MARKET ANALYSIS SERVICE

1980 ANNUAL PRESENTATION

INPUT

ABOUT INPUT

THE COMPANY

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions. Continuing services are provided to users and vendors of computers, communications, and office products and services.

The company carries out continuous and in-depth research. Working closely with clients on important issues, INPUT's staff members analyze and interpret the research data, then develop recommendations and innovative ideas to meet clients' needs. Clients receive reports, presentations, access to data on which analyses are based, and continuous consulting.

Many of INPUT's professional staff members have nearly 20 years experience in their areas of specialization. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

Formed in 1974, INPUT has become a leading international consulting firm. Clients include over 100 of the world's largest and most technically advanced companies.

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INPUT'S
FIFTH ANNUAL PRESENTATION
MARKET ANALYSIS SERVICE-1980

MARKET ANALYSIS SERVICE

PRESENTATION CONTENTS

1980

I INTRODUCTION

INPUT DEVELOPMENTS

- NEW PEOPLE – OVER 60 PROFESSIONALS
- EXPANSION GEOGRAPHICALLY
- NEW SERVICES – PRODUCTIVITY
- NEW MARKETING – NEWSLETTER

I PALO ALTO, NEW YORK, LOS ANGELES, DETROIT, WASHINGTON, D.C., LONDON, TOKYO

AFFILIATES: MILAN, SYDNEY

SUBSCRIPTION SERVICES

- COMPUTER SERVICES PROGRAMS

  - MARKET ANALYSIS SERVICE
  - COMPANY ANALYSIS AND MONITORING PROGRAM

- OPERATED IN U.S. AND EUROPE

- OVER 60 CLIENTS

SUBSCRIPTION SERVICES

- FIELD SERVICES PROGRAMS FOR:

  - U.S. AND EUROPE
  - SOFTWARE AND HARDWARE MAINTENANCE
  - EDUCATION, TRAINING, AND SUPPORT

- 35 CLIENTS

SUBSCRIPTION SERVICES

- INFORMATION PROCESSING EXECUTIVE PROGRAM
  - PLANNING SERVICE
  - COMPUTER/COMMUNICATIONS TRENDS
  - MANAGEMENT ISSUES
- U.S. AND EUROPE (1981)
- 60 CLIENTS
  - USERS
  - VENDORS

1980 MULTICLIENT STUDIES

- USER SITE HARDWARE SERVICES
- PERSONAL COMPUTERS IN LARGE COMPANIES
- STRATEGIES FOR COMPETING IN THE IBM COMPATIBLE MARKET
- DIGITAL COMMUNICATIONS NETWORKS
- IMPROVING PRODUCTIVITY OF SOFTWARE IMPLEMENTATION

1980 MULTICLIENT STUDIES

- CAD/CAM OPPORTUNITIES
- SALES PRODUCTIVITY AND ALTERNATIVE DISTRIBUTION CHANNELS
- ON-LINE DATA BASE OPPORTUNITIES IN EUROPE

1980 CUSTOM PROJECTS

- OVER 70 PROJECTS COMPLETED
- DIVERSIFICATION AND ACQUISITION PLANNING
- MARKETS FOR PRODUCTS AND SERVICES
- FIELD SERVICES MANAGEMENT AND MARKETING
- CAD/CAM PROJECTS
- EXECUTIVE BRIEFINGS AND CONSULTING

1980 MARKET ANALYSIS SERVICES STUDIES

- TRENDS IN SERVICE AND SOFTWARE PRICING
- TRENDS IN REMOTE COMPUTING SERVICES MODES
- OPPORTUNITIES IN INSURANCE AGENTS AND BROKERS
- MARKETING APPLICATION SOFTWARE PRODUCTS
- MARKET OPPORTUNITIES FOR ON-LINE DATA BASE SERVICES
- IMPROVING SALES PRODUCTIVITY
- EFFECTIVE MARKETING AND PLANNING

1980 MARKET ANALYSIS SERVICES
STANDARD SERVICES

- ANNUAL REPORT
- CONFERENCE
- 'HOT-LINE' SERVICE
- IN-HOUSE PRESENTATION

1981 MARKET ANALYSIS SERVICE STUDIES

- CONTINUING REPORTS

  - PRICING
  - COMPENSATION
  - END USER ANALYSIS

- THREE MAJOR REPORTS

- FOUR COMPUTER SERVICES BRIEFS

- ON-LINE DATA BASE MARKETS WILL BE COVERED

II EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

- COMPUTER SERVICES INDUSTRY CONTINUES TO PROVIDE A UNIQUE OPPORTUNITY

- TARGET ACCOUNT CONTROL

  - CONTINUING CLIENT RELATIONSHIP
  - FULL-LINE VENDOR

EXECUTIVE SUMMARY

- 'OLD' SERVICES DYING OR CHANGING
- EXPAND SERVICES INTO NEW AREAS
- PARTICIPATE IN NEW BUSINESS METHODS
  - FINANCIAL INDUSTRY
  - INFORMATION INDUSTRY
  - MANUFACTURING

EXECUTIVE SUMMARY

- EMPHASIZE PEOPLE
- COMPUTER SERVICES AS ENHANCED CONSULTING

EXECUTIVE SUMMARY

- PRODUCTIVITY IMPROVEMENT PROGRAM
  - SALES
  - DEVELOPMENT
  - SUPPORT
  - MANAGEMENT
- PRODUCTIVITY IMPROVEMENT MARKET

EXECUTIVE SUMMARY
TARGETS

- OPERATIONS ACTIVITIES
- SMALLER COMPANIES
- INTER- AND INTRA-INDUSTRY SERVICES
- COMPUTER AIDED PROCESSES
  - CAD/CAM
  - INSTRUCTIONS
  - COMMUNICATIONS
- FIELD SERVICES

EXECUTIVE SUMMARY

- TAKE ADVANTAGE OF TECHNOLOGICAL CHANGE
- USE MINI-MICRO SYSTEMS TO DELIVER SERVICES
- INTEGRATION OF NETWORKS PROVIDES OPPORTUNITIES
- NEW PROCESSING OPPORTUNITIES
  - MESSAGE
  - IMAGE
  - VOICE
  - VIDEO

EXECUTIVE SUMMARY

- PROCESSING DISTRIBUTED

  - VERY SMALL SYSTEMS
  - TURNKEY SERVICES

- DATA BASES KEYS TO BUSINESS OPPORTUNITIES

EXECUTIVE SUMMARY

- END USERS NEED TOOLS
- USERS WANT CUSTOMIZATION
- THEY WILL GET IT
- APPLICATIONS SOFTWARE MUST EVOLVE

EXECUTIVE SUMMARY

- RAPID EUROPEAN GROWTH
- SEVERAL YEARS BEHIND U.S. IN PROCESSING
- AHEAD IN SOME AREAS
- TRANS-NATIONAL MARKETS
  - CAD/CAM
  - DATA BASES
  - SYSTEMS SOFTWARE

EXECUTIVE SUMMARY

- ORGANIZING FOR SHORTAGE OF TRAINED PERSONNEL
- CONSOLIDATING ACQUISITIONS
- DEVELOPING MANAGEMENT

EXECUTIVE SUMMARY

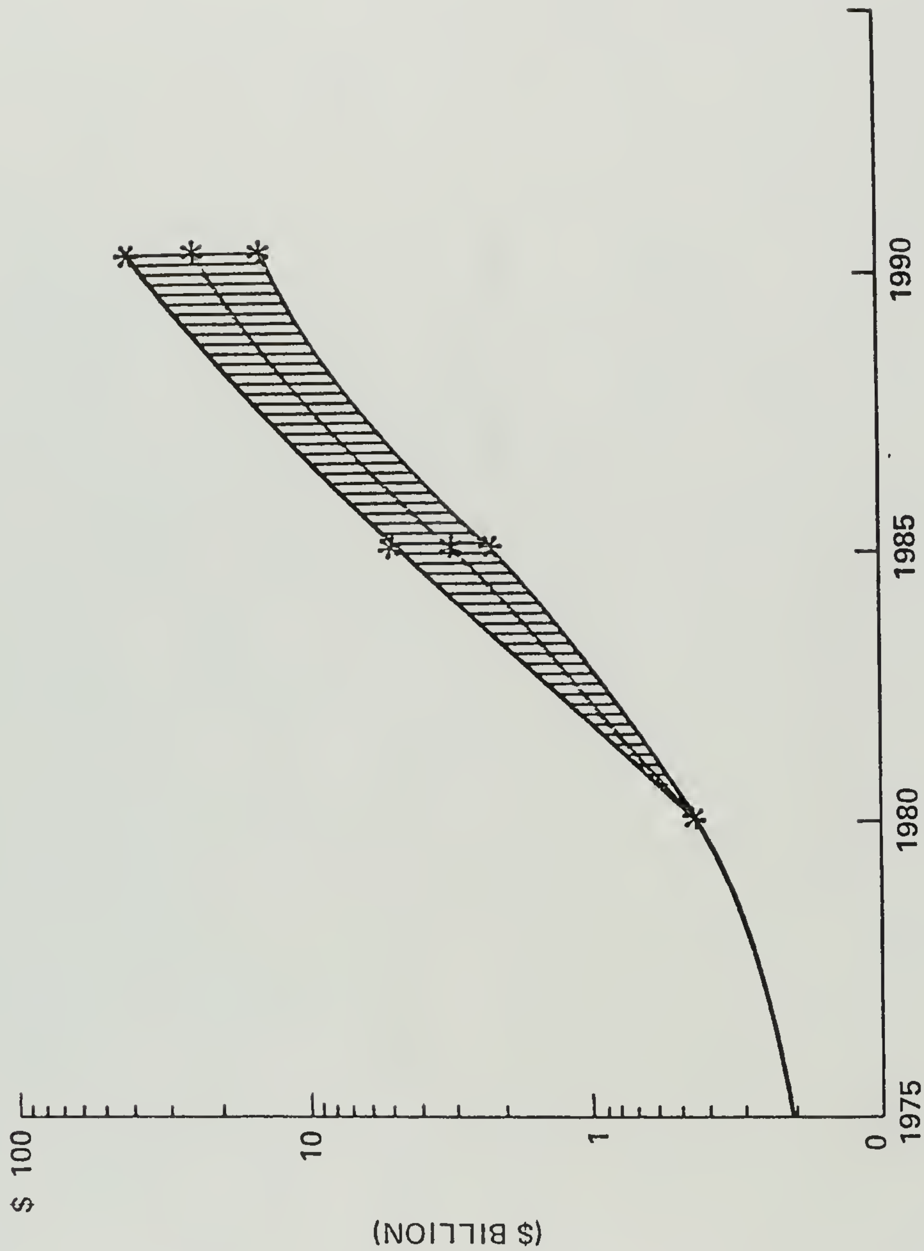
- INVEST IN FUTURE
- AVOID OVEREMPHASIS ON SHORT-TERM
- PLAN IN RECESSIONARY PERIOD

III OPPORTUNITIES

CAD/CAM MARKET

- PRODUCTIVITY ISSUE
- USER DEMAND > 10 X SUPPLY
- DELUGE OF NEW APPROACHES AND PRODUCTS
- CAD/CAM FUNDAMENTALLY ALTERS METHODS OF BUSINESS
- LONG-TERM COMMITMENT

CAD/CAM MARKET



INI

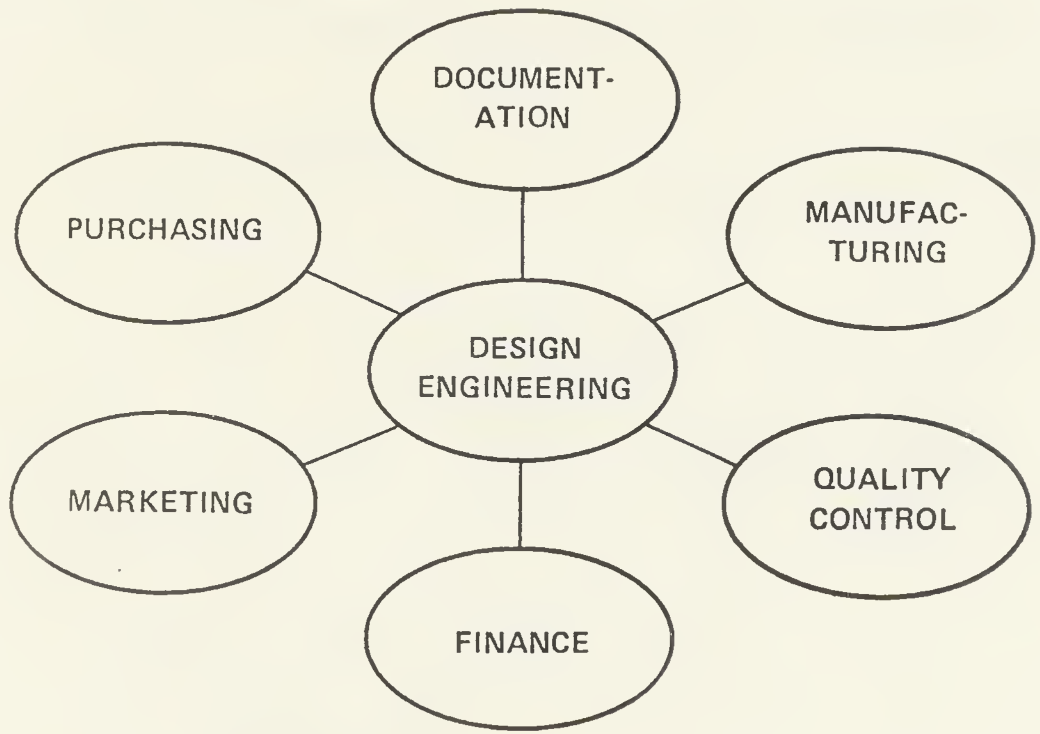
CAD/CAM MARKET

- USER EXPENDITURES IN ONE CAD ELECTRONICS AREA
  - 1980 $200 MILLION
  - 1985 $1.7 BILLION
- SOME APPLICATIONS EXPENDITURES WILL GROW 33 TIMES IN THIS AREA

