INPUT®

- Introduction
- Environment
- Information Services Status
- Conclusion

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INTRODUCTION

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CURRENT STATUS OF THE INFORMATION SERVICES INDUSTRY

Peter A. Cunningham
President
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INPUT
EXECUTIVE PLANNING SERVICES

U.S.

- Company and Market Analysis Service (CMAS)
- Electronic Data Interchange Planning Service (EDIPS)
- Federal Information Systems and Services Program (FISSP)
- Information Systems Program (ISP)
- Large-scale Systems Directions (Residual Value Forecasts)
- Customer Service Program (CSP)

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EXECUTIVE PLANNING SERVICES
Europe

- Software and Service Planning Service (SSPS)

- Customer Service Program - Europe (CSP-E)

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INPUT
PLANNING SERVICE OPTIONS

- Corporate Planning Service
  - International Multiservice Organizations
  - Full Range of Services/Research
  - Save more than $80,000
- Executive Planning Services
  - Flexible Offerings
  - Select the Best Combination
  - Primary and Secondary Site Agreements
  - Study Copies and Copy Sets Available
  - Multiple Planning Service Purchase Discounts

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COMPANY AND MARKET ANALYSIS SERVICE (CMAS)

- Competitive Environment
  - Profiles of Information Services Vendors
  - Company Monitoring and Tracking Data Base
  - Vendor Financial Watch of Public Companies
- Information Services Market Analysis
  - Annual Market Analysis Studies:
    - Processing/Network Services
    - Software Products
    - Professional Services
    - Systems Integration
    - Turnkey

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INFORMATION SERVICES MARKET FORECASTS

- Processing Services
  - Industry Specific
  - Cross Industry
  - Utility Processing
- Network Services
  - Industry Specific
  - Cross Industry
  - Utility Processing
- Facilities Management
  - Industry Specific
  - Cross Industry
  - Utility Processing

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INFORMATION SERVICES MARKET FORECASTS

- Systems Software (by Operating Environment: VM, MVS, Unix, MSDOS, VMS, Other)
  - Operating Systems
  - Data Center Management
  - Systems Control
  - Program Development and Production Tools
  - Data Base Management Systems
- Applications Software
  - Industry Specific (14 Industries)
  - Cross Industry

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INFORMATION SERVICES MARKET FORECASTS

- Professional Services
  - Software Development
  - Consulting
  - Education and Training
  - Facilities Management
- Systems Integration
  - Commercial
  - Federal
- Turnkey Systems
  - Industry Specific
  - Cross Industry

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VERTICAL MARKET REPORTS AND UPDATES

- Five New Analyses Each Year
- Industry Updates Issued Frequently
- Three-ring Binder Format
- Includes:
  - User Requirements
  - Forecast of User Expenditures
  - Analyses of Top Vendors
  - Product/Service Issues

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COMPREHENSIVE CLIENT SUPPORT SERVICES

- Continuous Client Inquiry Services
- Annual Industry Planning Conference
- Information Center
- On-site Presentation Each Year

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ELECTRONIC DATA INTERCHANGE PLANNING SERVICE (EDIPS)

Strategic Analysis Reports

- Update on EDI Services
- EDI in Western Europe
- EDI Software Markets
- Prospects for Paperless Government Procurement
- International EDI
- A Guide to EDI Implementation

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ELECTRONIC DATA INTERCHANGE PLANNING SERVICE (EDIPS)

- EDI Reporter (Monthly Newsletter)
  - Key Issues
  - Events
  - Case Studies
  - Scenarios
  - Perspectives
  - Intelligence
- Comprehensive Client Support Services
  - Joint User/Vendor EDI Retreat
  - Continuous Client Inquiry Service
  - Annual Industry Planning Conference
  - Information Center

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FEDERAL INFORMATION SYSTEMS AND SERVICES PROGRAM (FISSP)

- Monthly Procurement Analysis Reports (PARS)
  - Agency Name
  - Program Title
  - Funding by Fiscal Year
  - Procurement Schedule Target Dates
  - Budget/Procurement Code
  - Description of Program
  - Systems/Services to Be Acquired
  - Contract Types and Duration
  - Contracting and Program Office with Contact Names
  - Background/Function
  - Analysis
  - Acquisition Plan
  - Awards to Date

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PROCUREMENT ANALYSIS REPORTS (PARS) INDEXED BY:

- Agency
- Fiscal Year
- Systems/Service Mode

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FEDERAL INFORMATION SYSTEMS AND SERVICES PROGRAM (FISSP)

Federal Market Analysis Reports (MARS)

- Average Six Reports/Updates per Service Period
  - Facilities Management
  - Processing Services
  - Telecommunications
  - Software
  - Professional Services
  - Turnkey Systems

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MARKET ANALYSIS REPORTS (MARS)

- Budget Forecasts
- Contracting Trend Analyses
- Technology Impact Assessments
- Competitive Environment Evaluations

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FEDERAL INFORMATION SYSTEMS AND SERVICES PROGRAM (FISSP)

- Comprehensive Client Support Services
  - Continuous Client Inquiry Service
  - Annual FISSP Conference
  - Access to Federal Information Center
  - Access to INPUT Washington Professionals
  - Annual Industry Planning Conference

