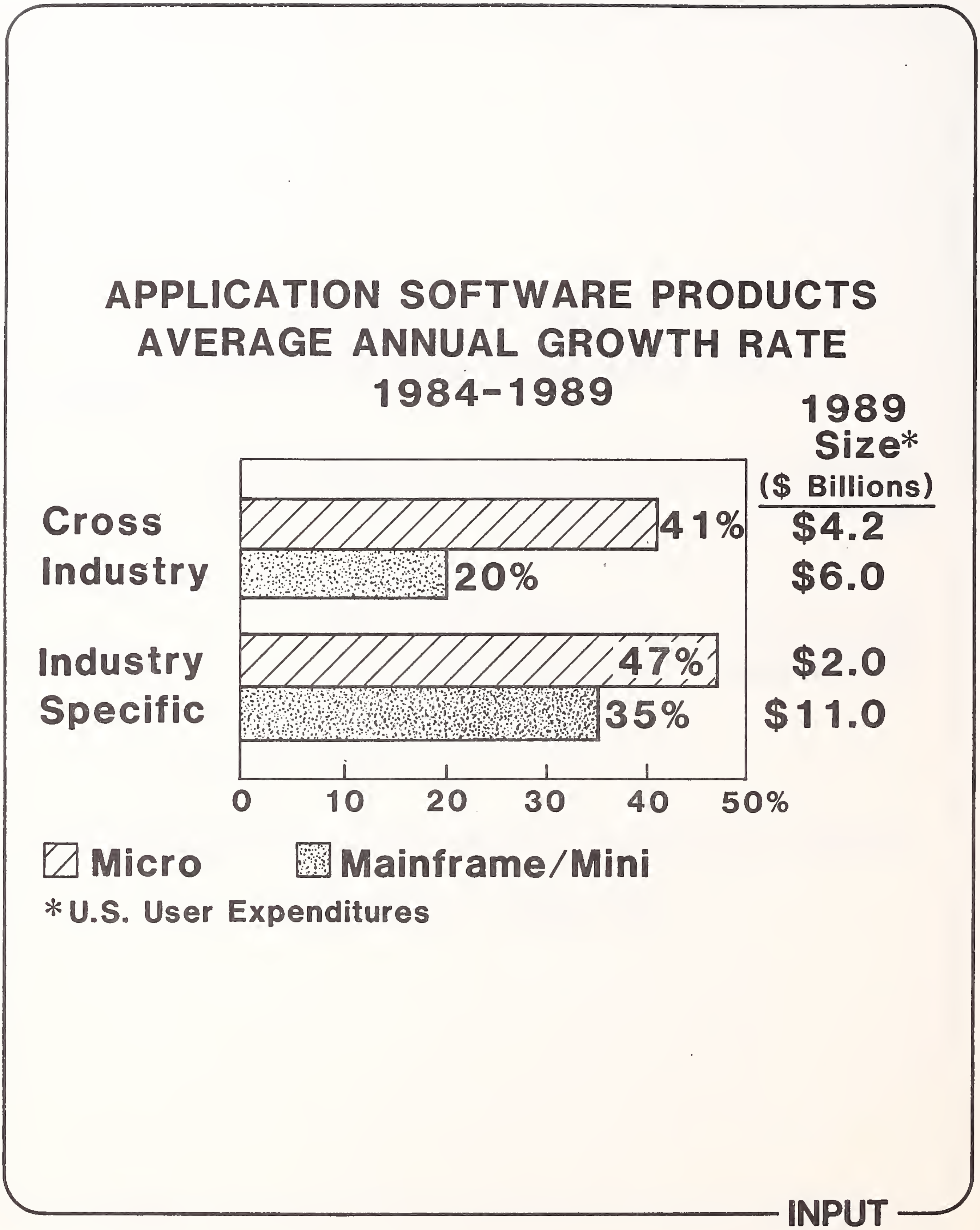

FASTEST GROWING
ON-LINE DATA BASE SECTORS
AAGR
Resources
$39
$150
31%
Marketing
$65
$250
31%
News
$252
$910
29%
Demographic
$60
$210
28%
0
200
400
600
800
$1,000
USER EXPENDITURES ($ Millions)
1984
1989
INPUT

MMCP

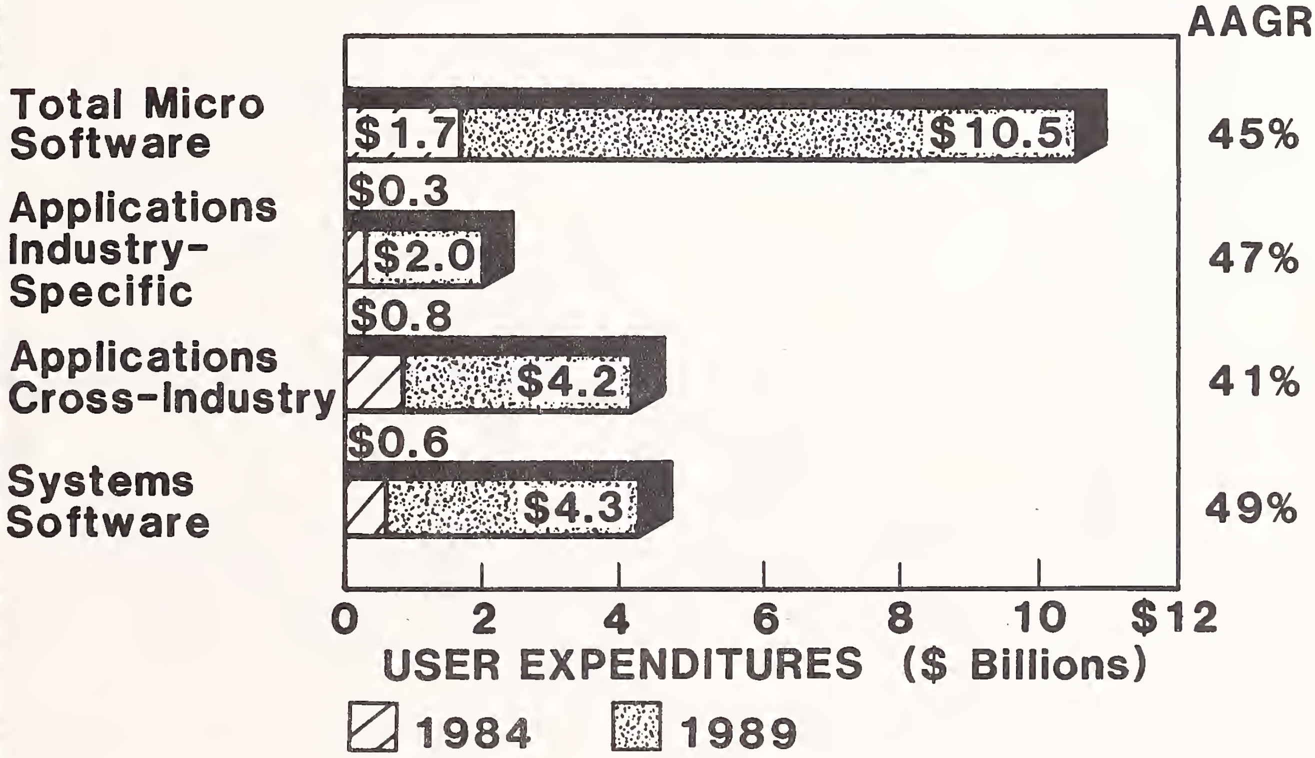
SOFTWARE PRODUCTS

INPUT

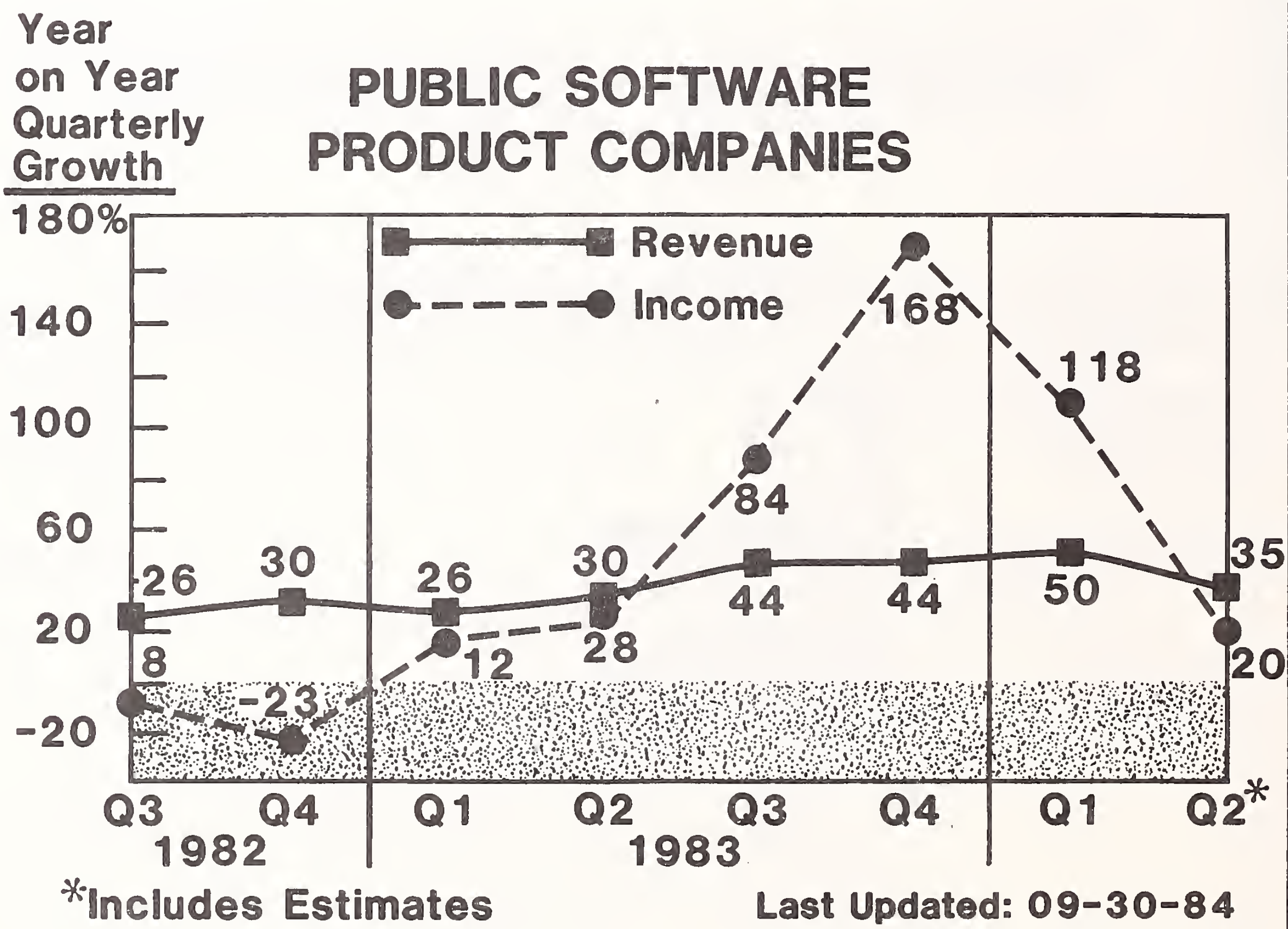

TORRID SOFTWARE PACE
TO SLACKEN SLIGHTLY
AAGR
Applications Software
$23.2
$5.9
31%
Systems Software
$16.7
$4.6
29%
0
5
10
15
20
$25
Total U.S. User Expenditures ($ Billions)
1989
1984
INPUT