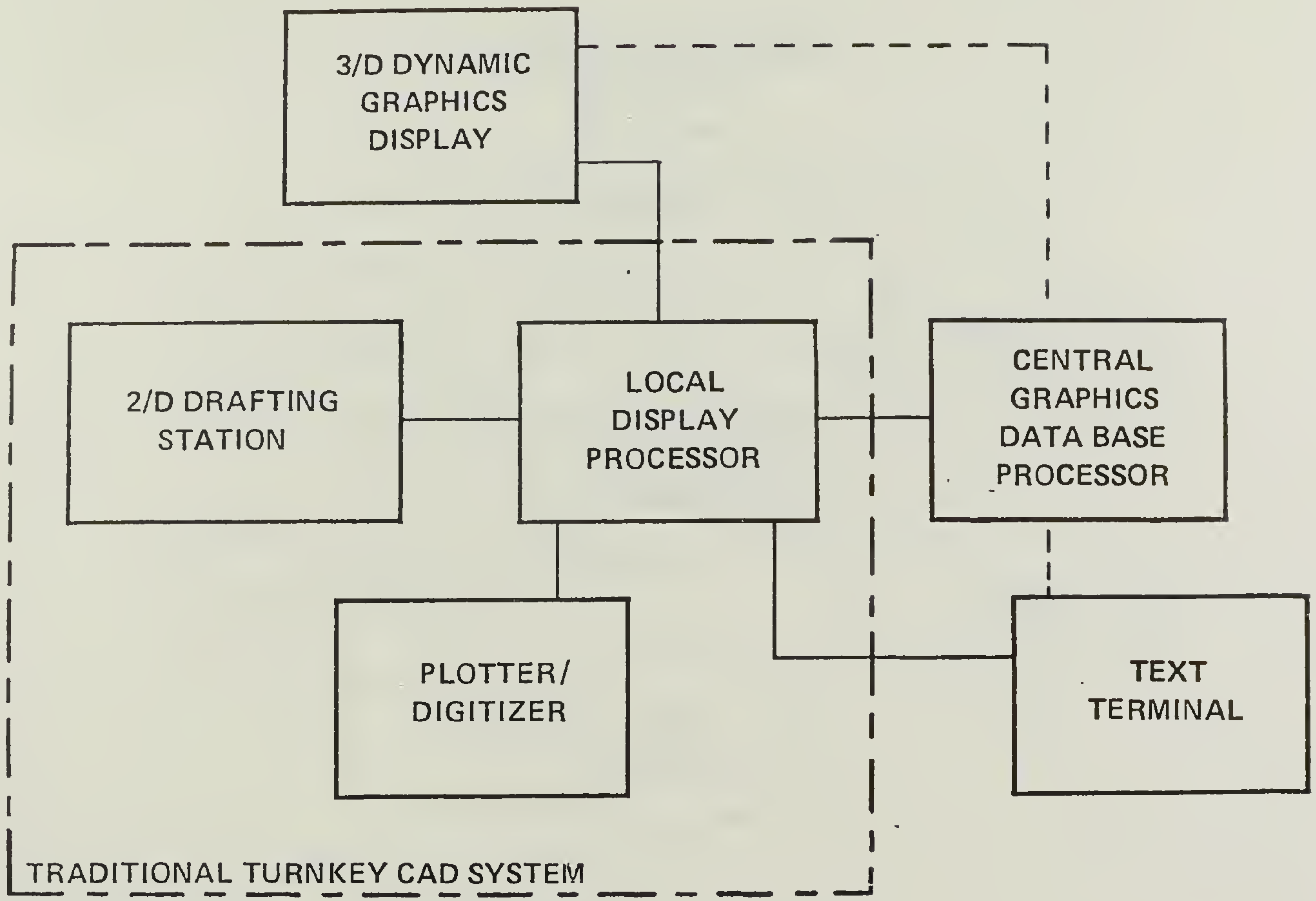
CAD/CAM MARKET BENEFITS

- INCREASED PRODUCTIVITY OF ENGINEERS
- SHORTER R&D CYCLE
- IMPROVED BIDDING AND SALES PROCESS
- IMPROVED USE OF MATERIALS
- STANDARDIZATION AND MORE FLEXIBILITY
- ELIMINATES PAPER

CAD/CAM MARKET
ROLE OF CAD/CAM



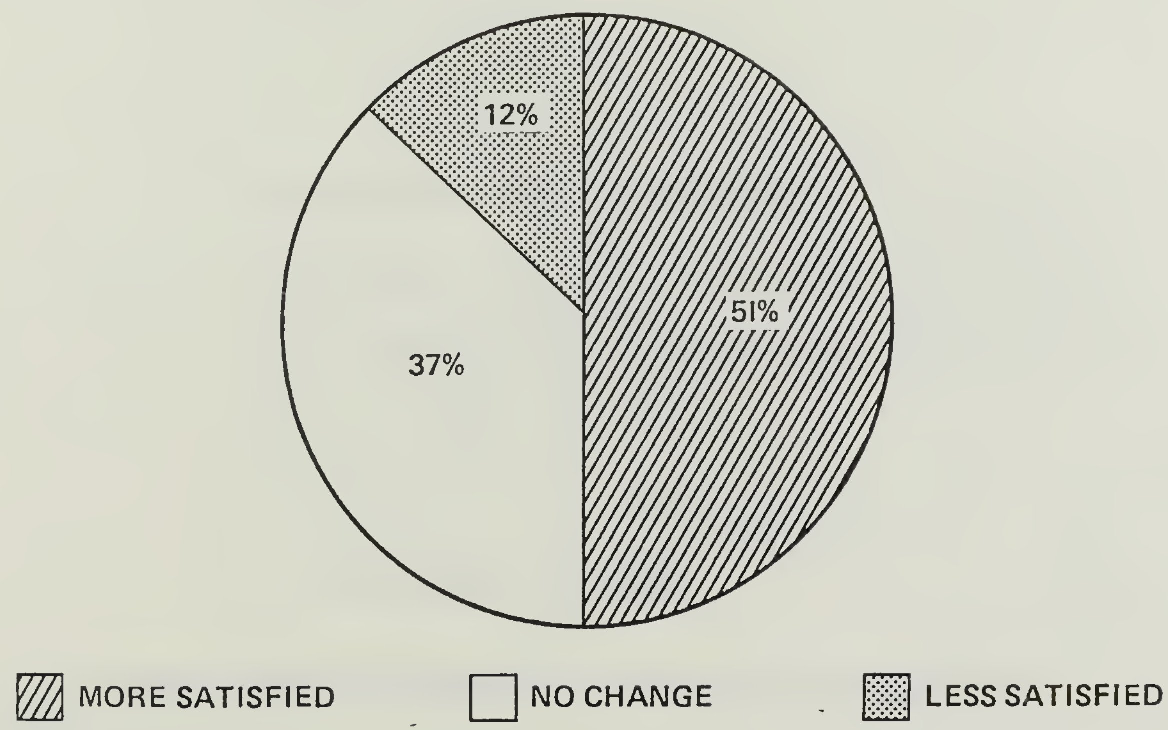
CAD/CAM MARKET
LOCAL VS. CENTRAL INTELLIGENCE



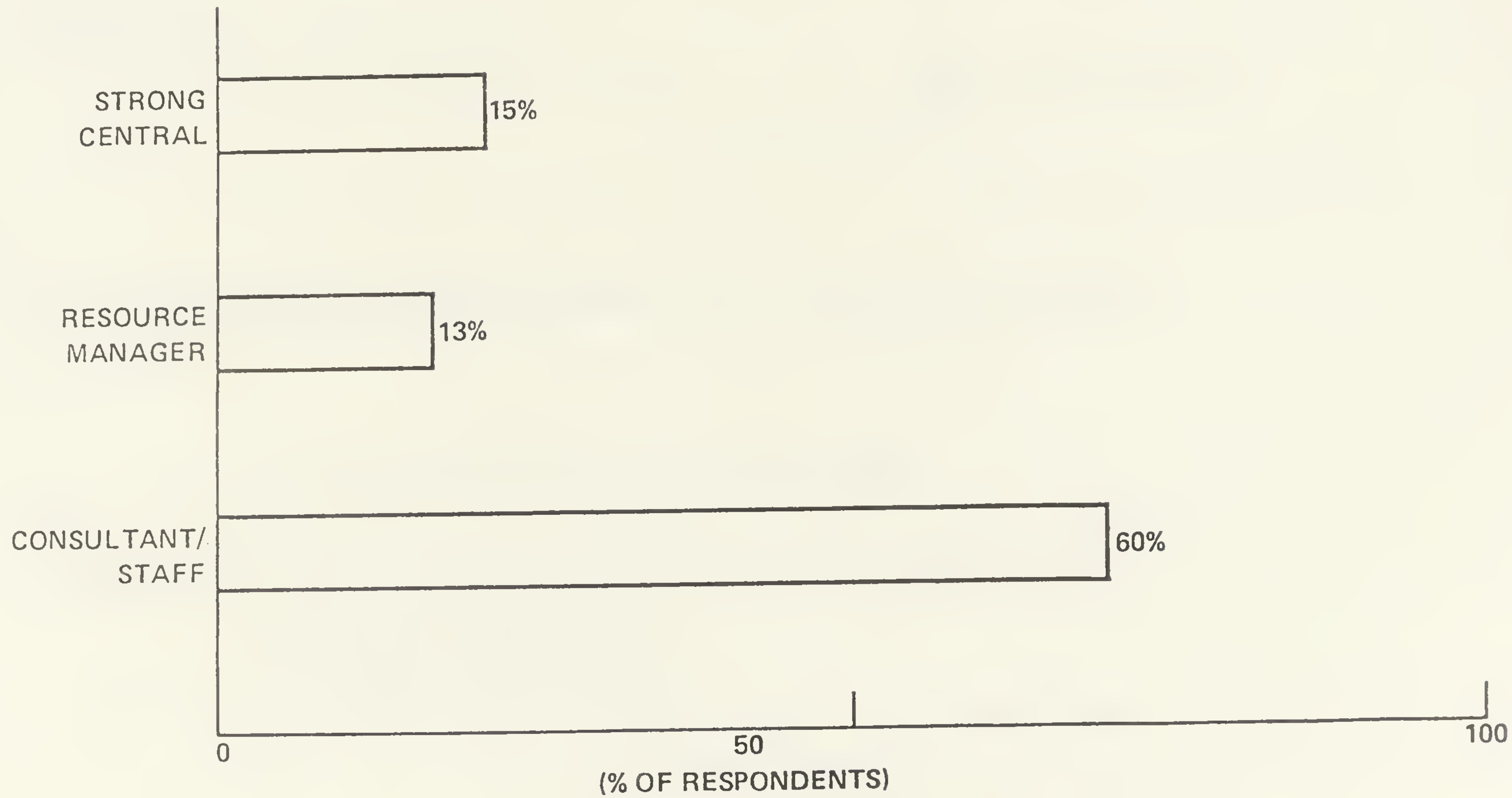
PERSONAL COMPUTERS IN LARGE COMPANIES

- PURCHASE PRICE < $15,000
- 'LARGE' COMPANIES = FORTUNE 500/50
- MOST SYSTEMS ARE SHARED
- EDP DEPARTMENT ATTITUDES ARE CRITICAL
- DEPARTMENT SIZE AFFECTS SYSTEM PRICE
- EXTERNAL RCS WILL BE AFFECTED