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CUSTOMER SERVICE PROGRAM - U.S. (CSP)

- Four Market Analysis Reports
  - Industry/Market Events
  - Market Forecast
  - Challenges and Opportunities
  - Strategies for Success

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CUSTOMER SERVICE PROGRAM - U.S. (CSP)

- User Service Requirements Reports
  - Based on Original Research
  - User Ratings of Service Vendor Performance
  - Hardware/Software Strengths & Weaknesses
  - Service Component Data
    - System Availability
    - Response Times
    - Repair Times
  - Level of Service Received vs. Required

INPUT

CUSTOMER SERVICE PROGRAM - U.S. (CSP)

- Service Issue Reports (Client Poll)
  - Logistics Management
  - Customer Service Pricing
  - Remote Services
  - Third-party Maintenance Competitive Environment

INPUT

CUSTOMER SERVICE PROGRAM - U.S. (CSP)

- Comprehensive Client Support Services
  - Service Update (Monthly Newsletter)
  - Continuous Client Inquiry Services
  - On-site Presentation Each Year
  - Information Center
  - Annual Industry Planning Conference

INPUT

INFORMATION SYSTEMS PROGRAM - U.S. (ISP)

- I.S. Analysis and Forecast Report
  - By Industry Sector (Three-ring)
  - Driving Forces
  - Applications Requirements
  - Software Plans
  - Network Directions
  - I.S.' Corporate Contribution
  - Budget Trends

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INFORMATION SYSTEMS PROGRAM - U.S. (ISP)

- Case Studies
  - I.S. As Competitive Advantage
  - Mission Critical Systems
  - Systems Integration
  - End User Productivity

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LARGE-SCALE SYSTEMS DIRECTIONS (RESIDUAL VALUE FORECASTS)

- Three per Year
- IBM and IBM Plug-compatible Mainframes
- Storage Devices, Printers, Other Peripherals

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ENVIRONMENT

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INDUSTRY SLOWDOWN

6 JJJJ PAC (2) S25 (s)

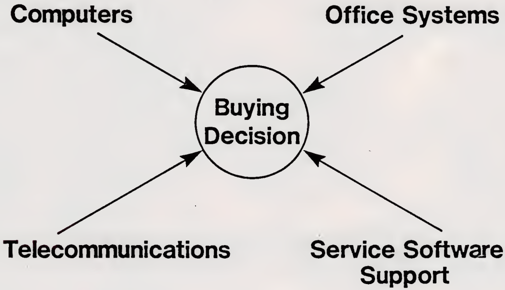
LAW 1

Rate of Supply >

Rate of Absorption

7JJJJ PAC (2) S27 (s)

COMPLEXITY


Computers
Office Systems
Buying Decision
Telecommunications
Service Software Support

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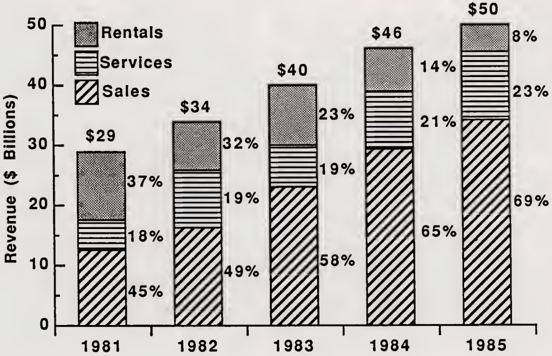
IBM'S LAST FIVE YEARS



4 JJJJ Com. J

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SERVICES REVENUE

- Program Products up 30% to $4.2B
- Maintenance Services up 16% to $6.1B
- Total Services Revenue up 20% to $11.5B
- Gross Profit on Services up 30% to $6.8B

IBM REVENUE GROWTH

	Percent		
	1983	1984	1985
Sales	38.4%	27.8%	15.6%
Services	19.4%	25.1%	20.1%
Rentals	(17.0%)	(28.7%)	(37.4%)
Total Revenue	16.9%	14.3%	9.0%

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IBM GROSS PROFIT GROWTH

	Percent		
	1983	1984	1985
Sales	33.5%	28.5%	12.2%
Services	23.3%	26.1%	30.2%
Rentals	(15.0%)	(28.1%)	(40.3%)
Total Gross Profit	15.0%	13.6%	7.2%