APPLICATION SOFTWARE PRODUCTS
AVERAGE ANNUAL GROWTH RATE
1984-1989
1989
Size*
($ Billions)
Cross
Industry
41%
20%
$4.2
$6.0
Industry
Specific
47%
35%
$2.0
$11.0
0
10
20
30
40
50%
Micro
Mainframe/Mini
* U.S. User Expenditures
INPUT

STRONG MICRO SOFTWARE MARKET
1984-1989



INPUT



Year on Year Quarterly Growth
PUBLIC SOFTWARE PRODUCT COMPANIES
180%
140
100
60
20
-20
Revenue
Income
26
30
26
30
44
44
50
35
8
-23
12
28
84
168
118
20
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Q2*
1982
1983
*Includes Estimates
Last Updated: 09-30-84

INPUT

Public Software Products Firms

GROWTH STARS*

	Revenue	Net Income
Lotus	571%	673%
Scientific Software	133%	95%
Sterling Software	161%	17%
Hogan	115%	56%

*September 1983 to June 1984, versus Year Earlier

INPUT

1985 GENERATION OF PRODUCTS

- IBM-Based
- Proprietary Development Methods
- On-Line, Non-Stop
- Distributed Processing

INPUT

1985 GENERATION OF PRODUCTS

- Multi-Tasking
- Self-Documented
- CAI
- DB/DC Driven

INPUT

SOFTWARE PRODUCTS TRENDS
(Mainframe/Mini)

- More Professional Services Interest (+48%)
- Expansion to Integrated Applications
  - Same Delivery Mode
  - New Segments X-I → I-S
    Sys. SW → Appl. SW

INPUT

SOFTWARE PRODUCTS TRENDS
(Mainframe/Mini)

- More Joint Ventures
- Micro-Like Functions Appearing on Mainframes
- Pricing to be Relatively Stable

INPUT

SOFTWARE PRODUCTS TRENDS
(Micro)

- Business Economics/Strategy Still Evolving
- Dealers Consolidating
- More "Big Ticket" Market-Specific Products
- Pricing Volatility to Continue
- More Vendor Consolidation

INPUT

(392)

OPTICAL DISK/PC INTERFACES

- Here Now
- No "Software" Except Films
- Education/Entertainment First Use

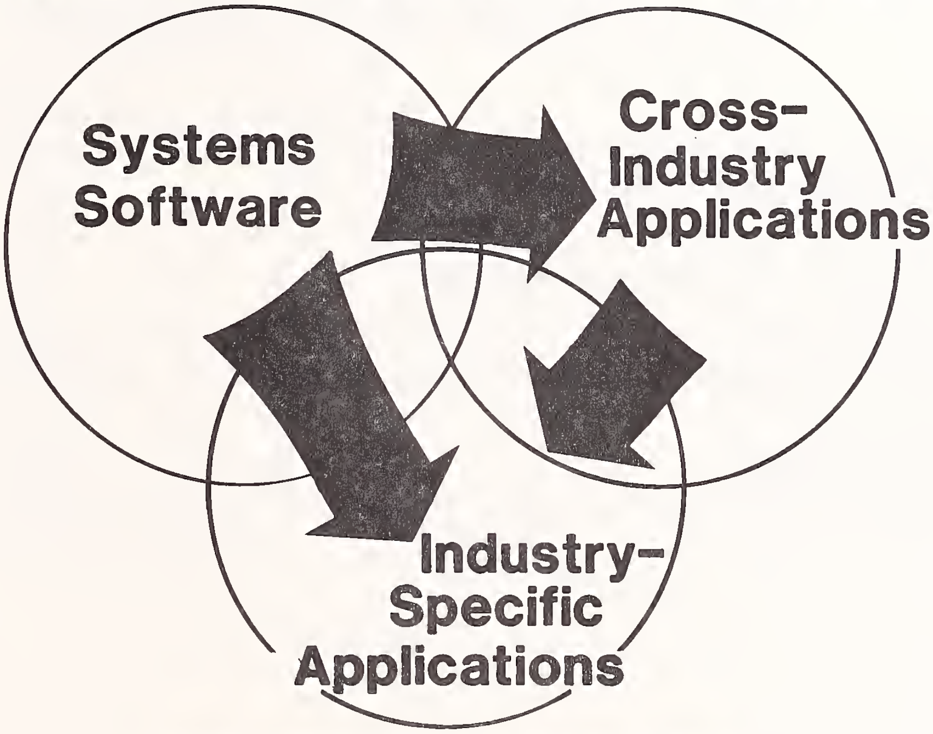
INPUT

INTEGRATED APPLICATIONS - THE THREAT

- Growth at Expense of Non-Integrated Applications
- Much of Business Will Go to Systems Vendors
- "One-Stop Shopping"

INPUT

SYSTEMS SOFTWARE VENDORS MOST AGGRESSIVE "INTEGRATORS"



Integration Evolution

INPUT

MMCP

MAINFRAME PRICING RANKS LOW

	Rankings	
	Users	Vendors
Ease of Use	1	3
Soft Performance	2	9
Documentation	4	10
Pricing	15	16

INPUT

CONCLUSIONS
1985-1986 PRICING LEVELS
APPLICATIONS SOFTWARE

	Mainframe and Mini	Micro
Industry Specific	Stable	Up Much
Cross Industry	Stable	Up Some

INPUT

CONCLUSIONS
1985-1986 PRICING LEVELS
SYSTEMS SOFTWARE

	Mainframe and Mini	Micro
Application Development Tools	Down Little	Down Some
Systems Control	Down Little	Down Some

INPUT

CONCLUSIONS
PRICING STRUCTURES

	Mainframe and Mini	Micro
Site Licenses	More	More
Usage Pricing	More	More

INPUT

Software Products

RECOMMENDATIONS

- Integrate Offerings
- Expand to Full Service
- Mainframers: Formalize Micro Strategy
- Systems Software: Move to End-User Controlled Products

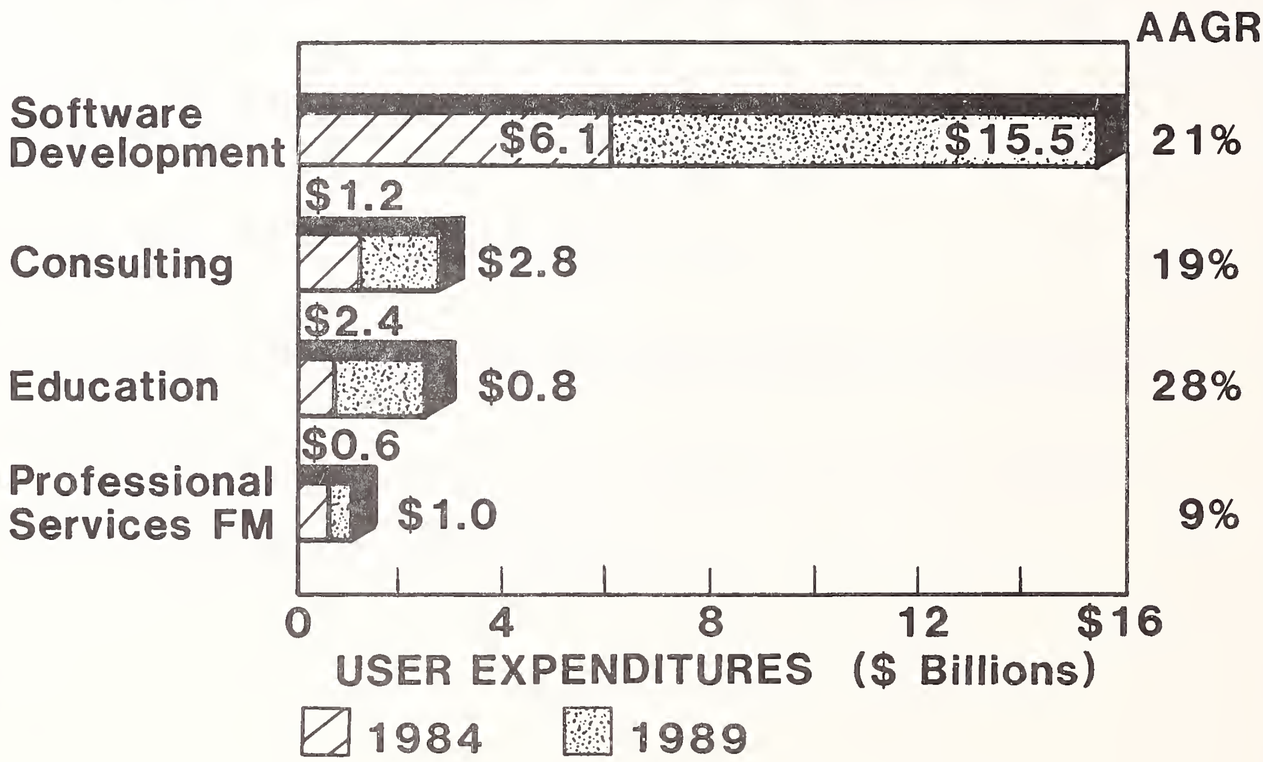
INPUT

(393)