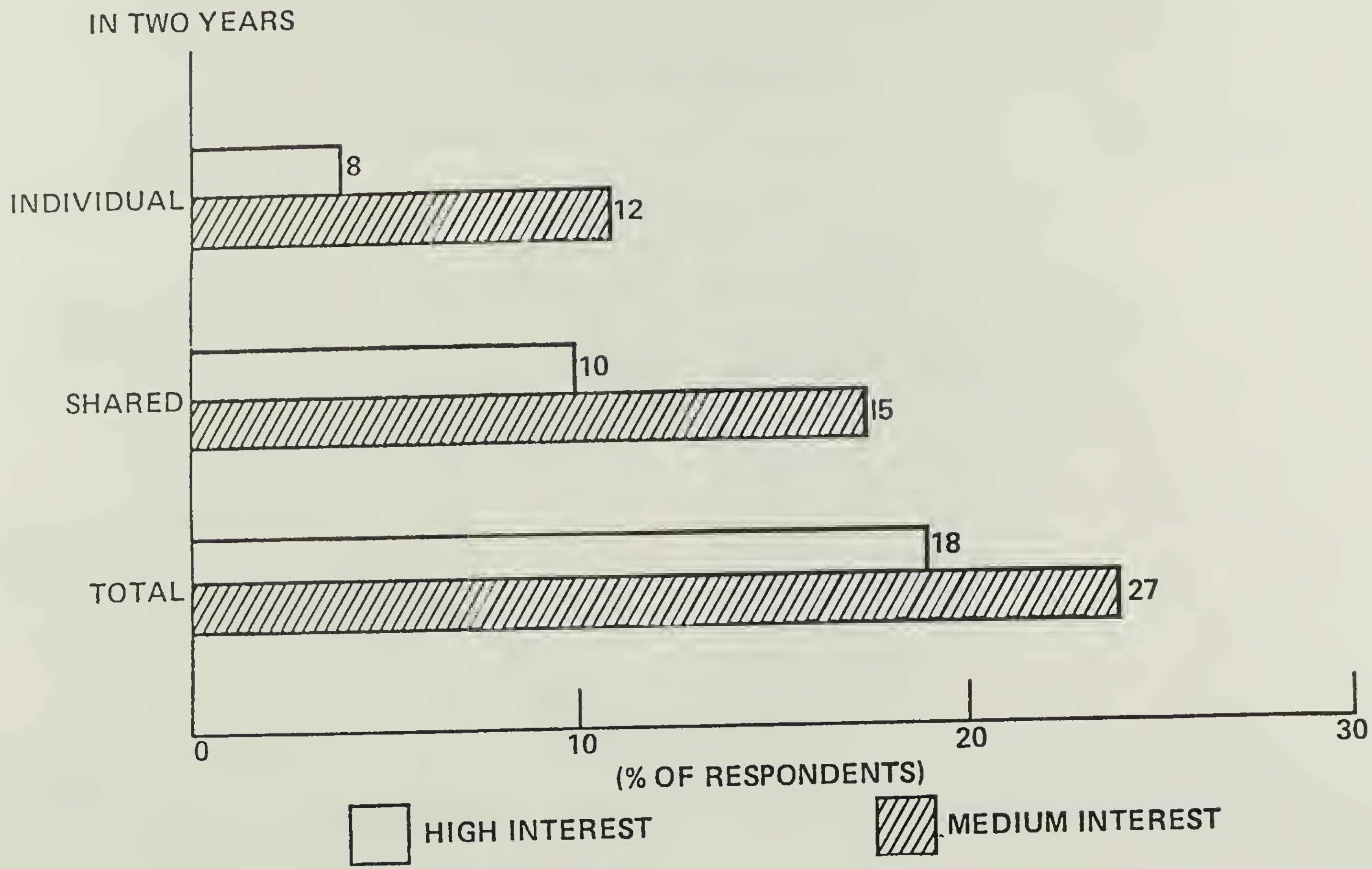
END USER SATISFACTION WITH EDP CHANGE FROM LAST YEAR



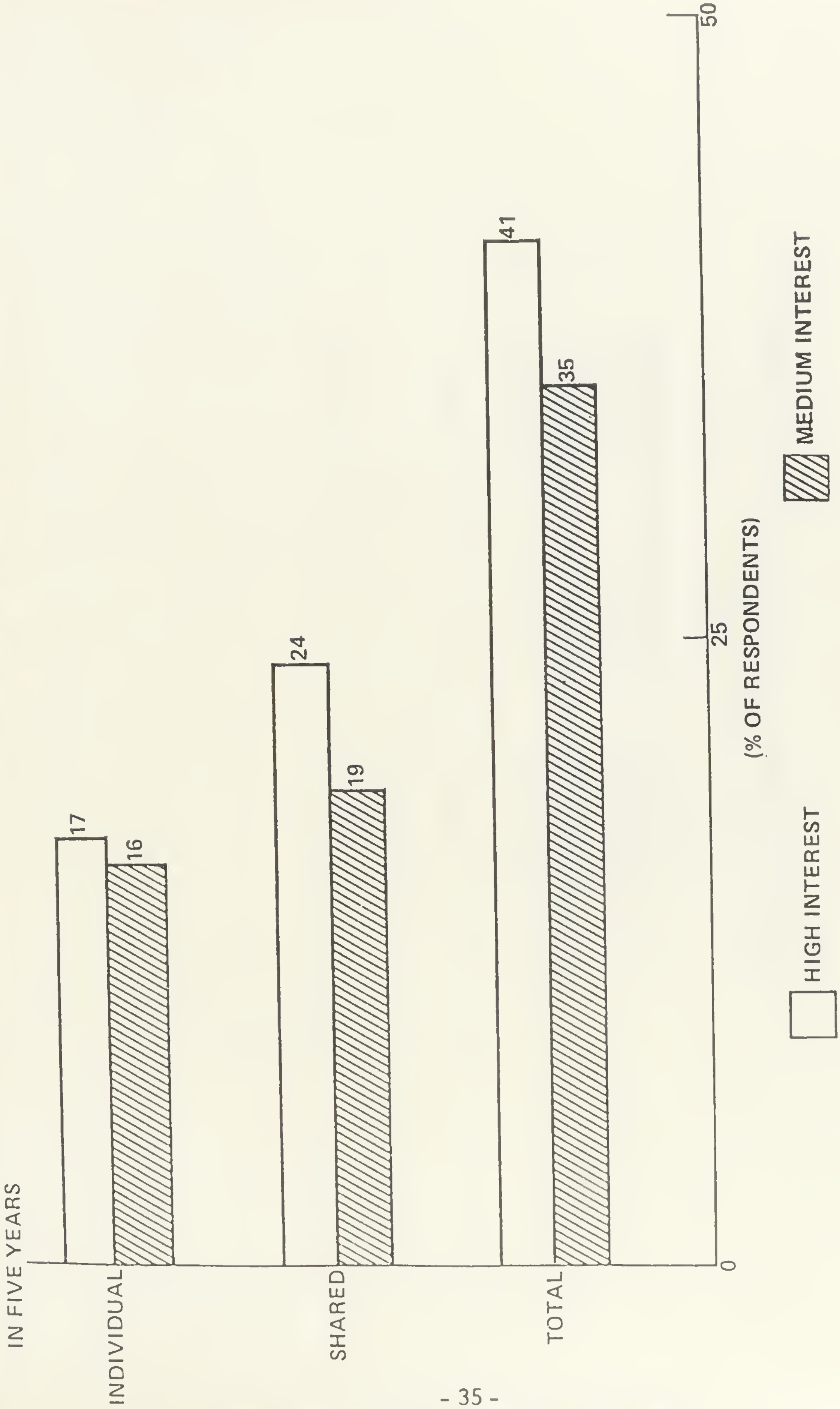
PERSONAL COMPUTERS IN LARGE COMPANIES
FUTURE ROLE OF THE EDP DEPARTMENT



PERSONAL COMPUTERS IN LARGE COMPANIES
PURCHASE INTEREST OF END USERS



PERSONAL COMPUTERS IN LARGE COMPANIES
PURCHASE INTEREST OF END USERS



PERSONAL COMPUTERS IN LARGE COMPANIES
SOFTWARE

- APPLICATIONS SOFTWARE INDEPENDENT OF EDP DEPT.

  - OVER 50% FROM USER DEPT.
  - OVER 30% FROM EXTERNAL SOFTWARE SUPPLIER

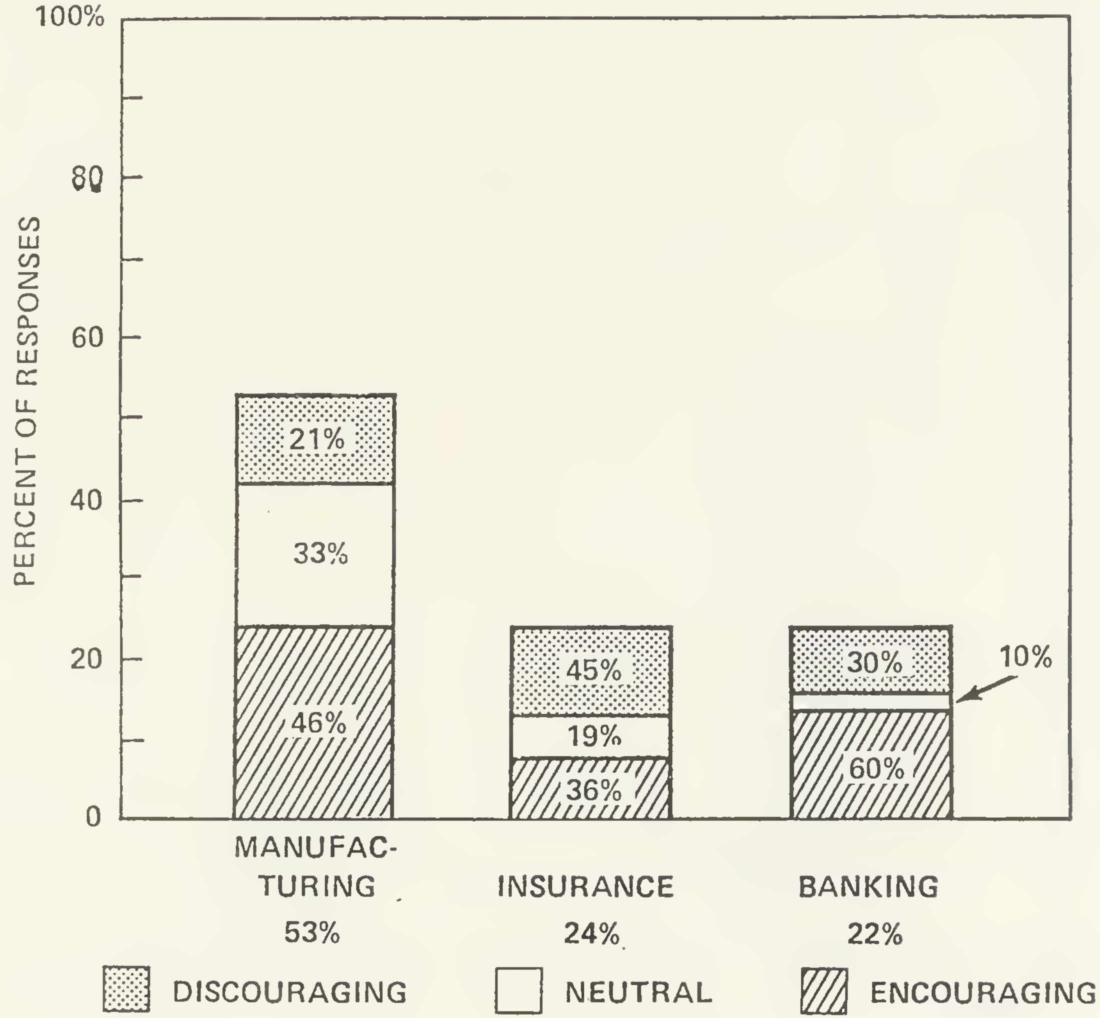
- USERS PRIMARILY RESPONSIBLE FOR MAINTENANCE