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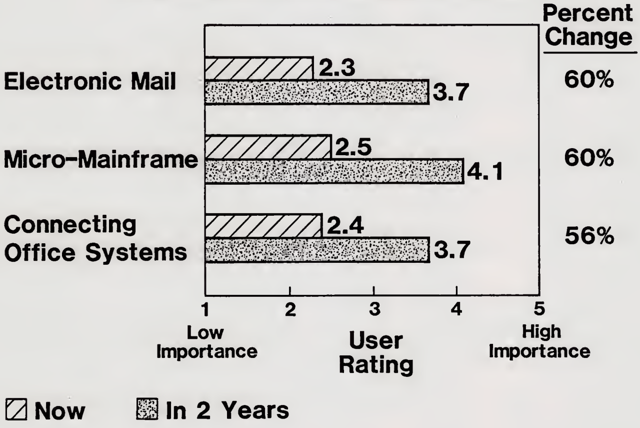
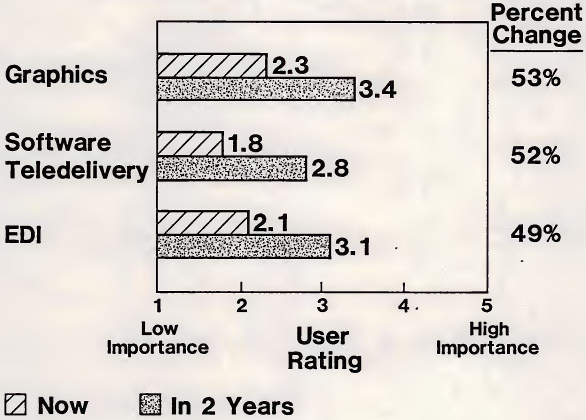
IBM'S MAINTENANCE SERVICE

- IBM Recognizes Growing Requirement for Systems Availability. Systems Design Focuses on this Issue.
- New 3090 Has Advanced RS Designed in. Service Processors Monitor/Record Performance Data.
- System/36 24 Hour Software Assistance
- Digital Communications System: Portable Terminals

APPLICATION IMPORTANCE



APPLICATION IMPORTANCE

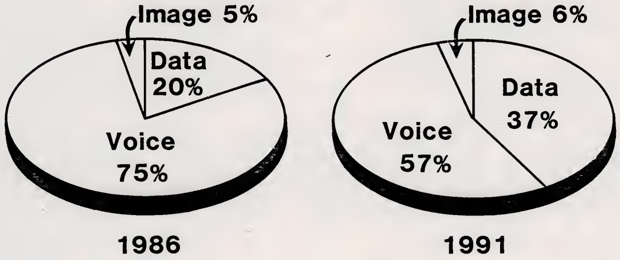


ADVANCED OFFICE SYSTEMS

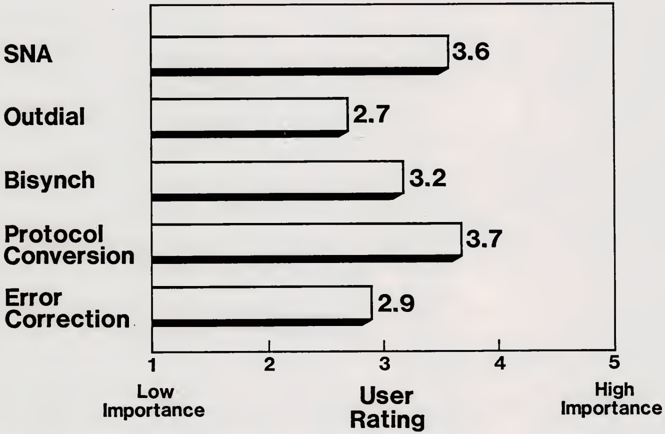
	Now	Planned
Document Composition Systems	17%	42%
Electronic Filing	8%	42%

CORPORATE NETWORK PROPORTIONS

User Estimates



NETWORK SERVICES FEATURE RATINGS



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OPEN SYSTEMS INTERCONNECTION

- Attempt to Bring Order Out of Chaos
- Alternative to IBM Structure
- ? Will the Users Buy It?

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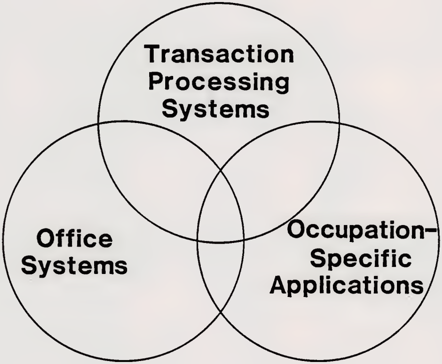
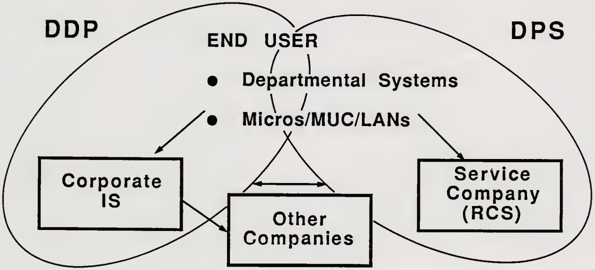
INTEGRATION EQUALS DDP



EXTERNAL VERSUS INTERNAL



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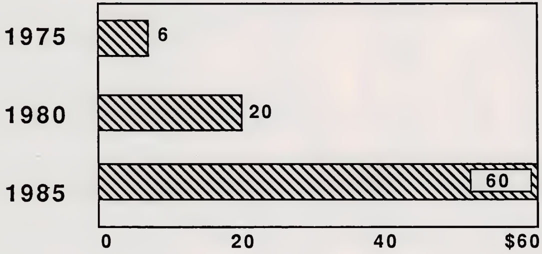
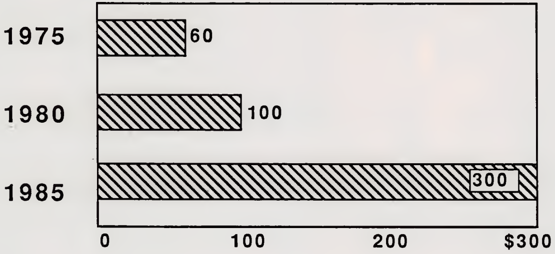
INFORMATION SERVICES STATUS