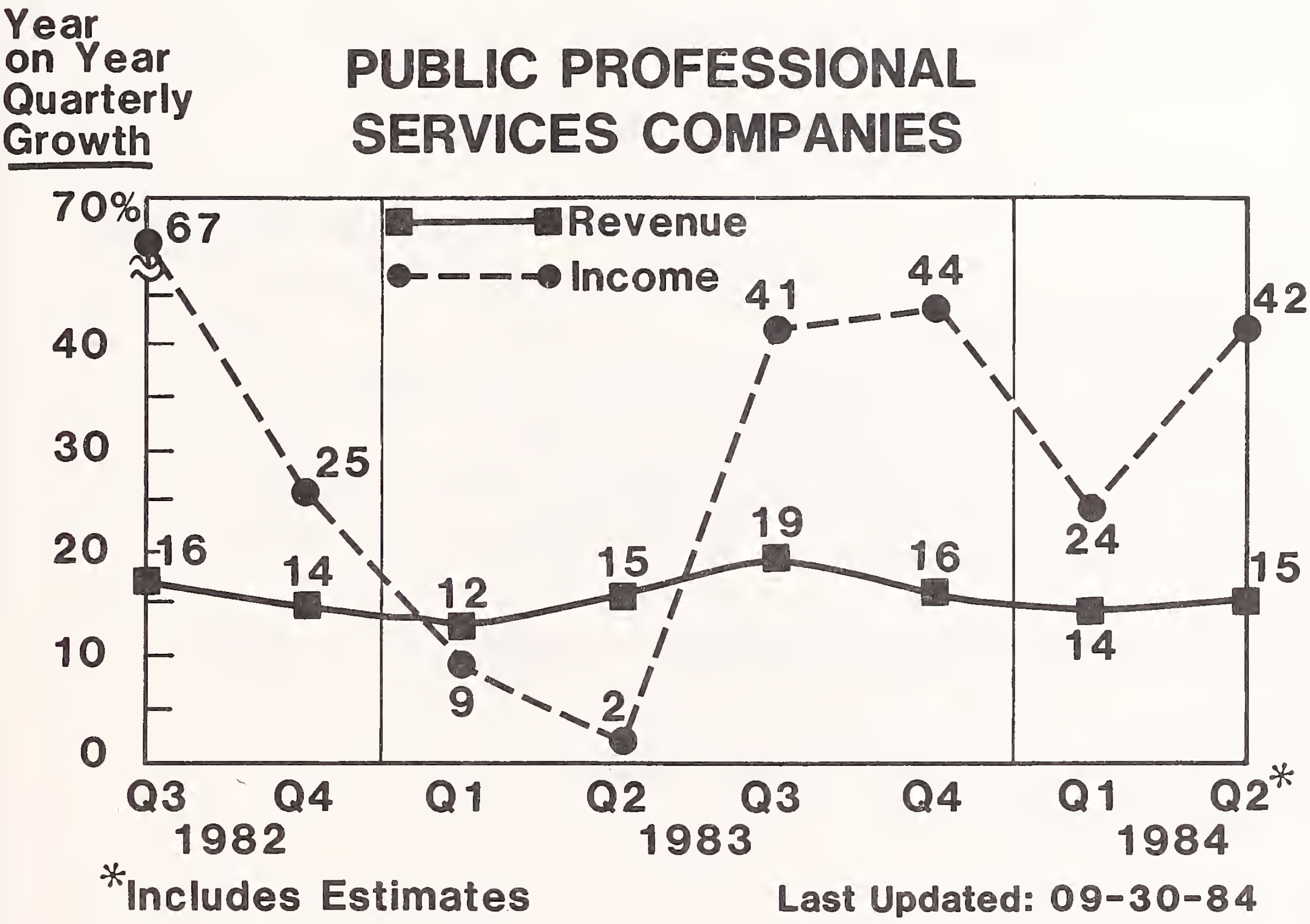
PROFESSIONAL SERVICES

INPUT

STRENGTH IN PROFESSIONAL SERVICES



INPUT



Year on Year Quarterly Growth
PUBLIC PROFESSIONAL SERVICES COMPANIES
Revenue
Income
70%
40
30
20
10
0
67
25
9
2
41
44
24
42
16
14
12
15
19
16
14
15
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Q2*
1982
1983
1984
*Includes Estimates
Last Updated: 09-30-84

INPUT

Public Professional Service Firms

GROWTH STARS*

	Revenue	Net Income
AGS Computer	92%	87%
Computer Horizons	58%	67%
Auxton Computer	42%	44%
Computer Task Group	50%	29%

*September 1983 to June 1984, versus Year Earlier

INPUT

Cross-Industry Education and Training

ISSUES AND TRENDS

- Large Demand
  - 23 Million Micros Installed by 1989
  - More Integrated (Complex) Systems Evolving
- More Computer-Based Training

INPUT

ISSUES AND TRENDS

- Vendors Expanding Product Lines
  - Deltak, ASI (Distributors, Electronic Delivery)
  - NTS, ATI (PC Diskette-Based)
  - CDC (Multi-Mode)

INPUT

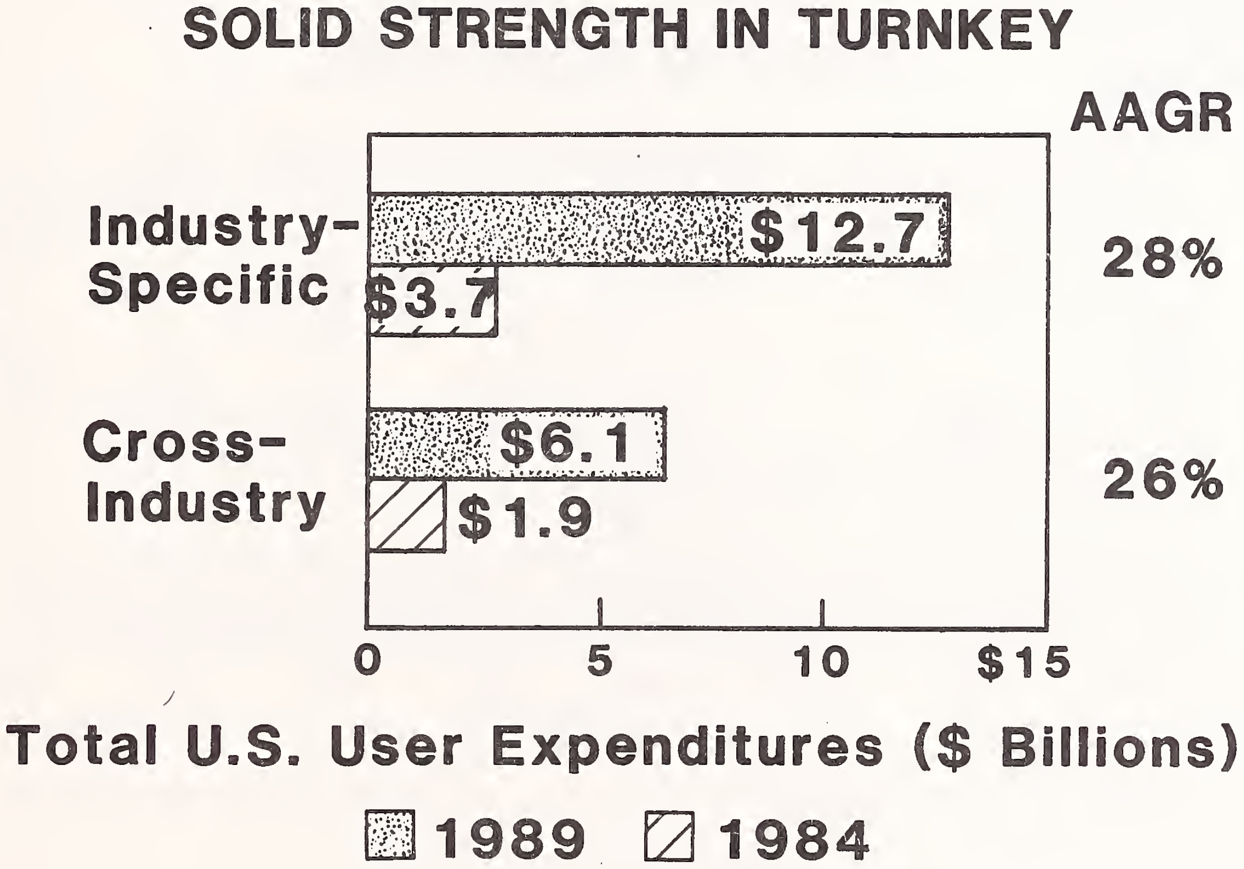
PROFESSIONAL SERVICES TRENDS

- National Firms Emerging
- Move to Vertical Specialization
- More Software Product Interest
  - Product Offerings
  - Partnerships
- Major Systems Integration Opportunities