- PROGRAMMERS AT USER SITES IN 60% OF RESPONDENTS

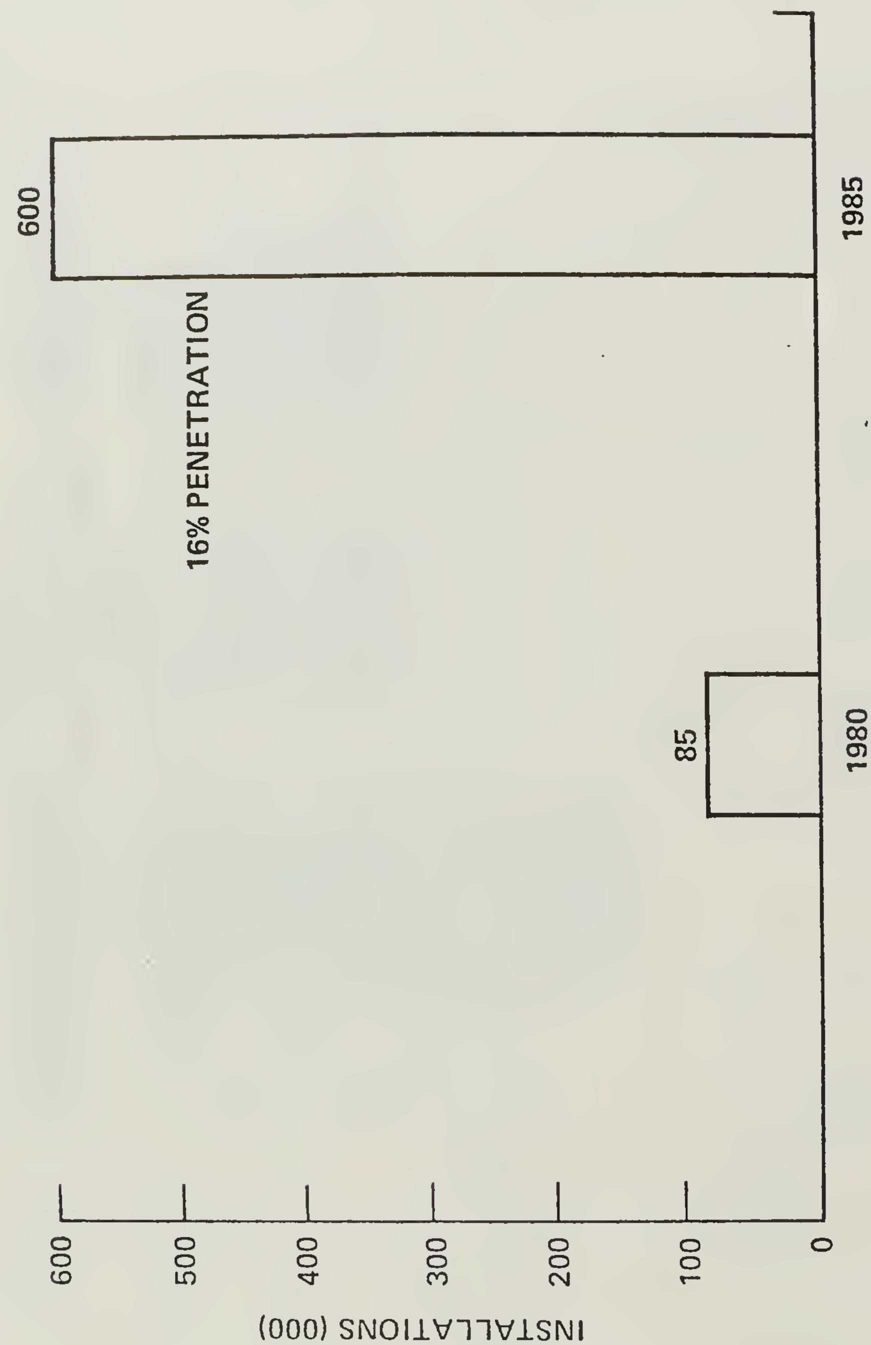
- APPLICATIONS DEMAND TYPICAL OF RCS

- PLANNING/FORECASTING AND GRAPHICS RATED HIGH

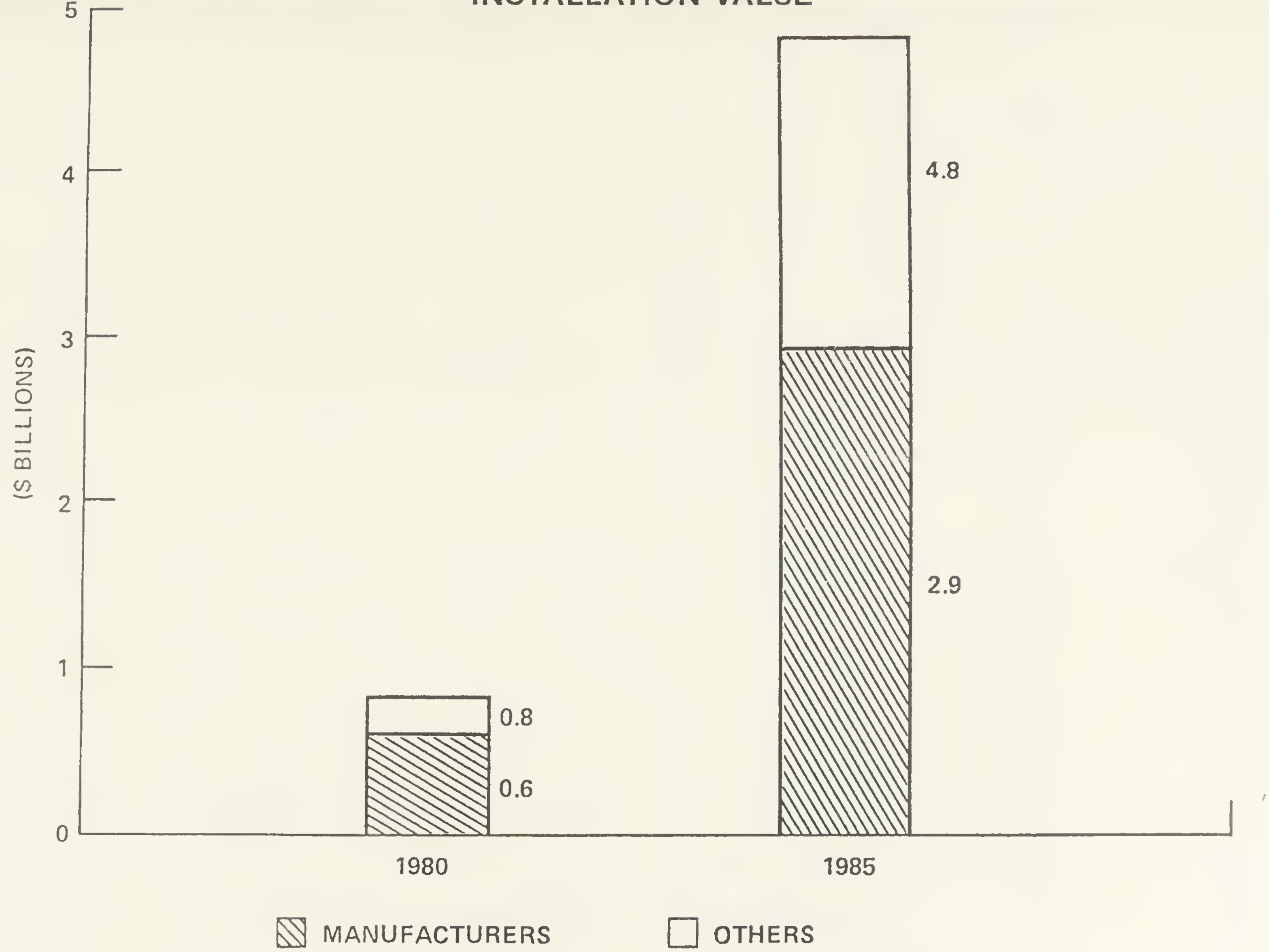
EDP DIRECTORS' ATTITUDES



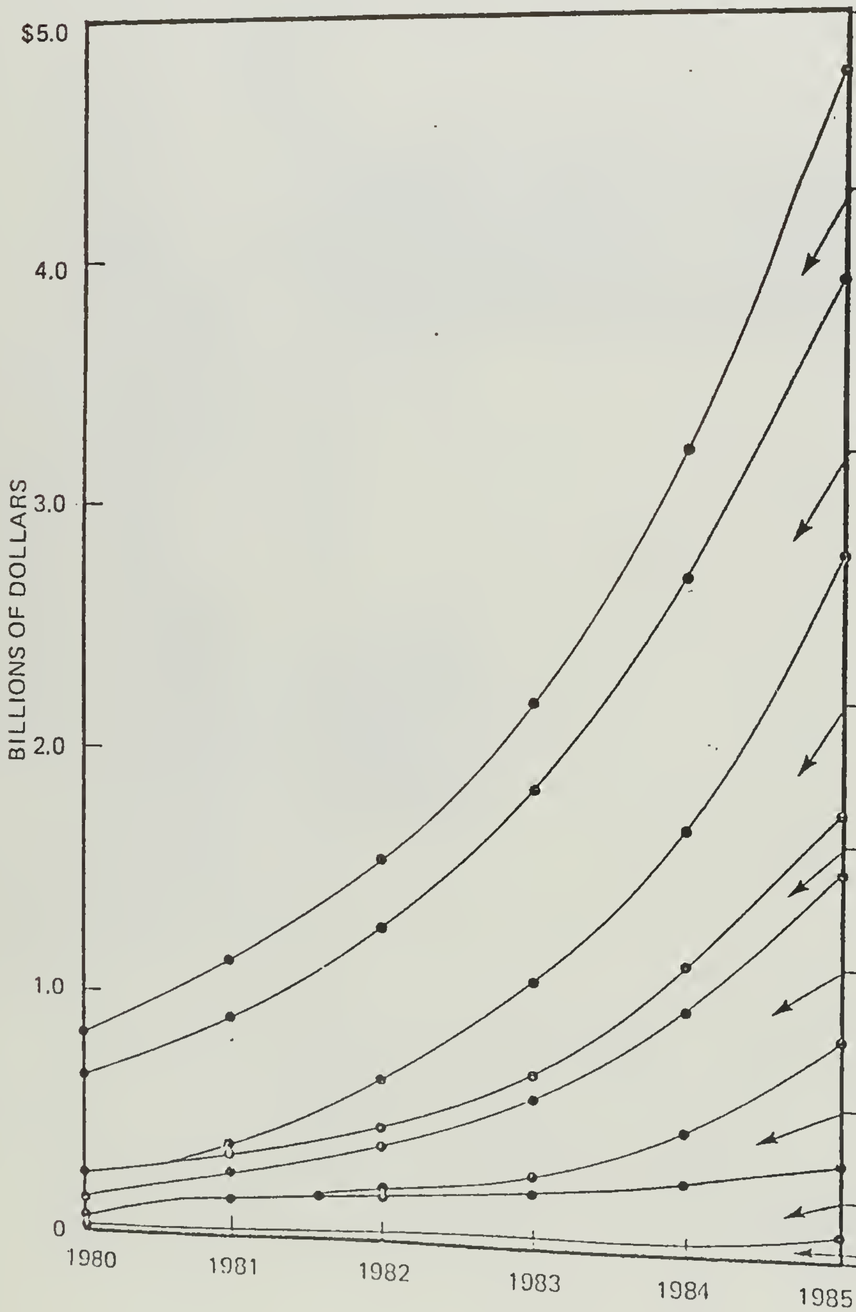
PERSONAL COMPUTERS IN LARGE COMPANIES
NUMBER OF INSTALLATIONS



INSTALLATION VALUE

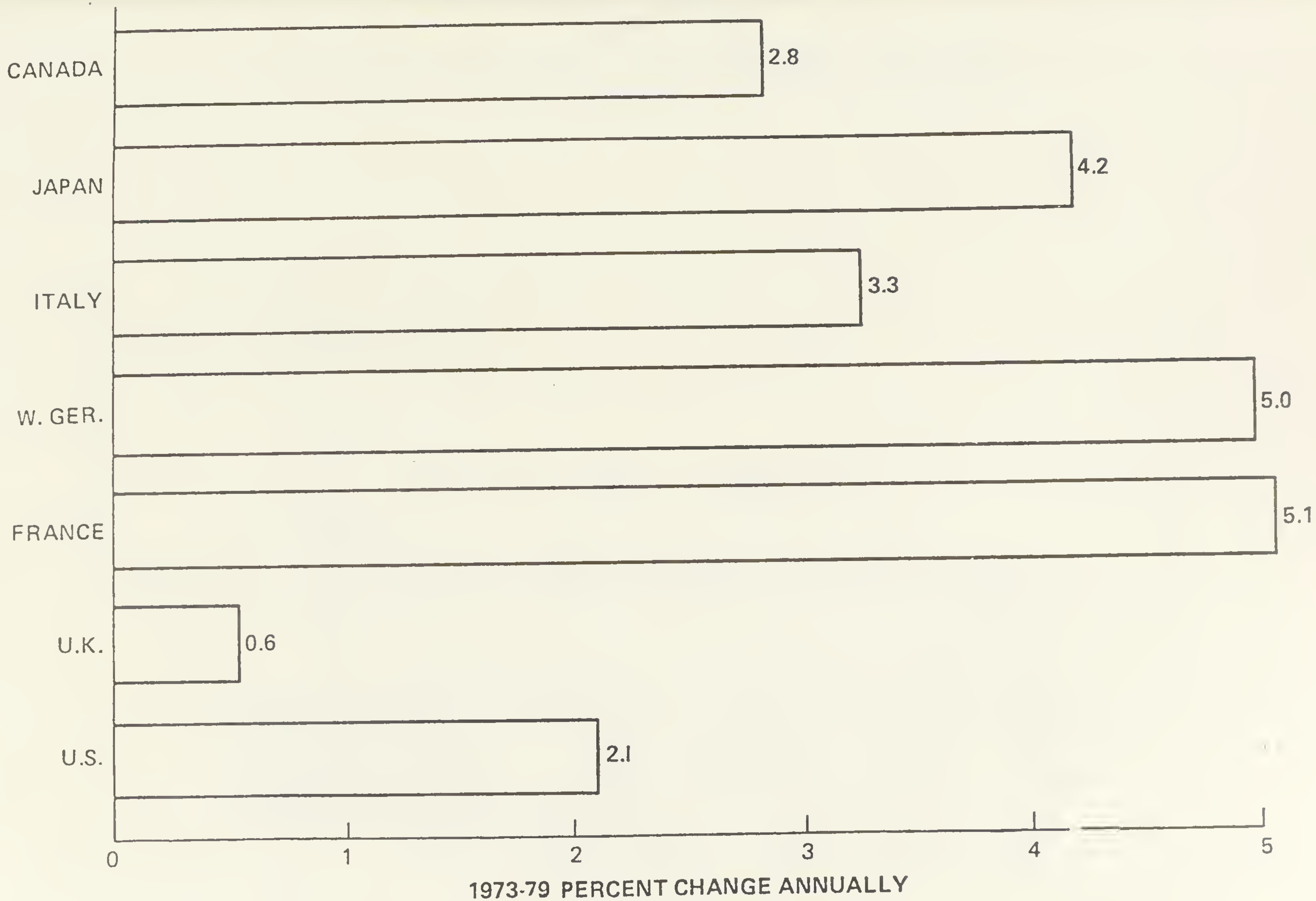


MARKET SHARE BY VENDOR TYPE, 1980-1985 FORECAST



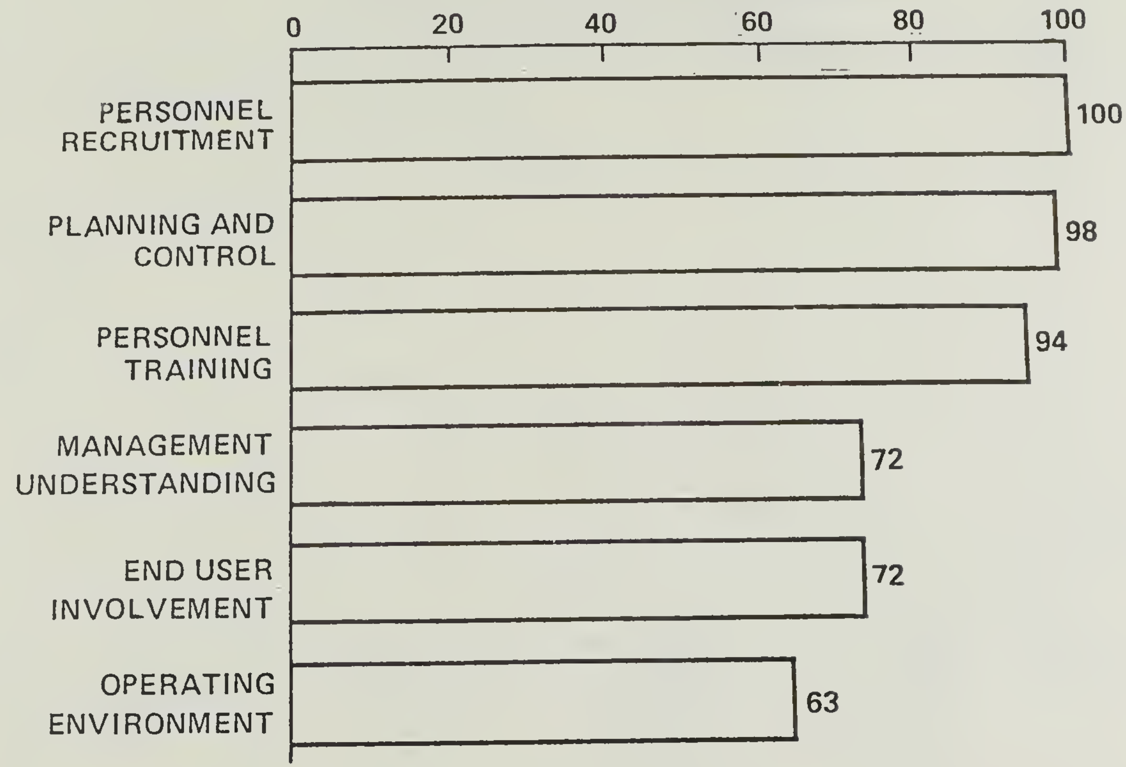
YEAR	1980	1985
	($ MILLION)	
MAINFRAME MANUFACTURERS	$185	$850
MINICOMPUTER MANUFACTURERS	430	1,100
MICROSYSTEM MANUFACTURERS	–	950
DISTRIBUTORS	45	350
TURNKEY SYSTEM VENDORS	95	700
COMPUTER SERVICES COMPANIES	–	500
COMPUTER STORES	70	250
OTHERS	25	100
TOTAL	$850	$4,800