U.S. COMPANIES ANNUAL REVENUES OVER $100 MILLION



U.S. COMPANIES ANNUAL REVENUES $10 MILLION - $100 MILLION



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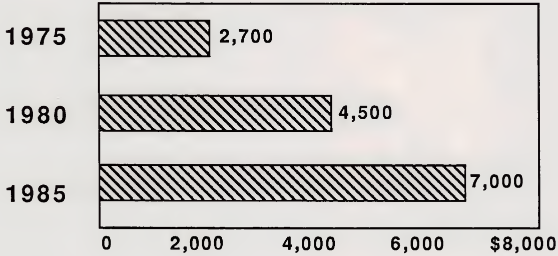
U.S. COMPANIES ANNUAL REVENUES
$250 THOUSAND - $10 MILLION



26JJJJ PAC 2)S27 (s)

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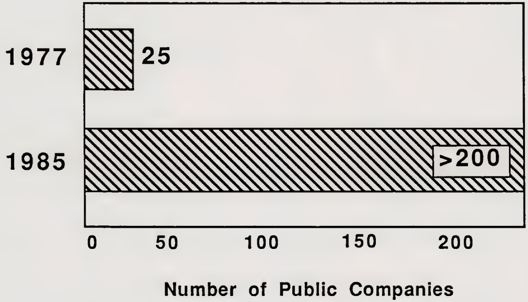
PUBLIC COMPANIES



27JJJJ PAC 2)S3 (s)

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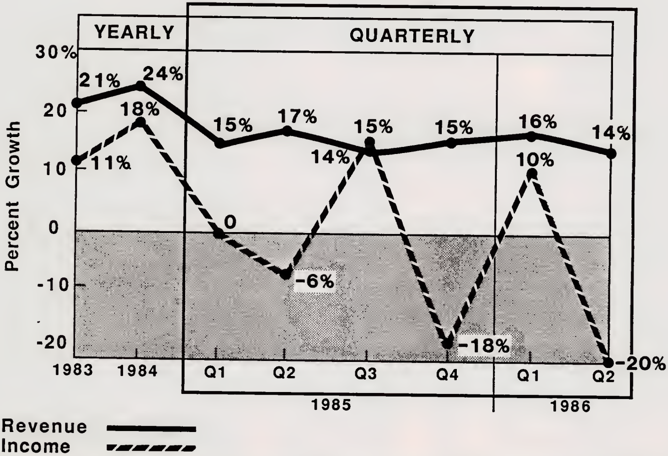
PUBLIC INFORMATION SERVICES VENDORS



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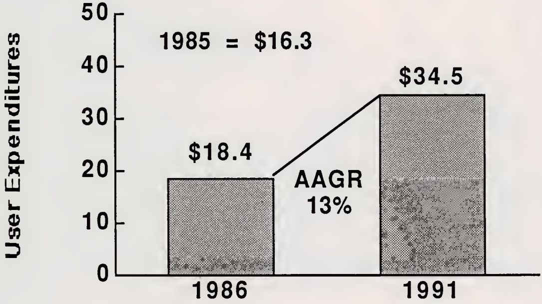
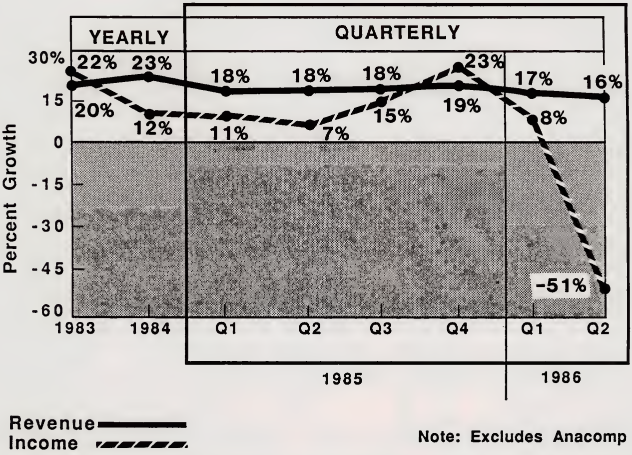
PROCESSING/NETWORK SERVICES MARKET
($ Billions)