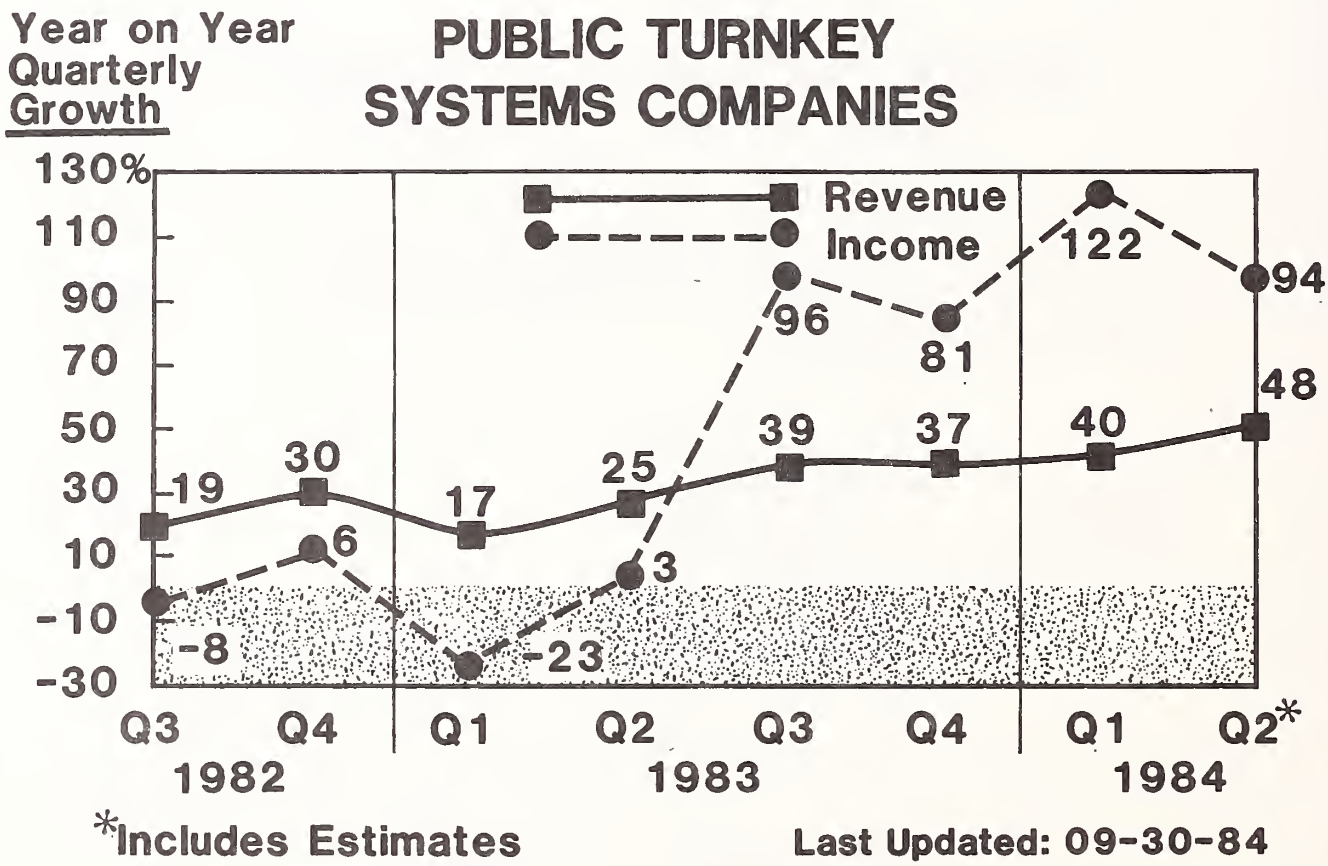
INPUT

TURNKEY SYSTEMS

INPUT


SOLID STRENGTH IN TURNKEY
AAGR
Industry-Specific
$12.7
$3.7
28%
Cross-Industry
$6.1
$1.9
26%
0
5
10
$15
Total U.S. User Expenditures ($ Billions)
1989
1984

INPUT


Year on Year
Quarterly
Growth
PUBLIC TURNKEY
SYSTEMS COMPANIES
130%
110
90
70
50
30
10
-10
-30
Revenue
Income
19
30
17
25
39
37
40
48
-8
6
-23
3
96
81
122
94
Q3
Q4
Q1
Q2
Q3
Q4
Q1
Q2*
1982
1983
1984
*Includes Estimates
Last Updated: 09-30-84

INPUT

Public Turnkey Systems Firms

GROWTH STARS

	Revenue	Net Income
Daisy Systems	366%	775%
Intergraph	69%	116%
ASK Computer	63%	67%

INPUT

Turnkey Systems

ISSUES AND TRENDS

- Growth Rate Close to Software Products'
- Sources of Strength
  - Economic Recovery
  - Improving Price-Performance
  - Micro Acceptance, CAD/CAM
- Attractive Targets - Financial/Medical

INPUT

(504)

THIRD-PARTY MAINTENANCE

- Strong Growth

  1984: $1.1 Billion

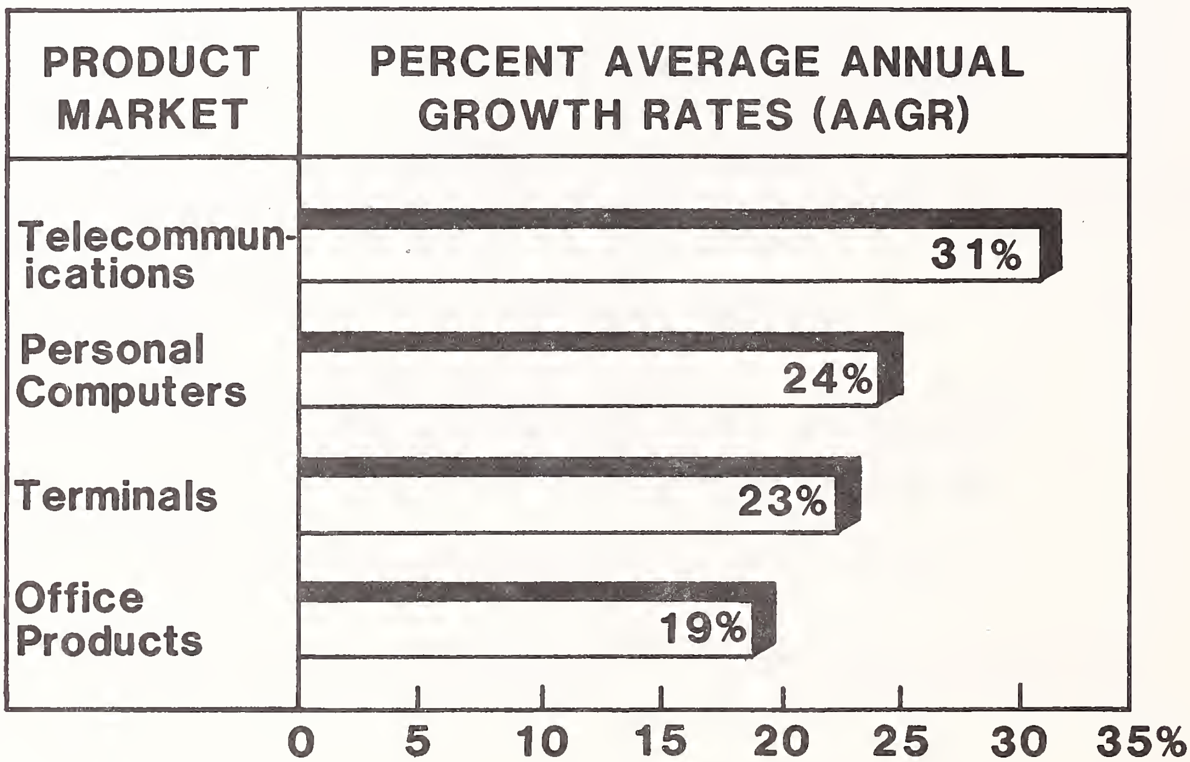
  1989: $2.5 Billion

  AAGR = 17%

- Mostly Vendor-Related Growth Limits

INPUT

FAST-GROWING TPM MARKETS



INPUT

THIRD-PARTY MAINTENANCE

- "New" Vendors Emerging

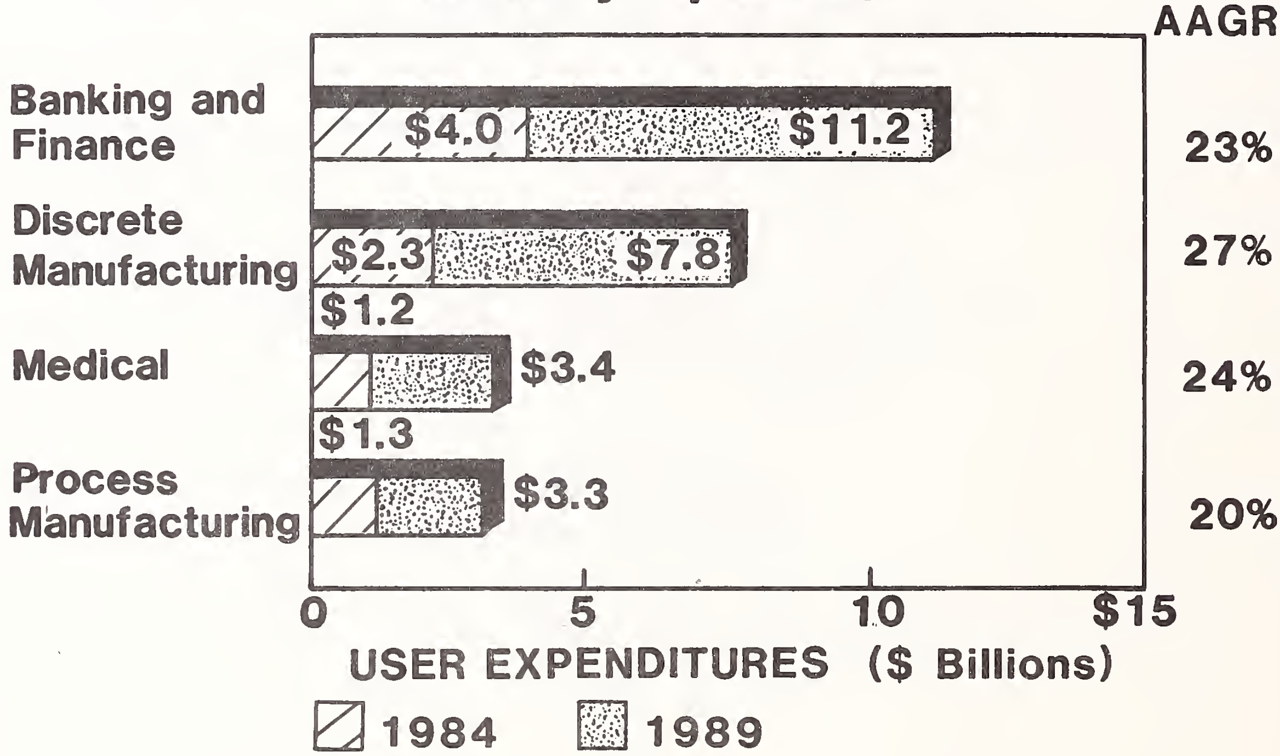
  (DEC, Honeywell, NAS,
  AT&T, NCR)