PRODUCTIVITY 1973 - 1979

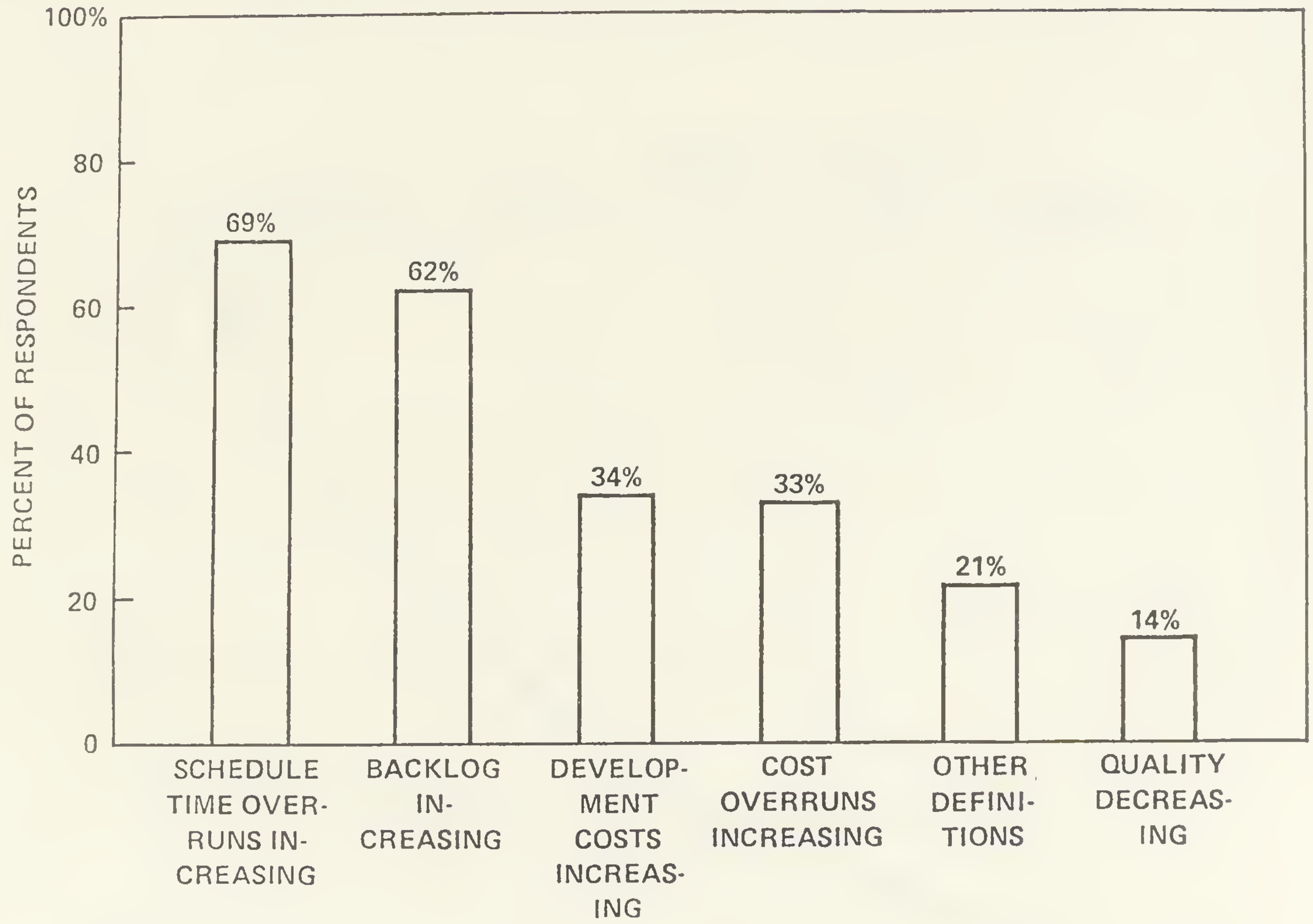


PRODUCTIVITY

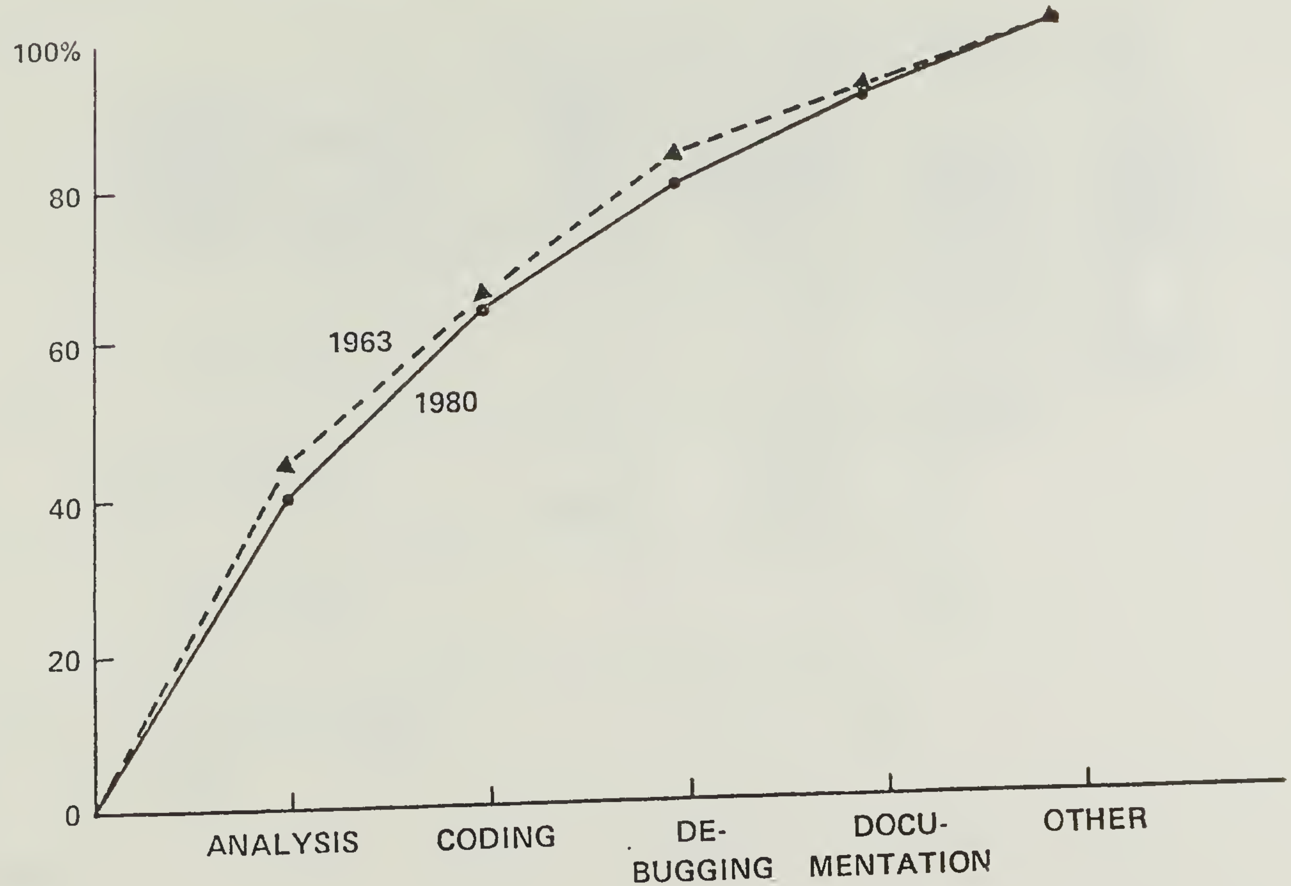
RELATIVE IMPORTANCE OF EDP PROBLEMS



PRODUCTIVITY
SYSTEMS & SOFTWARE PRODUCTIVITY PROBLEMS

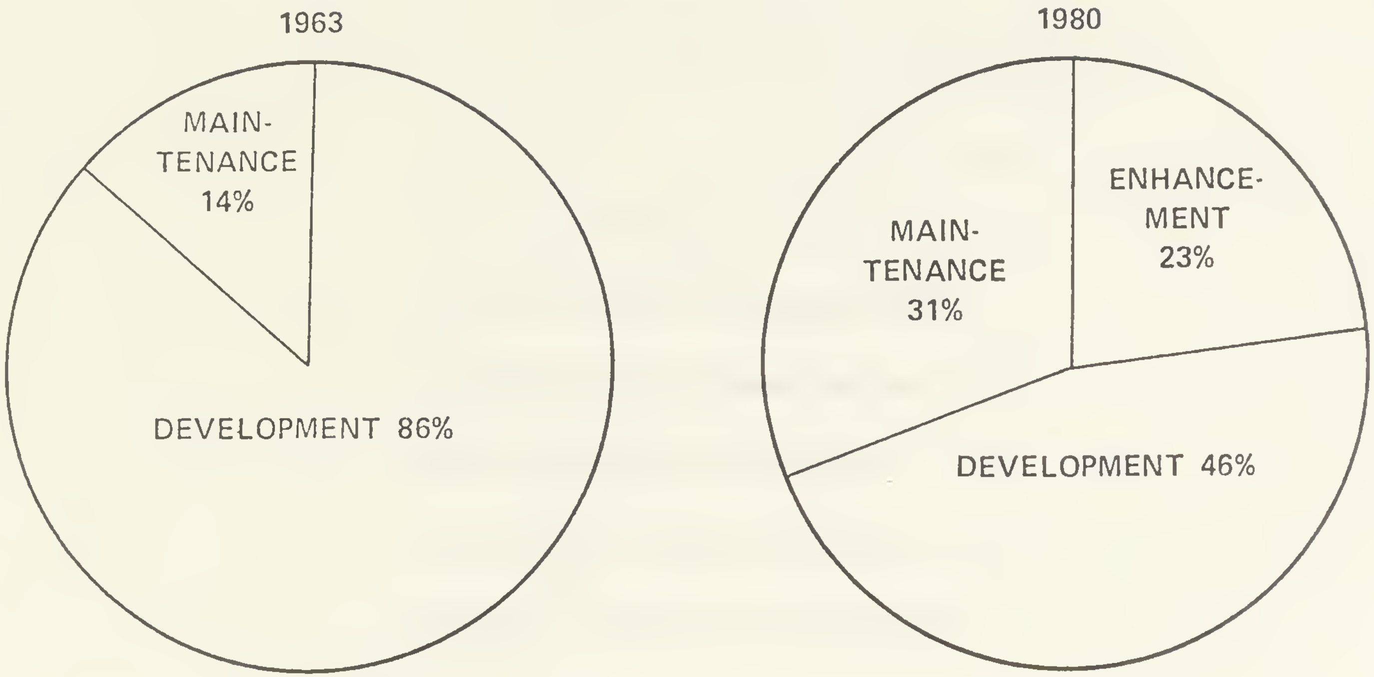


PRODUCTIVITY
TIME USAGE IN SYSTEMS DEVELOPMENT



PRODUCTIVITY

APPLICATION PROGRAMMER TIME DISTRIBUTION



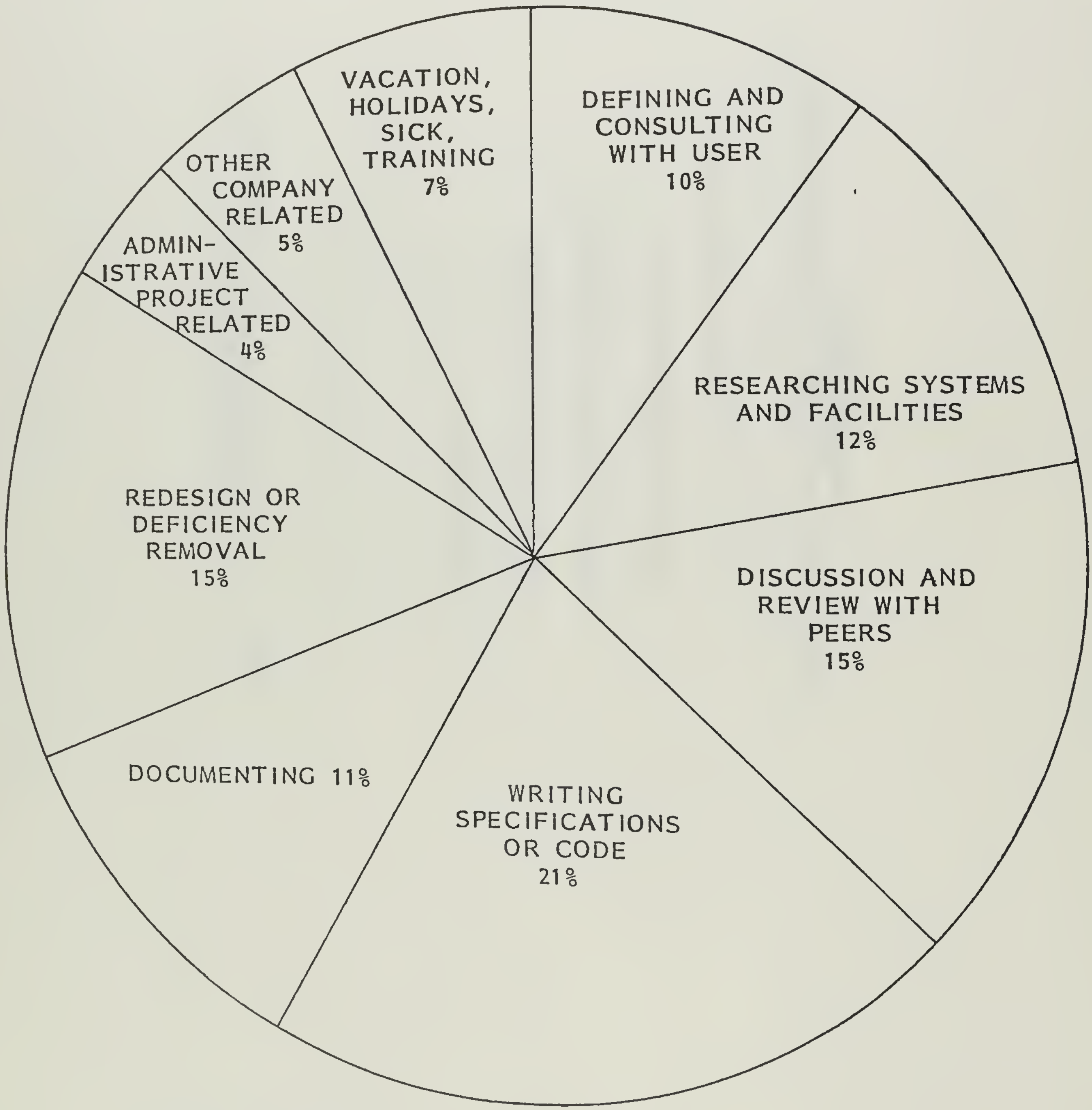
PRODUCTIVITY
USEFUL PRODUCTIVITY MEASUREMENTS

- NUMBER OF MODULES COMPLETED
- PERCENT OF TASKS COMPLETED ON TIME
- EXPENDITURE VERSUS BUDGET
- LINES OF NEW CODE PER UNIT OF TIME
- COST PER THOUSAND LINES OF CODE