12JJJJBDJz(s)28

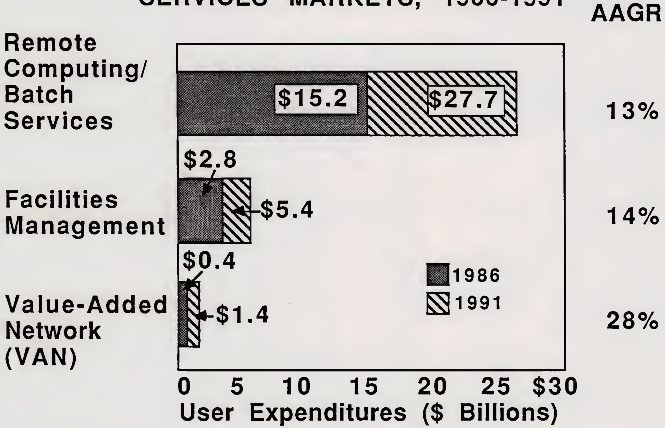
PUBLIC PROCESSING SERVICES VENDORS



Note: Excludes Anacomp

31CFAV Q2 86

PROCESSING/NETWORK SERVICES MARKETS, 1986-1991



14 JJJJ BD S (s) 30

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PROCESSING/NETWORK SERVICES: DRIVING FORCES

- \- Decrease in Hardware Prices
- \+ EDI
- \+ On-Line Data Base Segment Strong
- \+ Niche Opportunities

JJJJ BD

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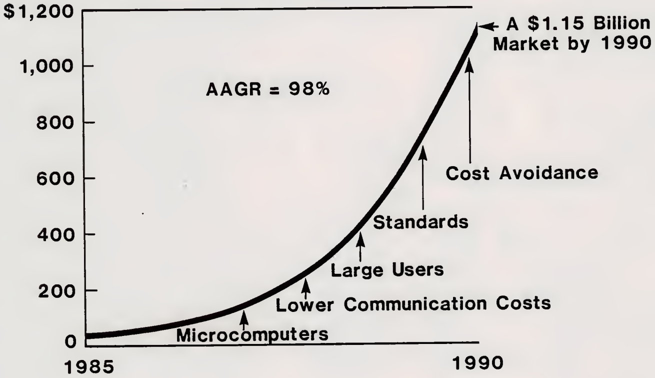
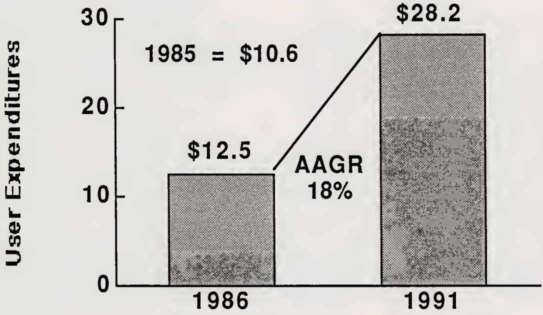
EXPONENTIAL EDI GROWTH
($ Millions)



INTERNATIONAL EDI

- Complex Trade Documents
- Errors = Delay = Cost
- Paperwork Adds $8 Billion per Year
- NCITD

PROFESSIONAL SERVICES MARKET
($ Billions)



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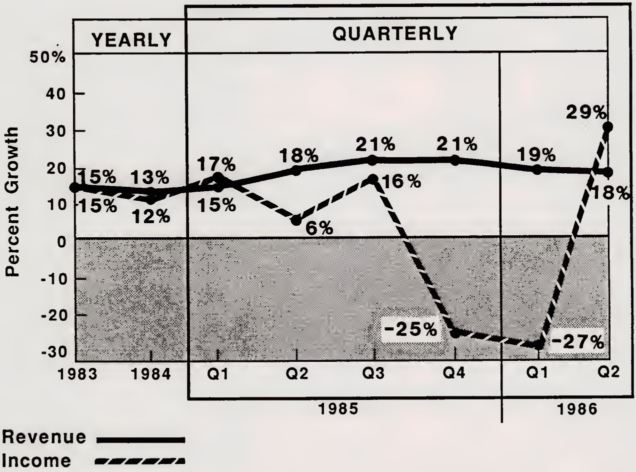
PUBLIC PROFESSIONAL SERVICES VENDORS

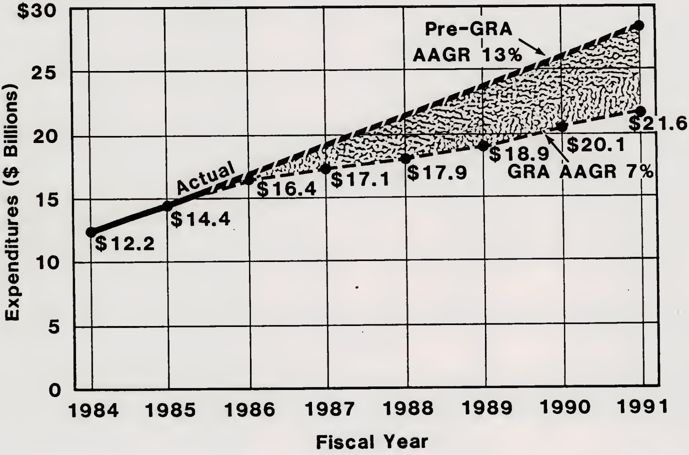


CFAV Q2 86

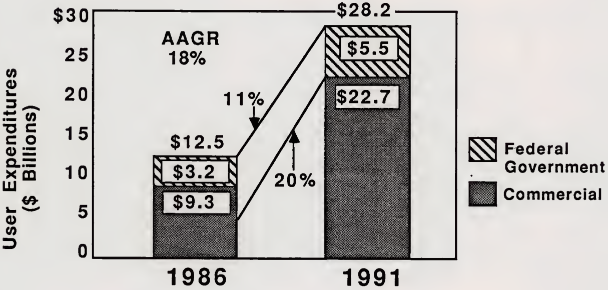
PROFESSIONAL SERVICES: DRIVING FORCES

- \- More User Willingness to Compromise on Uniqueness
- \+ More Software Product Related
- \+ More Focus on Internal Productivity
- \+ Increased Industry Specialization
- \+ Federal Government Vendors Becoming Commercial Vendors