- Vendor Shakeout by 1985

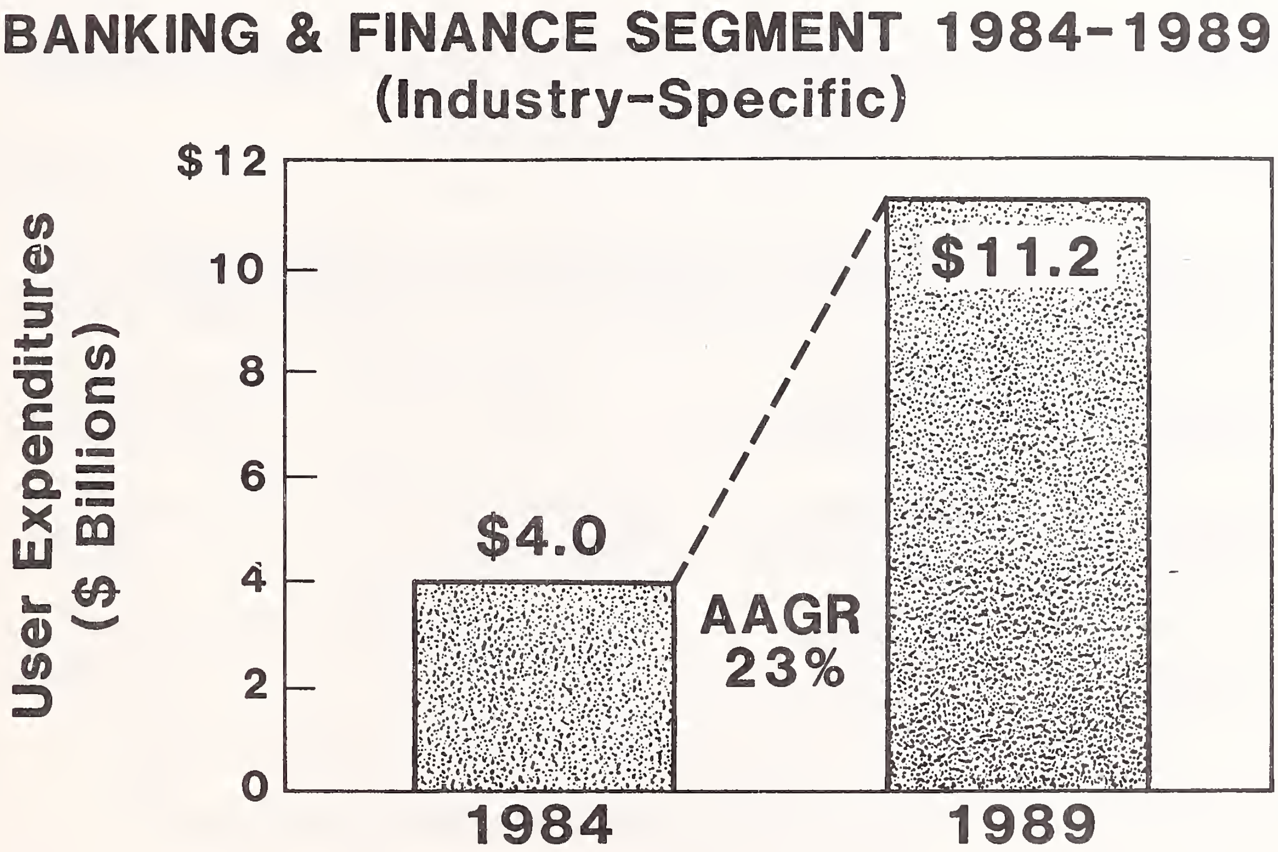
INPUT

MMCP

FOUR LARGEST ALSO GROWING FAST
(Industry-Specific)

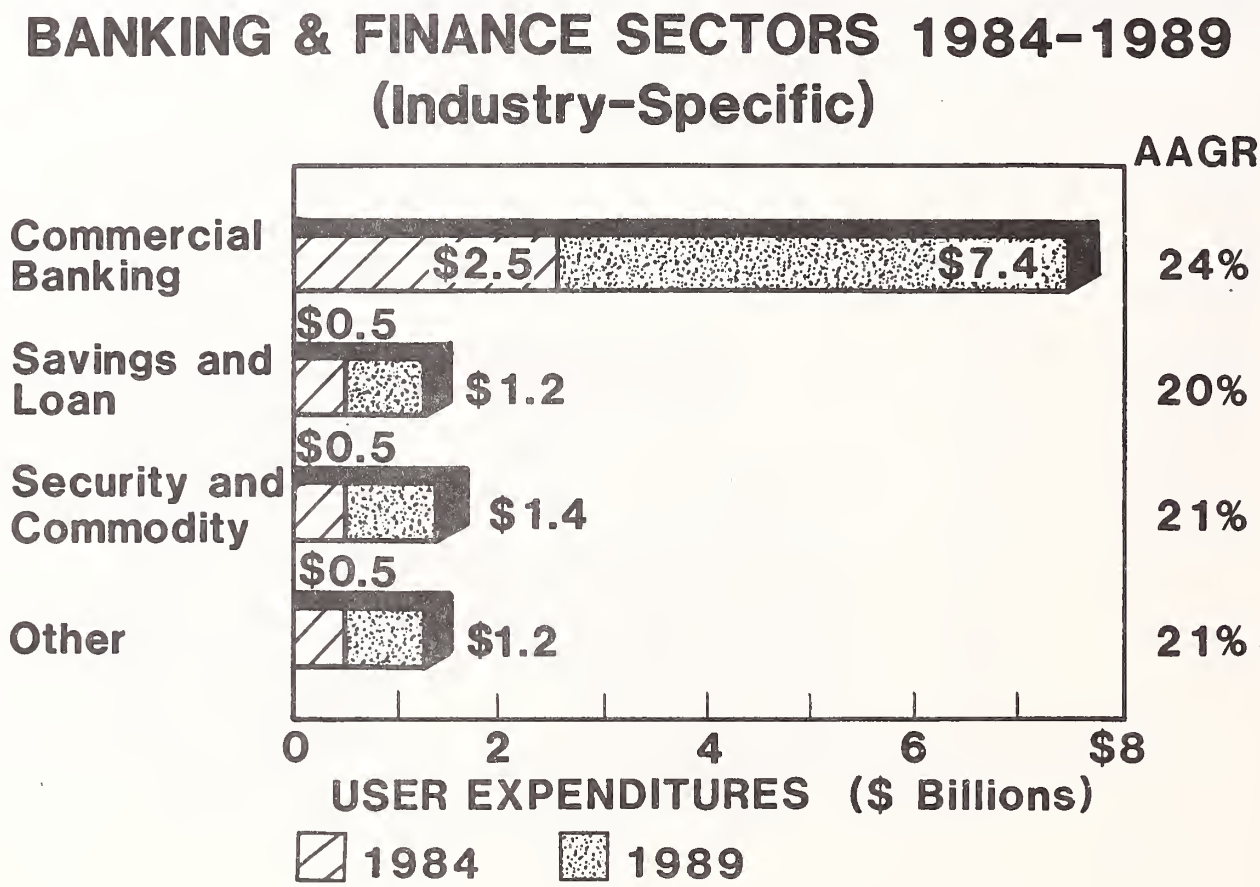


INPUT


BANKING & FINANCE SEGMENT 1984-1989
(Industry-Specific)
User Expenditures
($ Billions)
$12
10
8
6
4
2
0
$4.0
AAGR
23%
$11.2
1984
1989

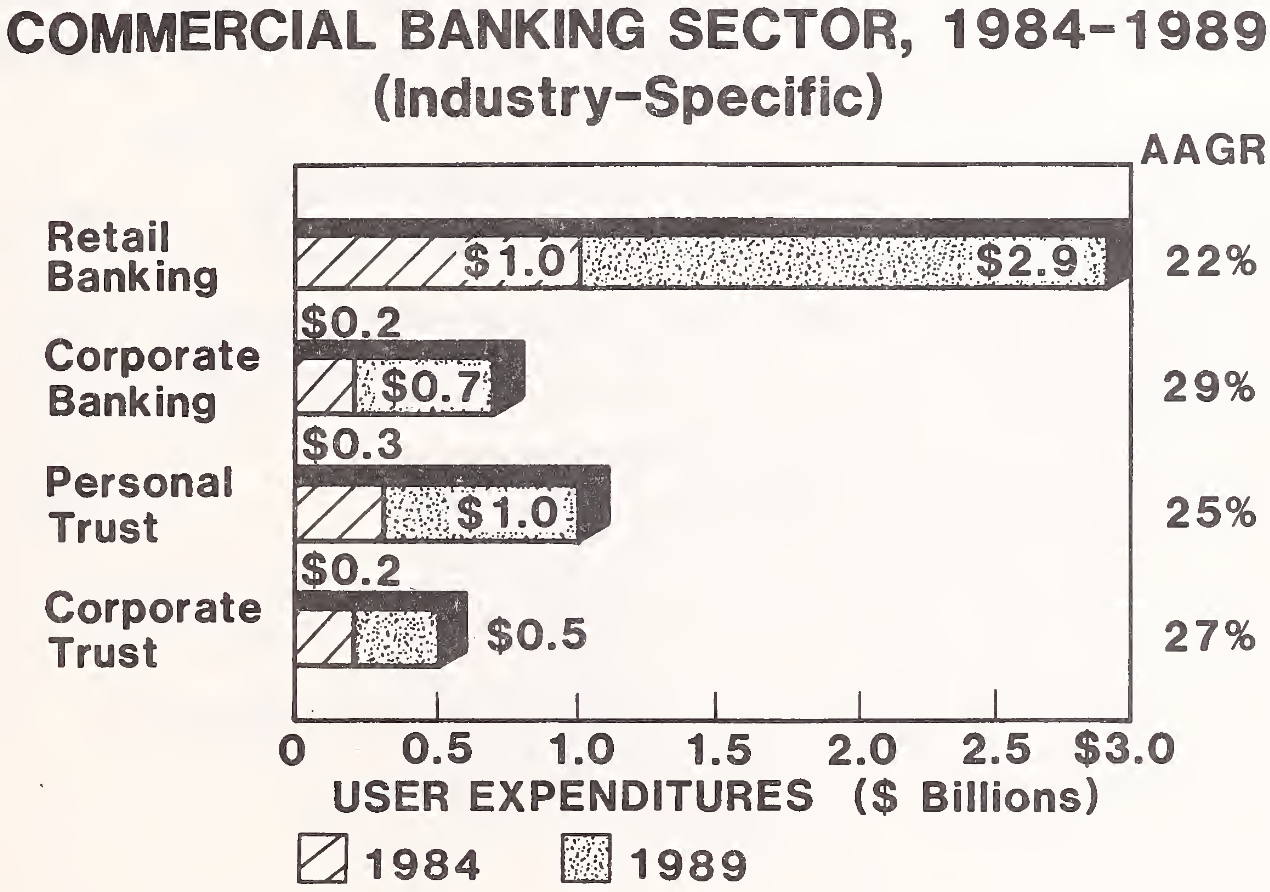
INPUT

MMCP


BANKING & FINANCE SECTORS 1984-1989
(Industry-Specific)
AAGR
Commercial Banking
$2.5
$7.4
24%
Savings and Loan
$0.5
$1.2
20%
Security and Commodity
$0.5
$1.4
21%
Other
$0.5
$1.2
21%
0
2
4
6
$8
USER EXPENDITURES ($ Billions)
1984
1989