- COST PER FUNCTION

PRODUCTIVITY
USEFUL PRODUCTIVITY MEASUREMENTS

- DEFECTS PER THOUSAND LINES OF CODE
- PERCENT OF DEFECTS REMOVED
- DEGREE OF USER SATISFACTION
- NON-PROJECT TIME/TOTAL TIME
- TURNOVER RATE

PRODUCTIVITY
ANALYST/PROGRAMMER TIME DISTRIBUTION



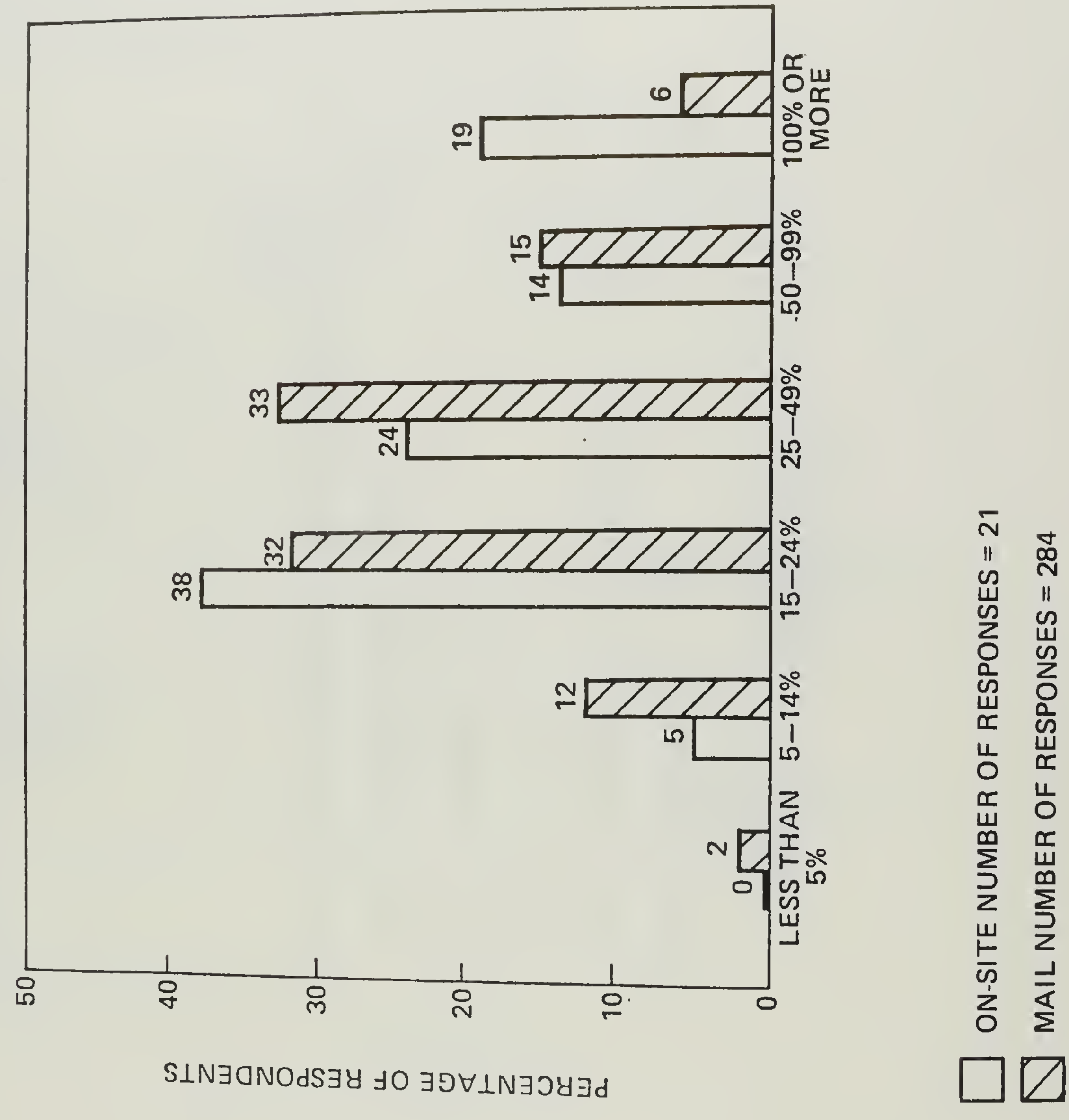
NUMBER OF RESPONSES = 23

PRODUCTIVITY
CUMULATIVE "UNPRODUCTIVITY" IMPACT

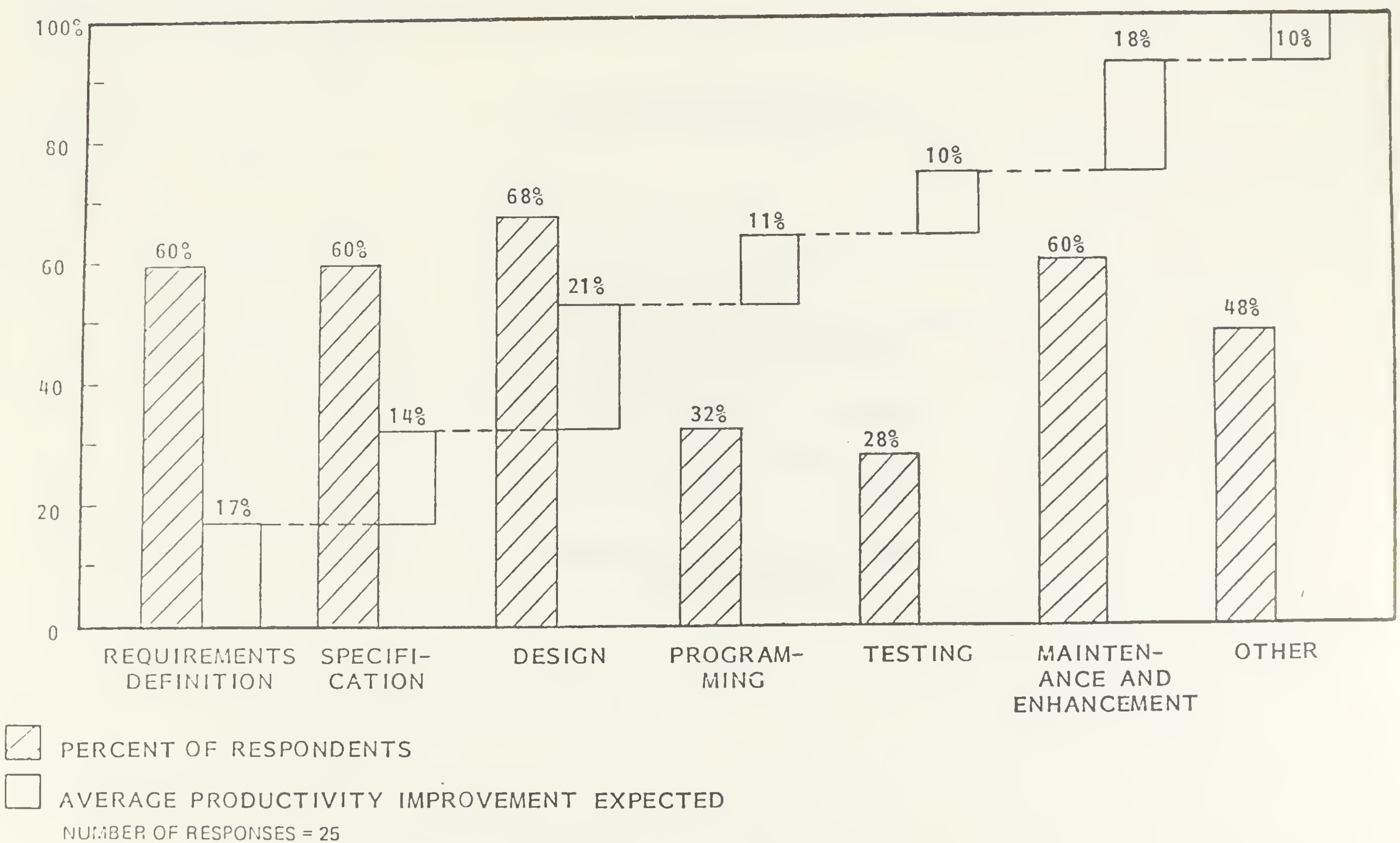
GROSS TIME AVAILABLE	100%
LESS: ADMINISTRATIVE, HOLIDAYS, ETC.	- 15
LESS: WASTED TIME	- 10
LESS: MISDIRECTED TIME	- 25
LESS: COMPLEXITY ADJUSTMENT	-25 to - 45
NET EFFECTIVE TIME AVAILABLE, WORST CASE	5%