GRAMM-RUDMAN IMPACT ON FORECAST

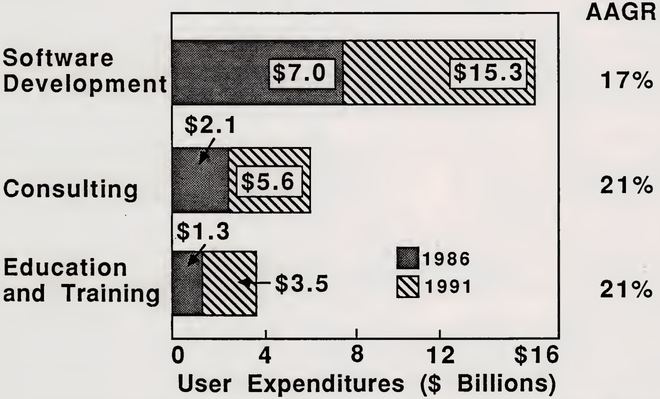


FEDERAL GOVERNMENT/COMMERCIAL PROFESSIONAL SERVICES MARKETS



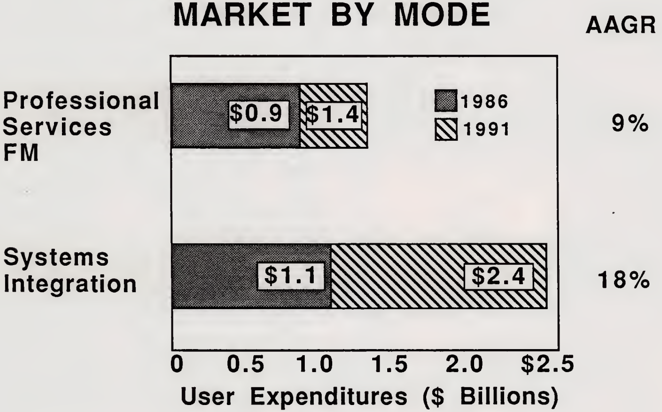
30JJJJBD S(s) 21

PROFESSIONAL SERVICES MARKET BY MODE



32JJJJ BD S (s) 35

PROFESSIONAL SERVICES MARKET BY MODE



33JJJJ BD S (s) 34

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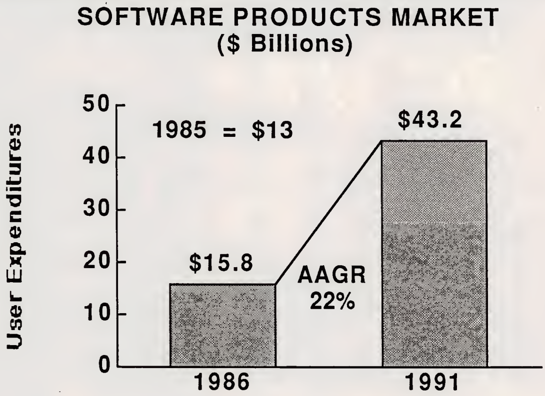
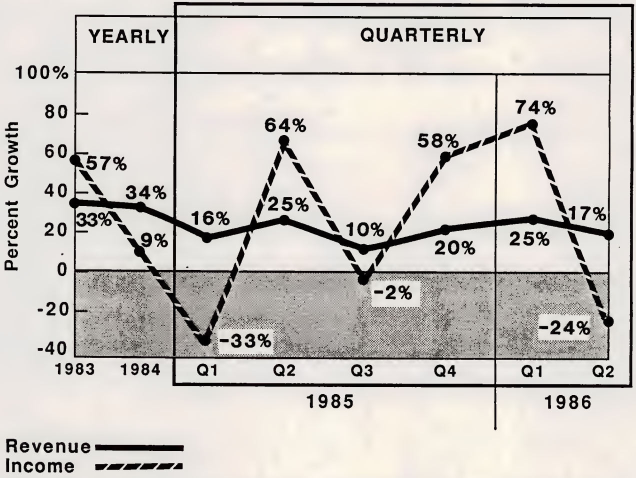