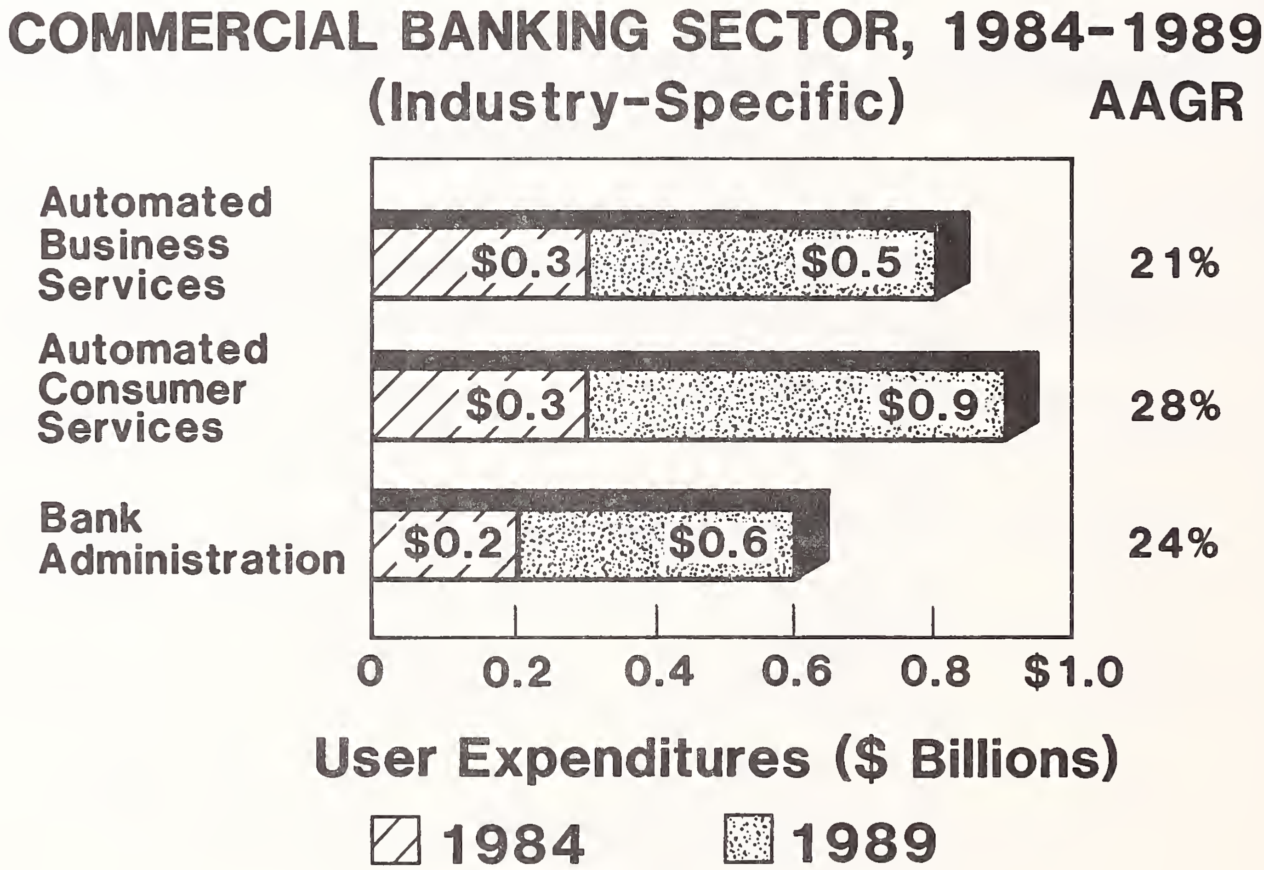
INPUT

(9)


COMMERCIAL BANKING SECTOR, 1984-1989
(Industry-Specific)
AAGR
Retail Banking
$1.0
$2.9
22%
Corporate Banking
$0.2
$0.7
29%
Personal Trust
$0.3
$1.0
25%
Corporate Trust
$0.2
$0.5
27%
0
0.5
1.0
1.5
2.0
2.5
$3.0
USER EXPENDITURES ($ Billions)
1984
1989