PRODUCTIVITY

NEEDED INCREASE IN SOFTWARE PRODUCTIVITY



SOURCES OF PRODUCTIVITY IMPROVEMENT



PRODUCTIVITY
EMERGING TECHNIQUES

- REQUIREMENTS LANGUAGES
- ORGANIZATIONAL TECHNIQUES
- PROGRAMMER'S WORKBENCH
- REUSABLE CODE

PRODUCTIVITY
EMERGING TECHNIQUES

- STRUCTURED ANALYSIS
- MENU-DRIVEN PROGRAMMING
- VERIFICATION AND VALIDATION METHODS
- MISCELLANEOUS AIDS

PRODUCTIVITY TOOLS

STAGE ZERO:	COBOL, FORTRAN, PL/I, BASIC, ASSEMBLER(!)
STAGE ONE:	TSO OR EQUIVALENT
STAGE TWO:	STRUCTURED DESIGN TECHNIQUES, DATA BASE-ORIENTED LANGUAGES
STAGE THREE:	AUTOMATED, INTEGRATED SET OF TOOLS, LIMITED DIRECT USER ACCESS
STAGE FOUR:	WIDESPREAD DIRECT USER ACCESS, SELECT SOFTWARE BUILDING BLOCKS

PRODUCTIVITY INVESTMENT/PAYOFF

STAGE ZERO:	UNCONTROLLED COSTS
STAGE ONE:	BEGINNING TO CONTROL COSTS, CONSCIOUS INVESTMENT IN IMPROVEMENT TECHNIQUES
STAGE TWO:	CONTINUED INVESTMENT
STAGE THREE:	EMERGING PAYOFF
STAGE FOUR:	SUBSTANTIAL PAYOFF

TELECOMMUNICATIONS

- TOTAL EXPENDITURES ≡ EDP EXPENDITURES
- NETWORKS DESIGNED FROM AVAILABLE SOLUTIONS
- CURRENT SOLUTIONS HARDWARE ORIENTED
- LOCAL NETWORKS EMERGING RAPIDLY
- BARRIERS BREAKING DOWN

TELECOMMUNICATIONS

- INTEGRATION OF NETWORKS

  - SINGLE DATA NETWORK
  - INCLUDES DDP SUPPORT
  - INTEGRATION OF MESSAGE NOW
  - VOICE, IMAGE LATER

- DATA ONLY TRANSMISSION SERVICES IMPACTED NEGATIVELY

VOICE PROCESSING

- MAJOR TELECOMMUNICATIONS INTEREST
- TRANSMISSION FACILITIES ARE TUNED FOR VOICE
- DIGITIZING MAKES STORING/PROCESSING FEASIBLE
- STORE AND FORWARD IMPORTANT APPLICATION
- GETS RID OF PAPER
- SERVICES EMERGING:
  - VOICE PROCESSING BASED
  - ACTUAL VOICE (VOICE BANK)

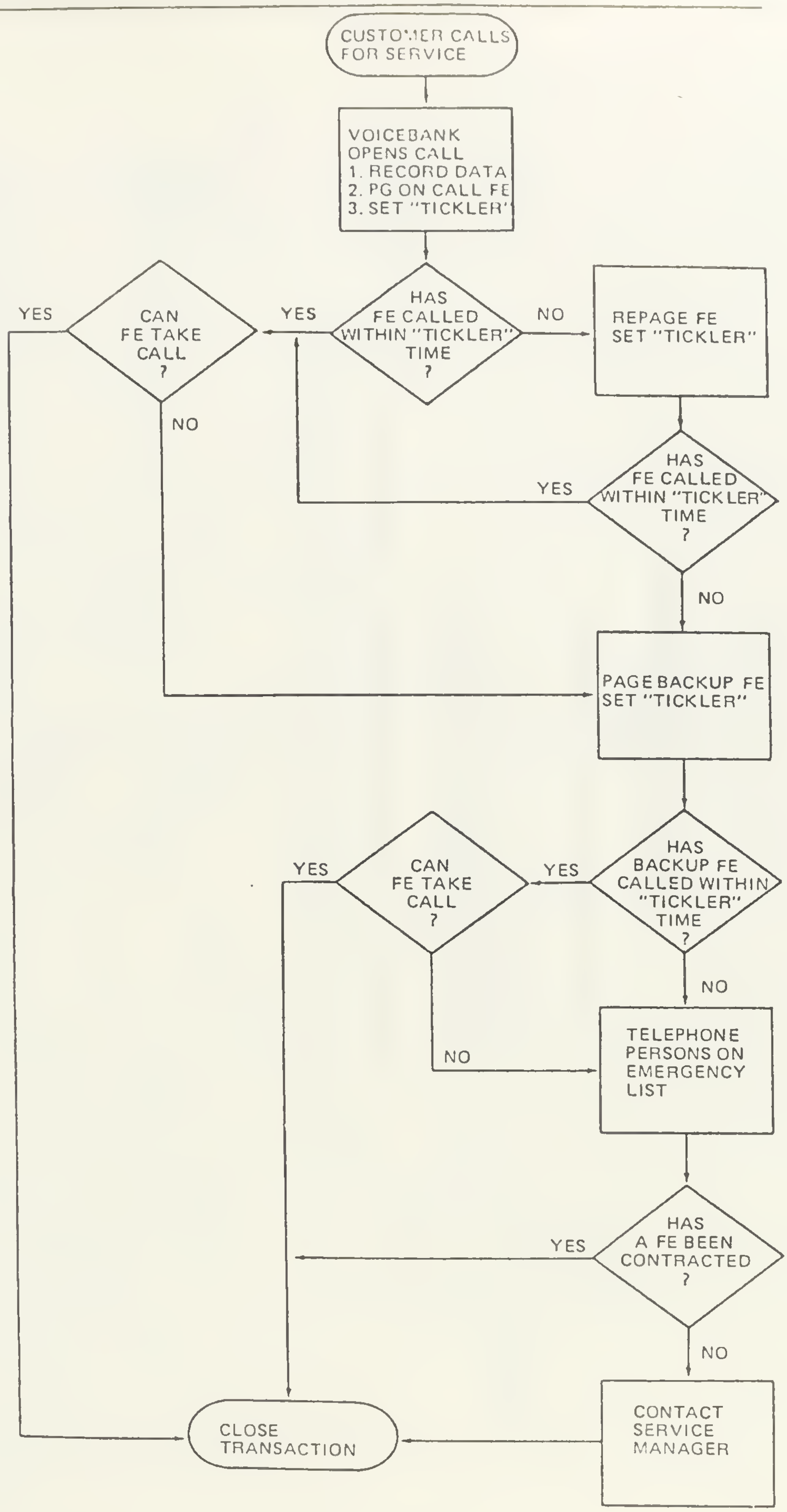
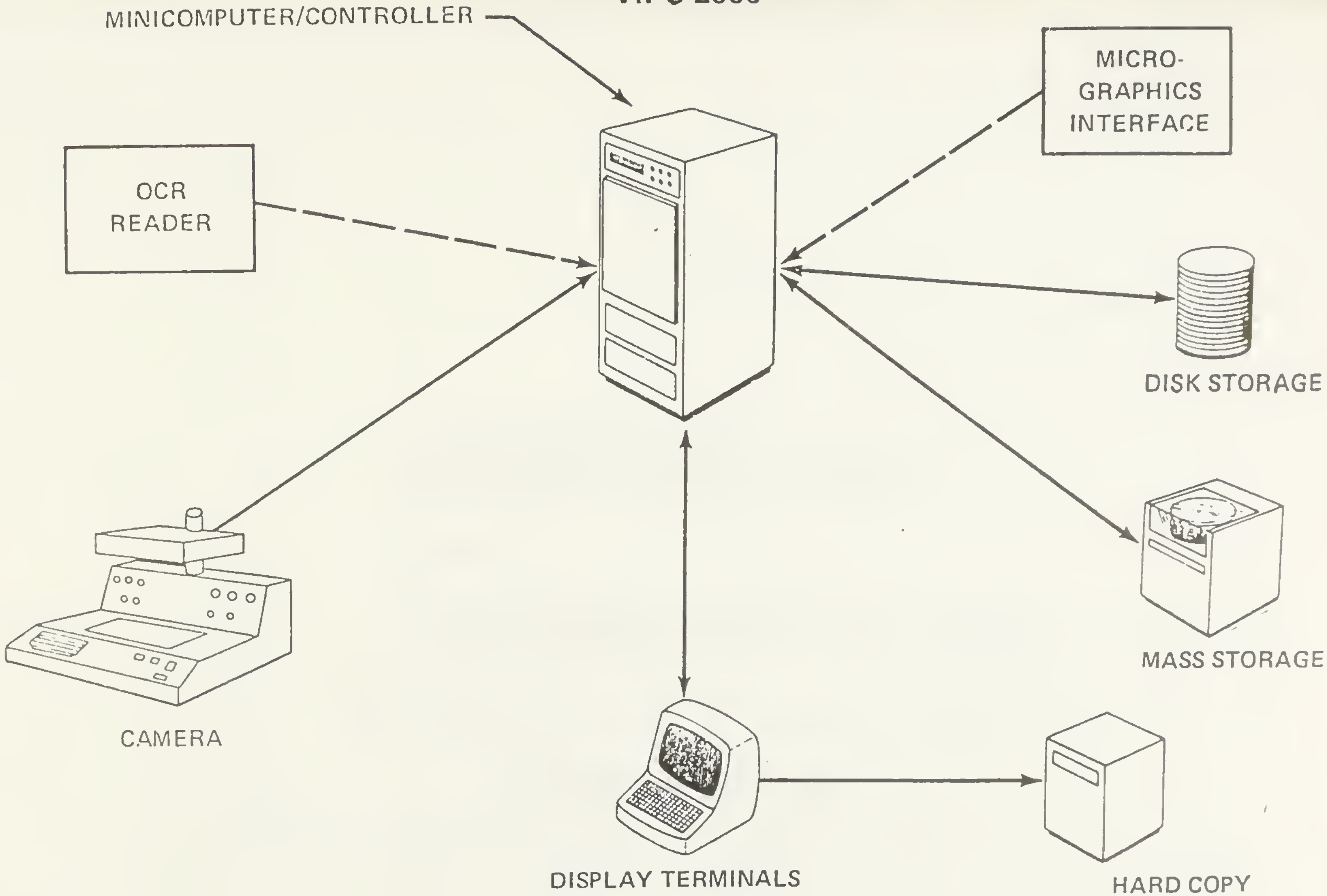

CUSTOMER CALLS FOR SERVICE
VOICEBANK OPENS CALL
1. RECORD DATA
2. PG ON CALL FE
3. SET "TICKLER"
HAS FE CALLED WITHIN "TICKLER" TIME ?
YES
NO
CAN FE TAKE CALL ?
YES
NO
REPAGE FE SET "TICKLER"
HAS FE CALLED WITHIN "TICKLER" TIME ?
YES
NO
PAGE BACKUP FE SET "TICKLER"
HAS BACKUP FE CALLED WITHIN "TICKLER" TIME ?
YES
NO
CAN FE TAKE CALL ?
YES
NO
TELEPHONE PERSONS ON EMERGENCY LIST
HAS A FE BEEN CONTRACTED ?
YES
NO
CONTACT SERVICE MANAGER
CLOSE TRANSACTION

IMAGE PROCESSING

- IMAGE PROCESSING SYSTEMS HANDLE:
  - DOCUMENTS
  - CORRESPONDENCE/SIGNATURES
  - PICTURES, DIAGRAMS, AND GRAPHICS
- OPPORTUNITY TO INTEGRATE "MOVIES" AND "AUDIO" LATER
- PROVIDE MULTIPOINT ACCESS WITHOUT PHYSICAL MOVEMENT