17 JJJJBDJz(s)27

PUBLIC SOFTWARE PRODUCTS VENDORS

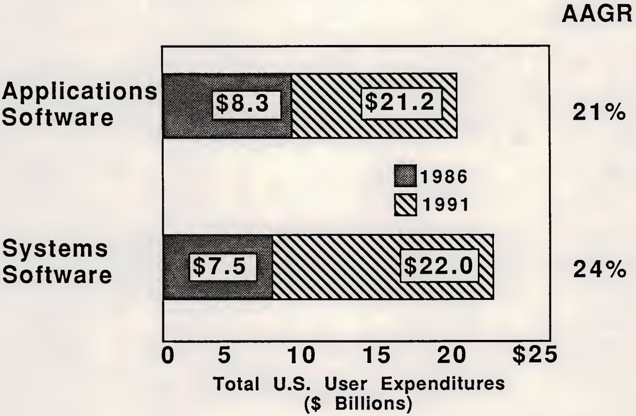


CFAV Q2 86

SOFTWARE PRODUCTS MARKET: DRIVING FORCES

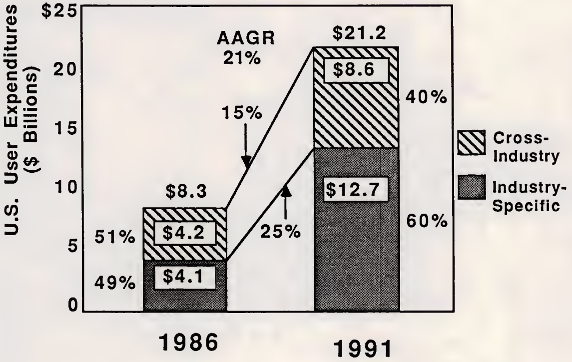
- \+ Hardware Base Increase
- \+ Drive to Connectivity
- \- Micro-Mainframe Confusion
- \+ Accelerated Obsolesence

SOFTWARE PRODUCTS MARKETS



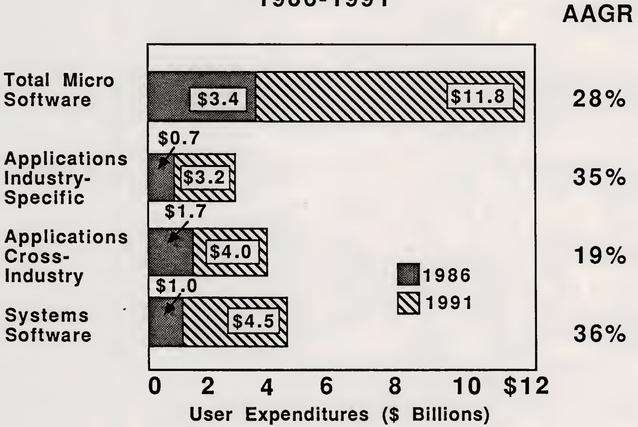
21JJJJ BD S (s) 37

INDUSTRY-SPECIFIC APPLICATIONS SOFTWARE TO INCREASE SIGNIFICANTLY



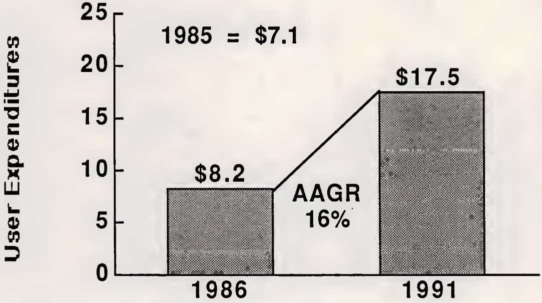
22 JJJJBD S(s) 22

STRONG MICRO SOFTWARE MARKET 1986-1991



24 JJJJ BD S (s) 36

TURNKEY SYSTEMS MARKET
($ Billions)



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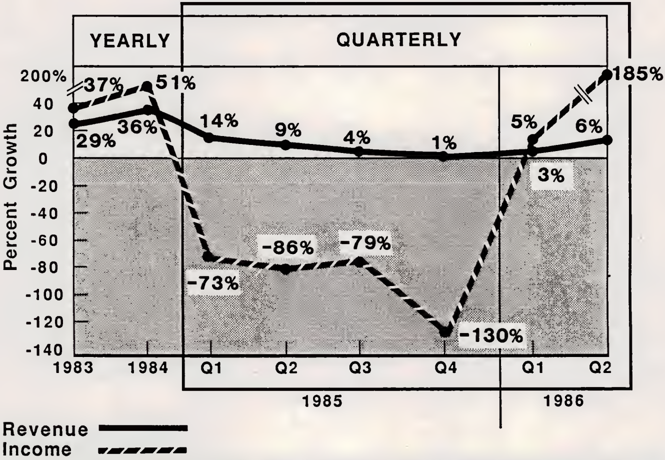
PUBLIC TURNKEY SERVICES VENDORS



34CFAV Q2 86

TURNKEY SYSTEMS: DRIVING FORCES

+ Increase in Range and Complexity of Computing Choices

+ Standard Hardware

- Rapid Obsolescence of Products

+ VAR Approach

"HOT" VERTICALS BY AAGR: USER EXPENDITURES

	$ Billions			PERCENT AAGR
	1985	1986	1991	
Medical	$1.7	$2.1	$5.9	23%
Discrete Manufacturing	$2.8	$3.4	$9.0	22%
Telecommunications	$0.6	$0.7	$1.9	22%

"HOT" VERTICALS BY 1991 SIZE: USER EXPENDITURES

	$ Billions			Percent AAGR
	1985	1986	1991	
Banking/Finance	$4.9	$5.8	$12.5	17%
Discrete Manufacturing	$2.8	$3.4	$9.0	22%
Medical	$1.7	$2.1	$5.9	23%

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CIM: WHO NEEDS IT?