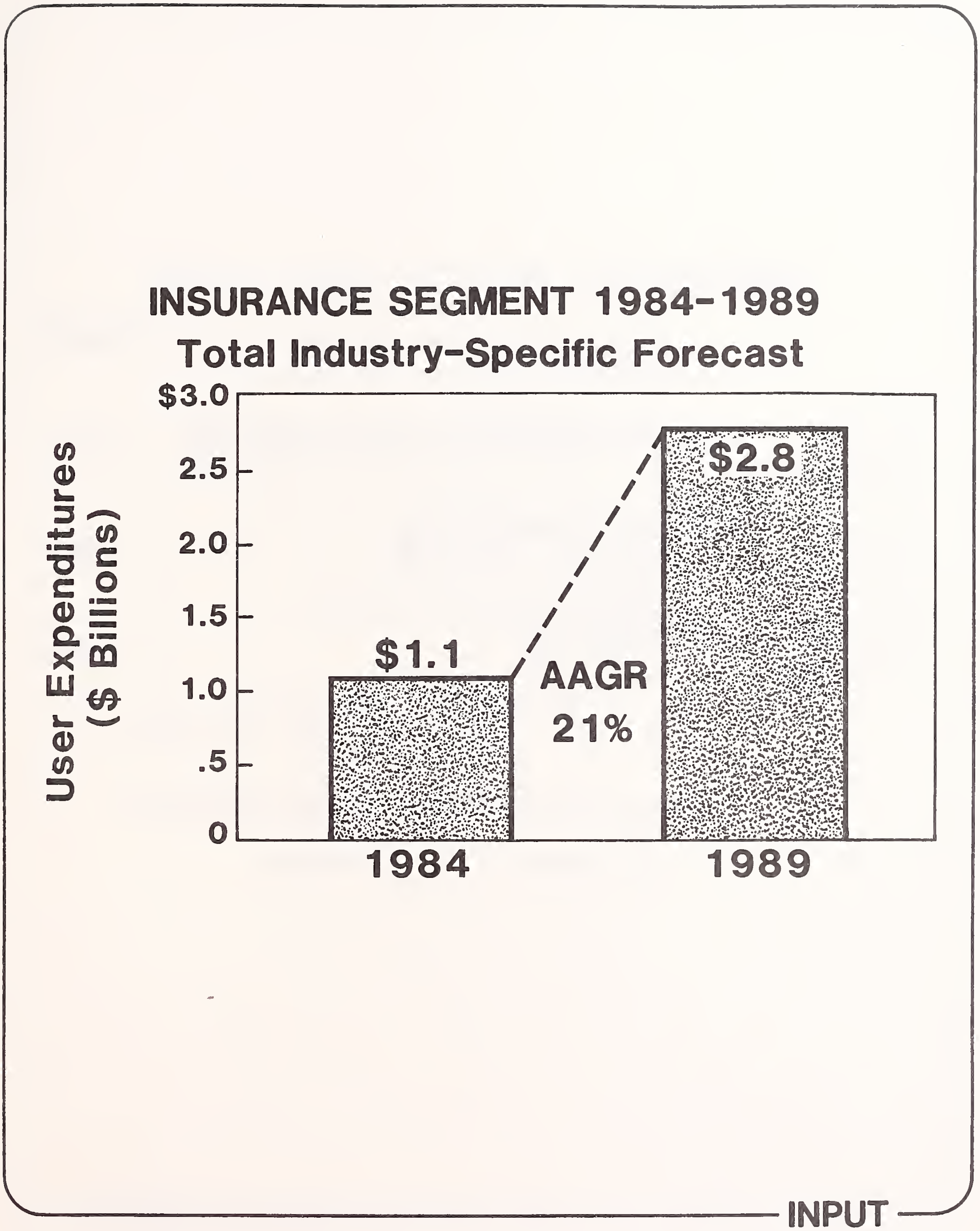
INPUT

MMCP

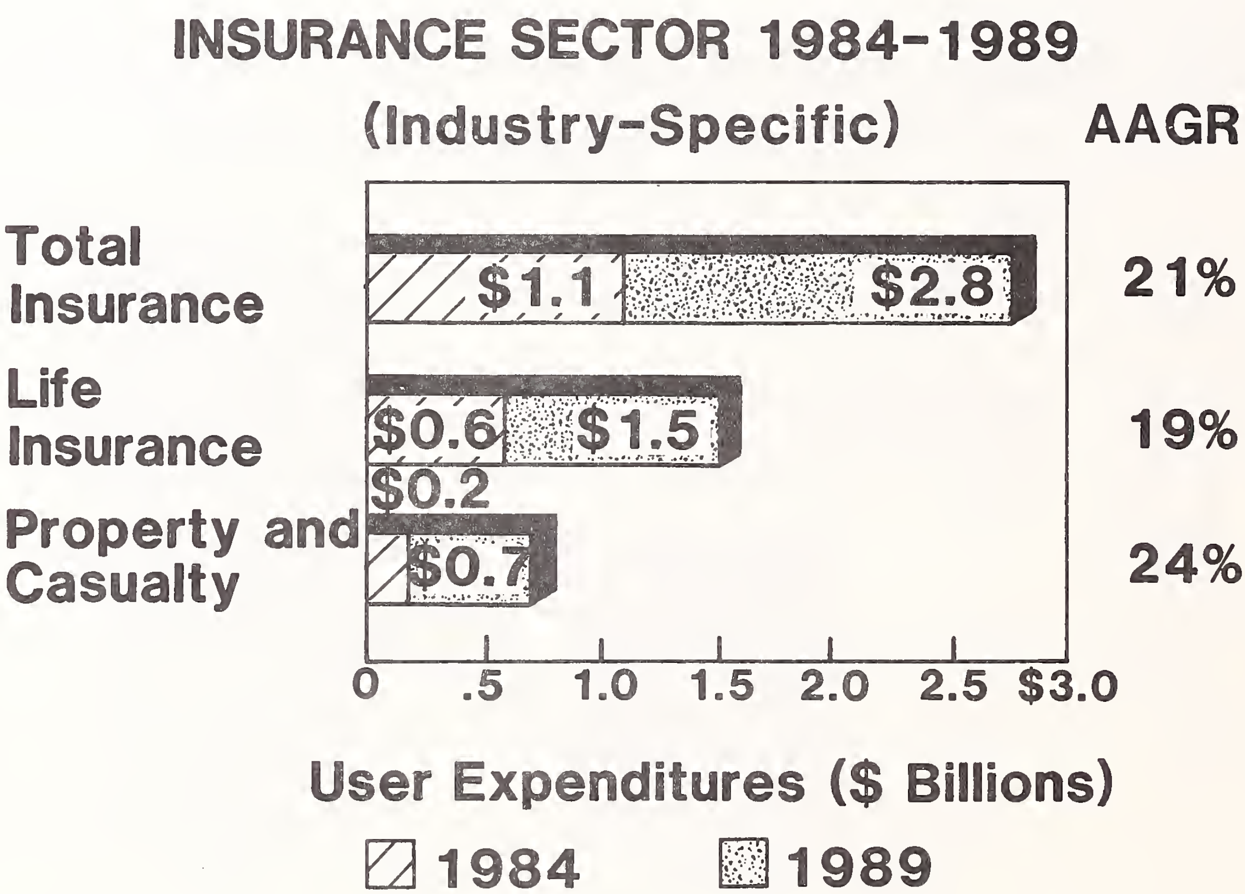

COMMERCIAL BANKING SECTOR, 1984-1989
(Industry-Specific)
AAGR
Automated Business Services
$0.3
$0.5
21%
Automated Consumer Services
$0.3
$0.9
28%
Bank Administration
$0.2
$0.6
24%
0
0.2
0.4
0.6
0.8
$1.0
User Expenditures ($ Billions)
1984
1989

INPUT

(202)


INSURANCE SEGMENT 1984-1989
Total Industry-Specific Forecast
User Expenditures ($ Billions)
$3.0
2.5
2.0
1.5
1.0
.5
0
$1.1
$2.8
AAGR 21%
1984
1989
INPUT

MMCP


INSURANCE SECTOR 1984-1989
(Industry-Specific)
AAGR
Total Insurance
$1.1
$2.8
21%
Life Insurance
$0.6
$1.5
19%
$0.2
Property and Casualty
$0.7
24%
0
.5
1.0
1.5
2.0
2.5
$3.0
User Expenditures ($ Billions)
1984
1989

INPUT

(107)

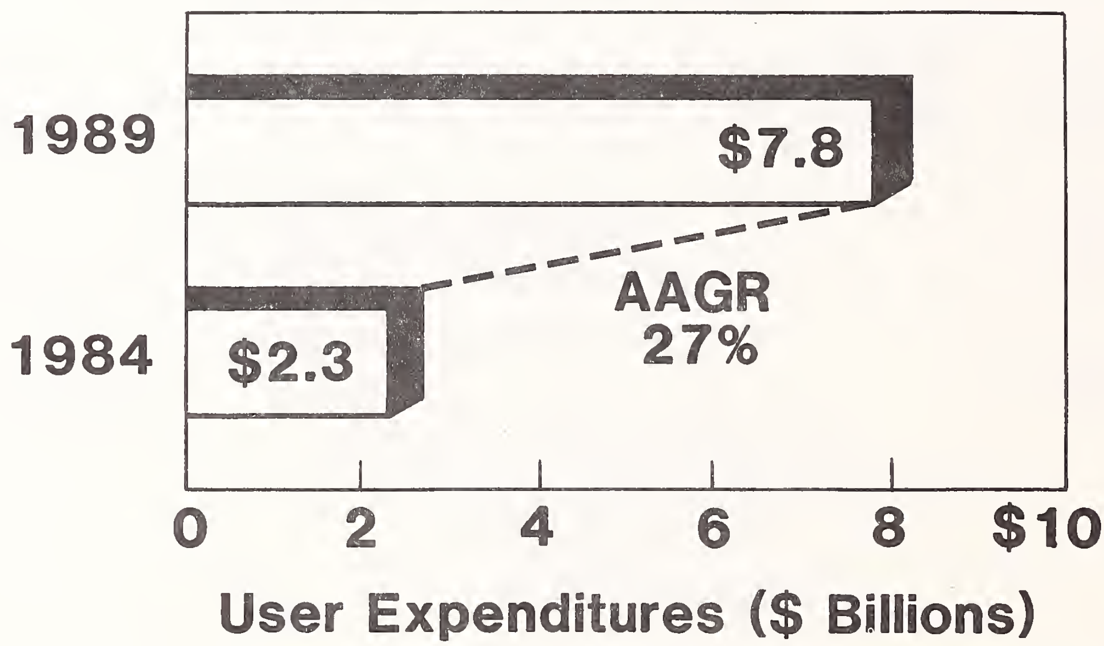
Property and Casualty

ISSUES AND TRENDS

- Industry Profit Problems
- Active Agent Automation:
  - From Direct Writers
  - From IVANS
- IVANS Difficulties:
  - Complexity
  - Hesitation

INPUT

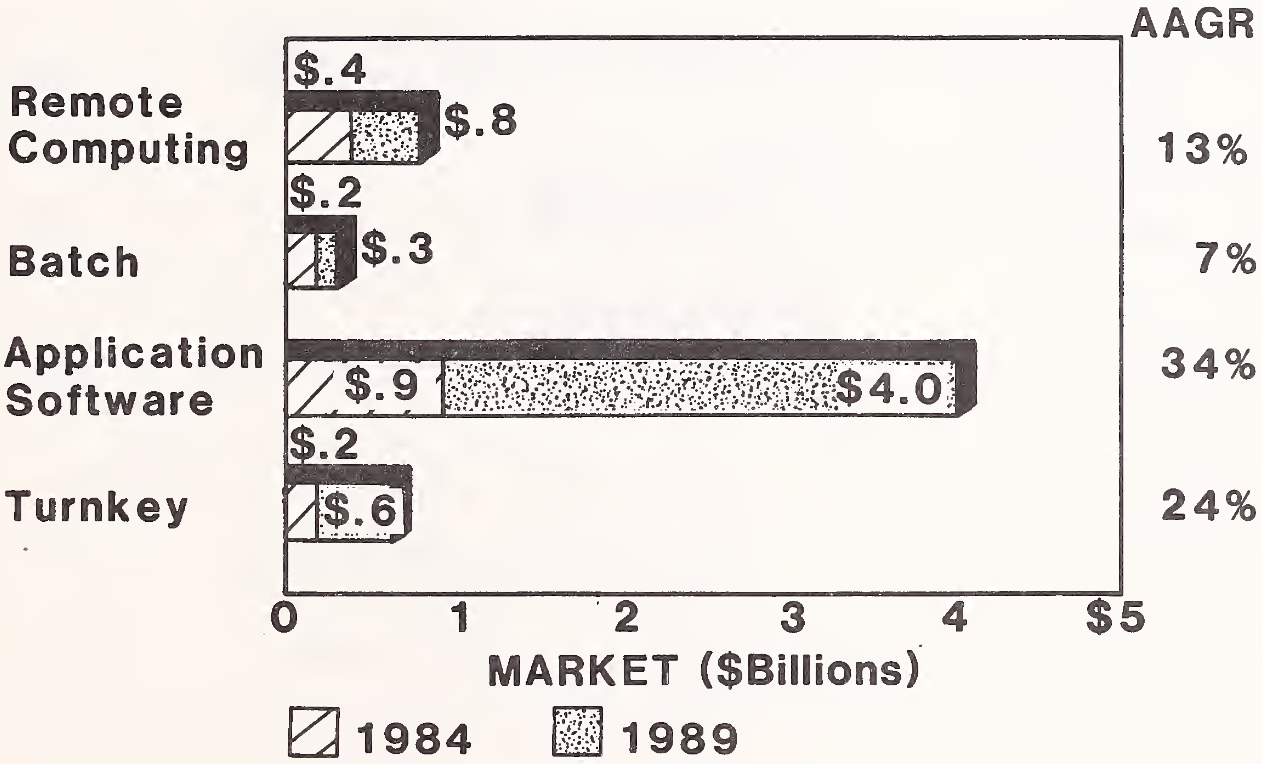
DISCRETE MANUFACTURING SEGMENT
1984-1989
(Industry-Specific)