- 268,000 Manufacturing Plants in the U.S. (SIC Codes 20-39)
- 230,000 Have Less than 100 employees
- 75% Are Job Shop Manufacturers
- 15,000 Have More than 200 Employees
- 10,000 MRP Systems Installed

2 JJJJ GK2 J(s)

THE HUMAN ELEMENT

- Introducing People to a New System Is a Lengthy Process, Requires Patience - the U.S. Worker Views Technology As an Adversary
- Incremental Changes, Evolution Required, not Sudden Technological Revolution
- Japanese Advantage Is Their Culture and Painstaking Attention to Detail

U.S. VERSUS JAPAN

- Japanese Orientation Is for Process Improvement, Long-term Production Evolution
- U.S. View Has Been, "We're Behind, Technology Can Provide a Quick Fix, Go for It."
- Japanese Approach Tightens the Bond/Blurs the Distinction between Management and Workers; U.S. Approach Widens the Gap

TECHNOLOGY IS MIXED BLESSING

- Technological Change Has Instant But Short-term Impact
- Great Benefits Can Be Obtained, but Systems Are often Complex and Difficult to Use
- Automating a Poor Shop Floor Layout with Inefficient Product Designs and Poor Production Planning Is Not Progress

MISDIRECTED?

- GM's Buick City Has Emphasis on Technology/Hardware ($300M): 30% Reduction in Manufacturing Costs and Substantial Problems

- GM/Toyota Milpitas Plant Has Emphasis on People, Procedures and Production Process Plus Limited/Old Technology: 70% Reduction in Manufacturing Costs and Few Problems

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CIM COMPONENTS, 1985-1990

SEGMENT	SALES ($ Billions)	
	1985	1990
CAD/CAM/CAE	$3.2	$11.1
MRP II	$1.9	$5.1
Process Control	$1.1	$2.3
FMS/FMC	$0.4	$1.8
Robotics	$0.5	$1.3
LAN/Networks	$0.1	$0.7
Totals	$7.2 B	$22.3 B

42 JJJJ GK(2) J(s)37

CIM SUMMARY

- The Tools Are Secondary to the Process and to the Human Equation
- The Tools Can Wait, the Process Integration Can't
- Automation (e.g. Robotics) Has Well-defined Role
- Waiting for the Perfect Solution Is a Recipe for Losing Market Share

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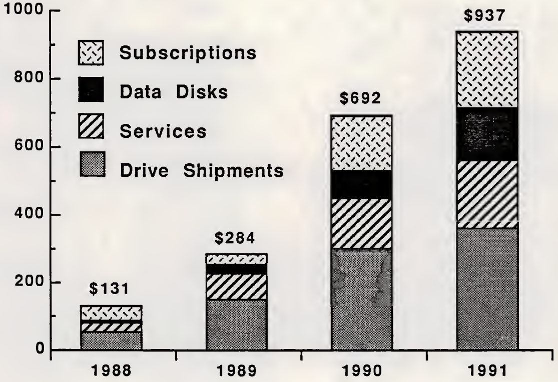
CD ROM MARKETS, 1986-1991



10 JJJJ GK J(s)

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CD ROM: "VIDEOTEXT" OR "PC" MARKET?

"Videotex-like"

- War among Vendors for Standards
- A "Revolution" Still Waiting to Happen

OR

"PC-like"

- Personalization of Storage
- Software-driven
- Explosion of Dealers, Vendors, and Products

NET IMPACT OF CD ROM ON INFORMATION SERVICES

SERVICE DELIVERY MODE	NET IMPACT ($ M)	
	1986	1991
Processing/Network Services	*	$425
Software Products	*	610
Turnkey Systems	*	800
Professional Services	*	265
Total	(Small)	$2100

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ADOPTION OF CD ROM HINDERED

- Limited Marketing Strength of CD ROM Vendors, Absence of IBM
- User Inertia
- Limited Software Availability
- Extensive Hand-holding Needed

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CONCLUSION

35 JJJJ PAC (2) S10 (s)

CONCLUSIONS

- Slowdown Temporary
- Greater User Sophistication

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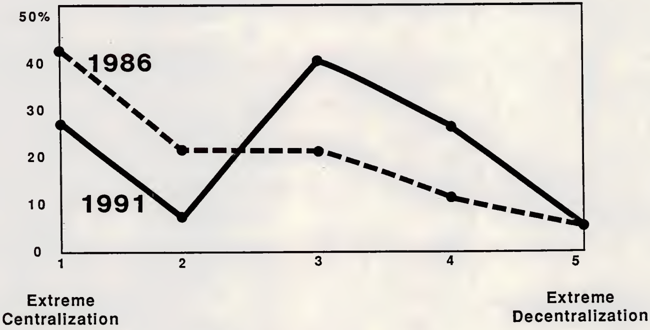
INFORMATION SERVICES

- Rate of Change Is Accelerating
  - Products
  - Technology
  - Market Strategy
  - Vendor Complexion

THE TREND TOWARDS DECENTRALIZATION



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