INPUT

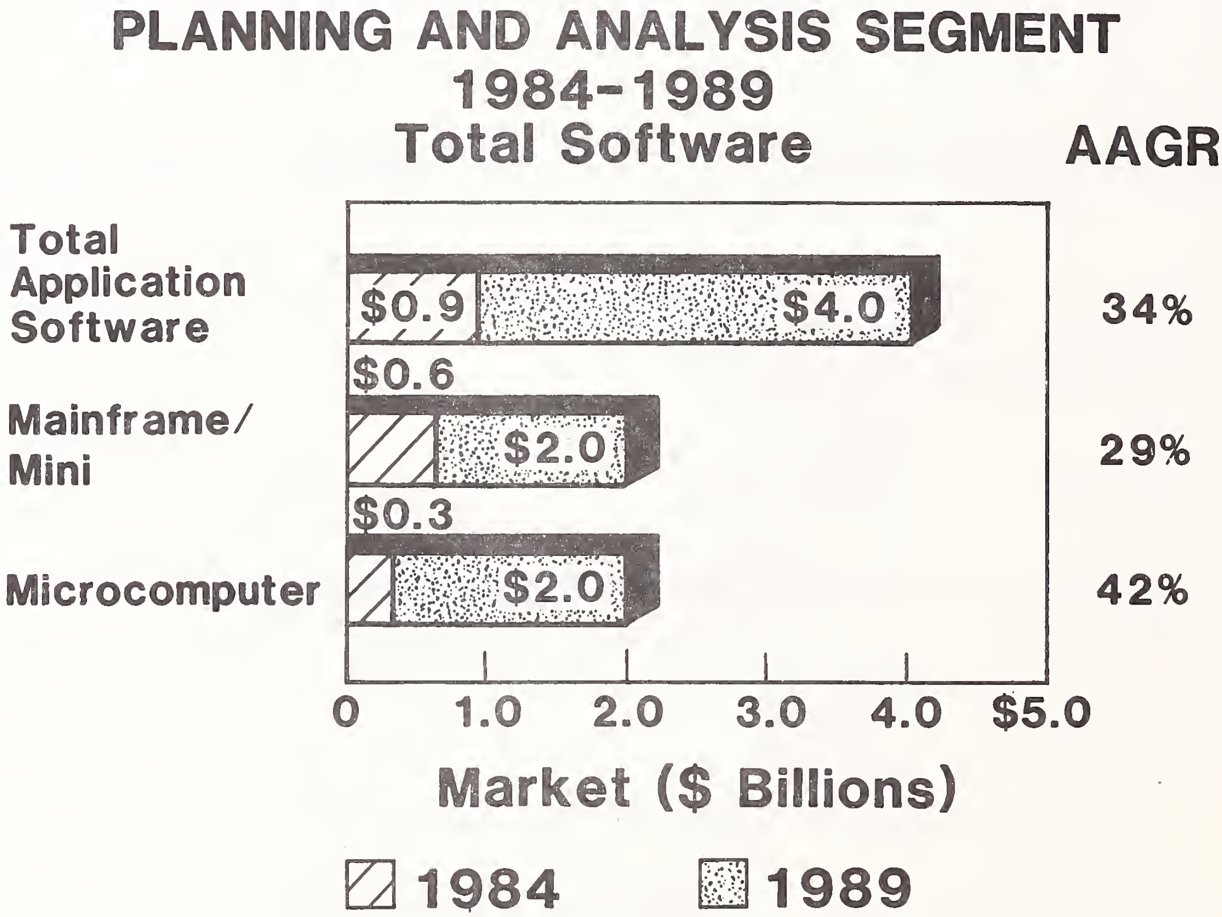
(93)

PLANNING & ANALYSIS SEGMENT 1984-1989



INPUT

MMCP


PLANNING AND ANALYSIS SEGMENT
1984-1989
Total Software
AAGR
Total Application Software
$0.9
$4.0
34%
$0.6
Mainframe/ Mini
$2.0
29%
$0.3
Microcomputer
$2.0
42%
0
1.0
2.0
3.0
4.0
$5.0
Market ($ Billions)
1984
1989

INPUT

(75)

INDUSTRY SPECIALIZATION

- Becoming Even More Important

- Cross-Industry Products/ Services Becoming Less Adequate

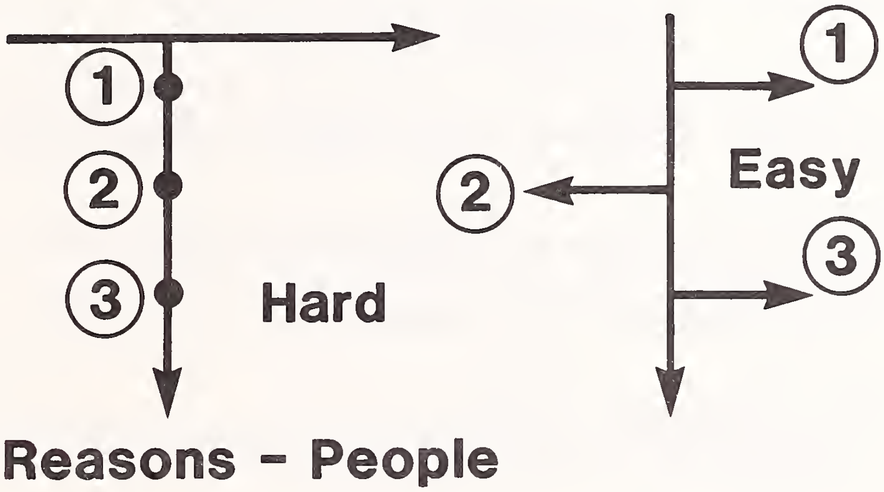
INPUT

INCREASING MARKET SHARE FOR INDUSTRY-SPECIFIC

	Industry-Specific User Expenditures as Percent of Total		
	1984	1989	Direction
RCS	51%	54%	↑
Application Software	47	56	↑
Turnkey	65	68	↑

INPUT

INDUSTRY SPECIALIZATION



INPUT

INDUSTRY SPECIALIZATION VERSUS CROSS INDUSTRY

- Buyer Needs Are More Specific
- Integration of General and Specific Functions
- Systemic Need
- Support

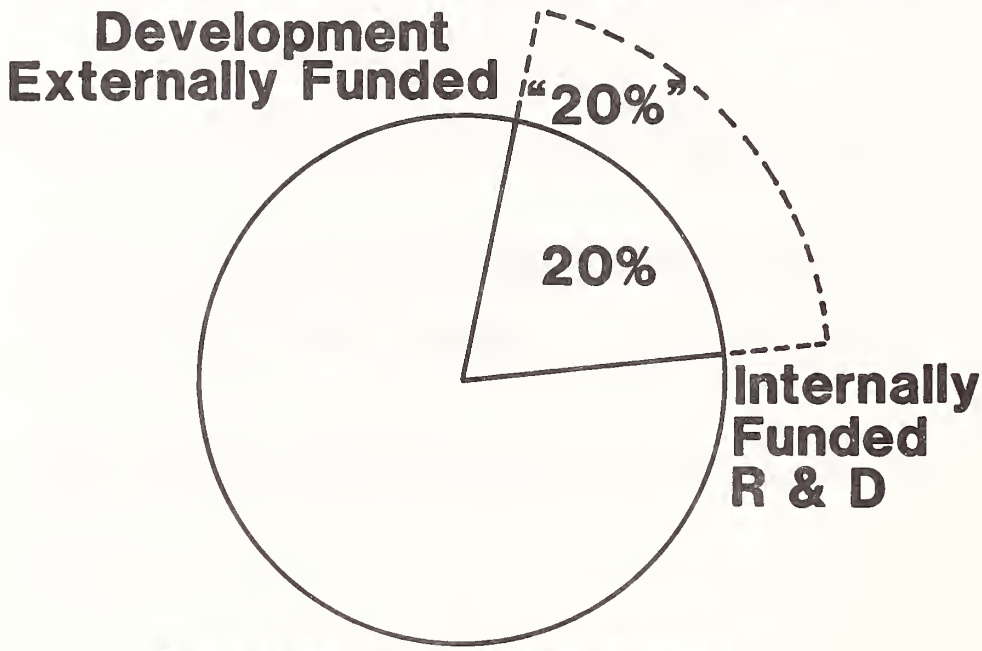
INPUT

R & D BARRIER TO ENTRY

- Companies Are Larger
- Same Proportion of Revenue = More Product
- Customer-Base Participation

INPUT

CUSTOMERS' PARTICIPATION



Can Double the Impact

INPUT

CONCLUSIONS

INPUT

INFORMATION SERVICES OUTLOOK IN A NUTSHELL

- Bigger
- Better
- Tougher

INPUT

STRUCTURE TRENDS

- Continuing Acquisition Activity
- Creation of Larger Companies
- Favorable Economies of Scale
- Continued Opportunities for Start-Ups
- More Independent, Public Firms
- Increased Dominance of U.S.-Based Firms

INPUT

HOW TO IDENTIFY FUTURE SUCCESS

- Major Commitments to:
  - Divesting Non-Core Businesses
  - Expanding Customer Support
  - Research and Development
  - Personnel Acquisition and Development

INPUT

NEW DIRECTIONS

- Throw Off the Past
- Become More Interdependent
  - Systems
  - Suppliers
  - Sellers

INPUT

NEW DIRECTIONS - PRODUCTS

- Sharpen Product Strategies
  - Enhance Integration
  - Eliminate Gobbledygook (“A :*. * B:”)
  - Support DDP
  - Automate Areas with Scarce Resources

INPUT

NEW DIRECTIONS - SELLING

- Sell Systems as Buyer's Competitive Weapon
- Help Businesses with End-User Computing
  - Support your Local I.S. Manager
  - Educate End-User
- Sell Systems for the User to Resell

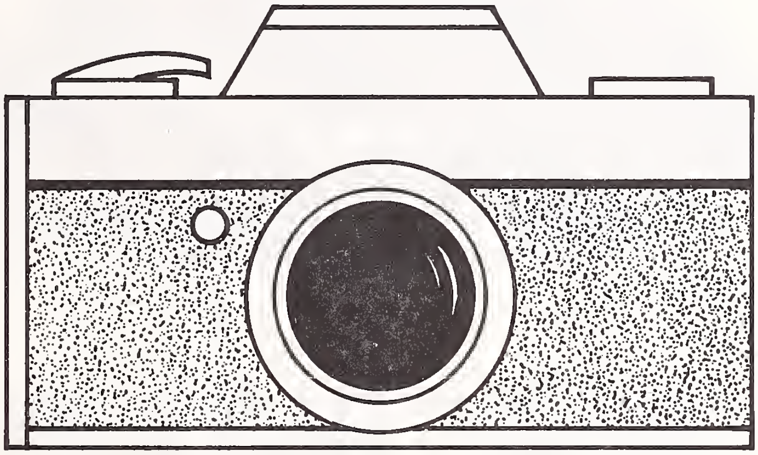
INPUT

CONCLUSIONS: 1984-1989

- Abundant Opportunity
- Bring Money
- Bring Management

INPUT

MORE FOCUS



INPUT

INPUT