VIPS-2000

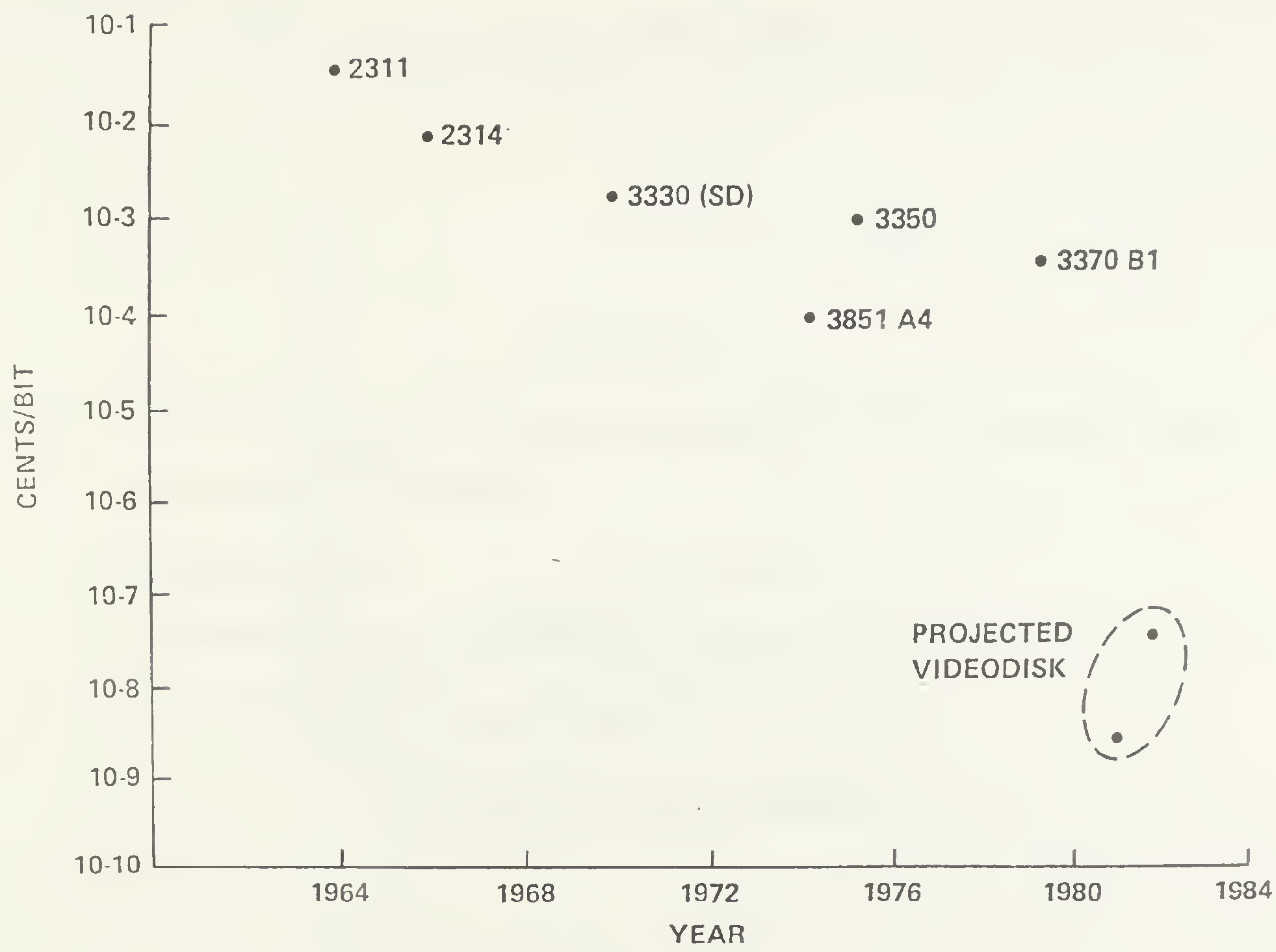


FRAME

IMAGE PROCESSING

- MADE POSSIBLE BY OPTICAL STORAGE (VIDEO DISK)
  - ONE PACK HOLDS 10^{12} BITS
  - SYSTEMS PROJECTED ACCOMMODATING 10^{15} BITS
- 10^{15} BITS IS:
  - 50 MILES OF SHELF SPACE FOR BOOKS
  - 20 BILLION PAGES OF COMPUTER PRINTOUT
  - 3 MILLION MILES OF PAPER

ON-LINE STORAGE COSTS

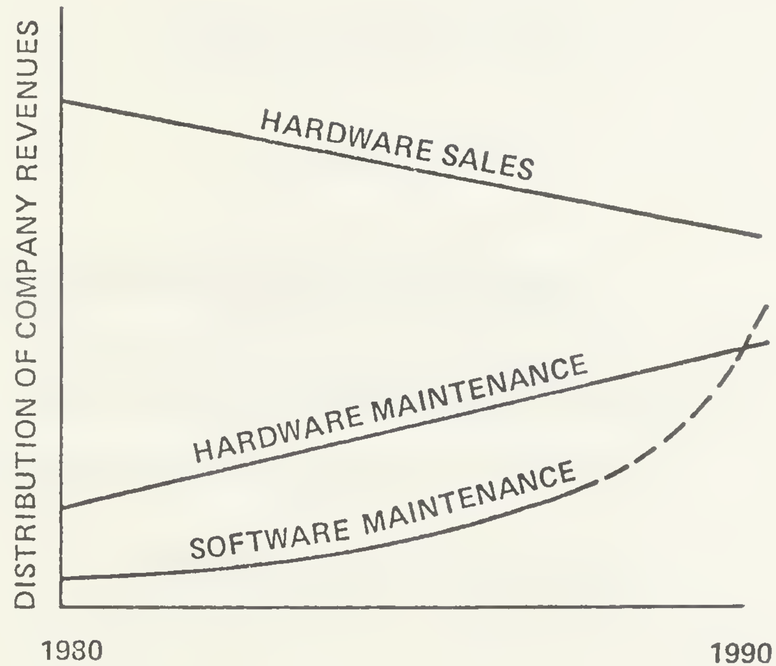


TRENDS IN FIELD SERVICES

- MAINTENANCE/SUPPORT IMPORTANT FOR ALL SYSTEMS
- HARDWARE/SOFTWARE MAINTENANCE COMBINATION
- NEW APPROACHES
- MAJOR PROFIT GENERATOR
- ALSO INCLUDES TRAINING, EDUCATION, DOCUMENTATION, AND CONSULTING

TRENDS IN FIELD SERVICES

VENDOR REVENUES



TRENDS IN FIELD SERVICES

- HIGH POTENTIAL IN SOFTWARE MAINTENANCE
  - TOTAL SOFTWARE EXPENDITURES BY EDP $25B
  - SOFTWARE MAINTENANCE EXPENDITURES BY EDP $10B
- SOFTWARE MAINTENANCE USER FUNDED

TRENDS IN FIELD SERVICES
NEW APPROACHES

- DEPOT MAINTENANCE
- REMOTE DIAGNOSTICS
- SYSTEM SUPPORT CENTERS
- USER SELF-MAINTENANCE

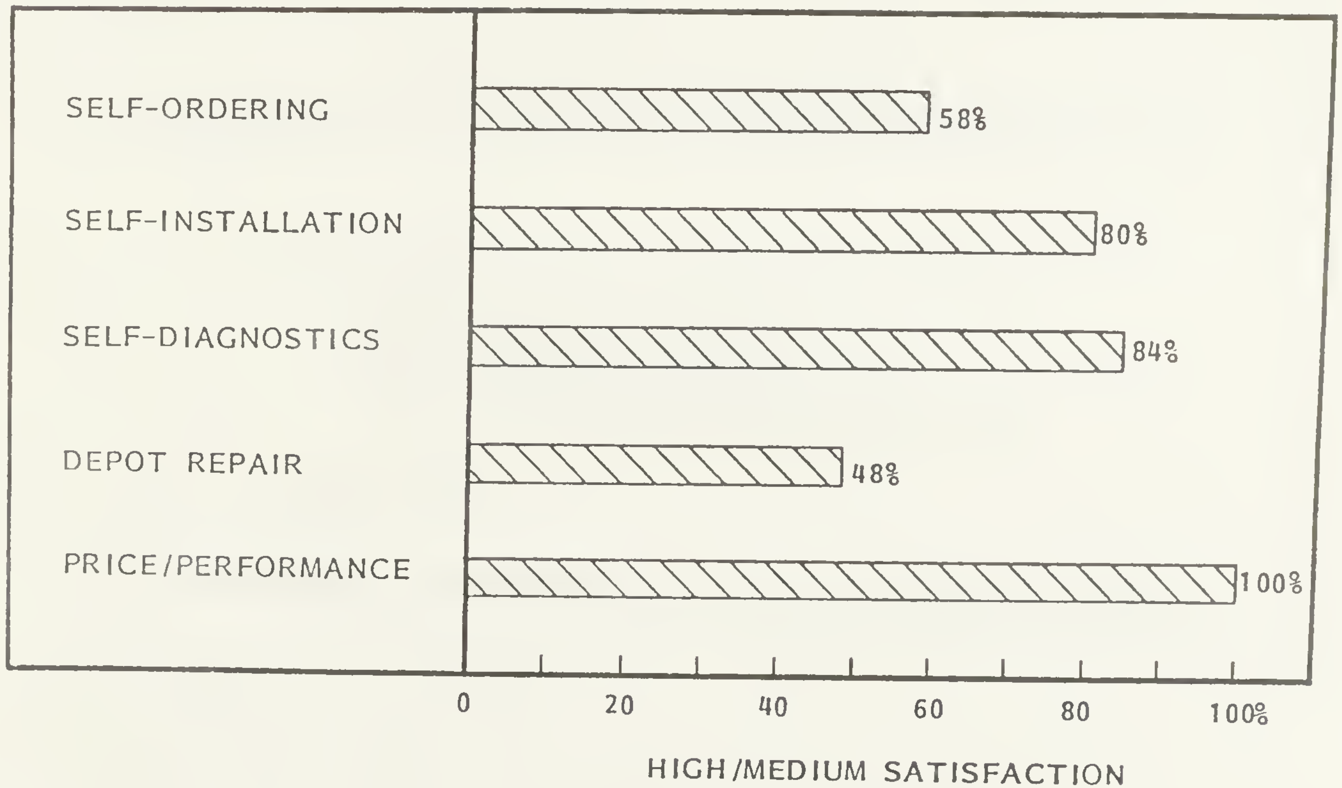
TRENDS IN FIELD SERVICES
REMOTE DIAGNOSTICS

- IMPROVED PEOPLE PRODUCTIVITY

  - INCREASED EFFICIENCY AND EFFECTIVENESS OF CALLS
  - REDUCED MEAN TIME TO REPAIR
  - IMPROVED UP-TIME

- CHANGES STAFF REQUIREMENTS

USER REACTION TO DEPOT MAINTENANCE



FIELD SERVICE & COMPUTER SERVICES COMPARISONS

<u>SIMILARITIES</u>

DERIVED FROM HARDWARE MANUFACTURERS
PEOPLE INTENSIVE AND PEOPLE SHORT
PRICE COMPARISONS DIFFICULT

TRENDS IN FIELD SERVICES
FIELD SERVICE & COMPUTER SERVICES COMPARISONS

DIFFERENCES

- COMPUTER SERVICES PRICED HIGH, SOLD HARD, COMPETE WITH IN-HOUSE

IV COMPUTER SERVICES MARKETS

IMPACTS OF ECONOMY

- RECESSION IN 1980
- SLOW RECOVERY IN 1981
- CONSUMER PRICE INDEX UP 13% IN 1980
- PRODUCTION PRICE INDEX UP 6% IN 1980

IMPACTS OF ECONOMY

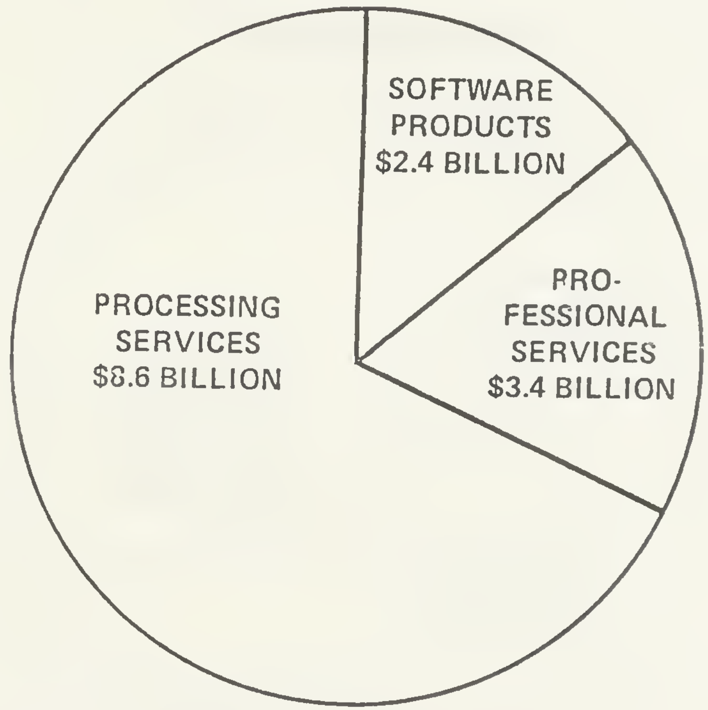
- PRICE INCREASES THROUGH 1985

  - PROCESSING SERVICES 6/7%
  - SOFTWARE PRODUCTS 8/9%
  - PROFESSIONAI SERVICES 9/10%

- RECESSION SLOWS GROWTH

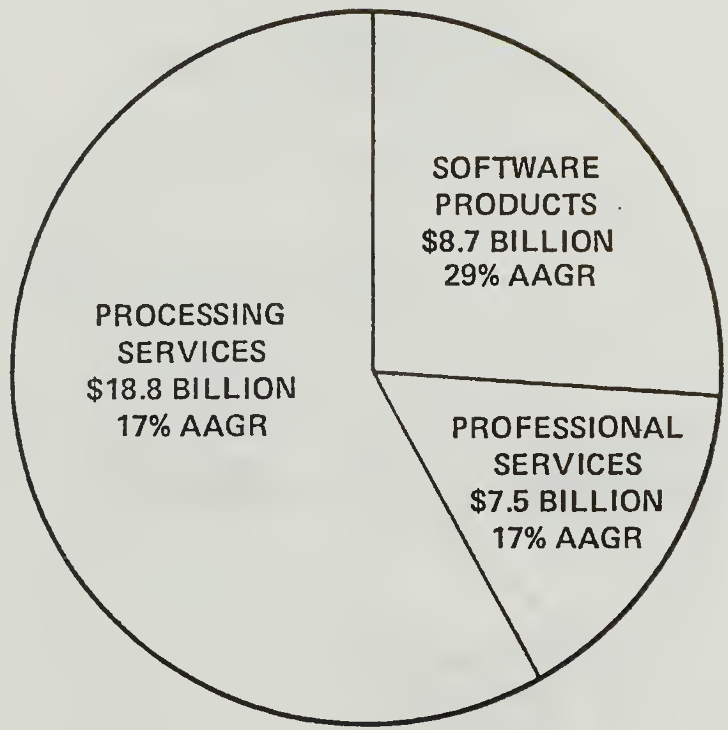
- HIGH COST OF MONEY IMPACTS TURNKEY VENDORS

U.S. COMPUTER SERVICES MARKET-1980
(CURRENT DOLLARS)



$14.4 BILLION

U.S. COMPUTER SERVICES MARKET–1985
(CURRENT DOLLARS)



$35 BILLION, 20% AAGR

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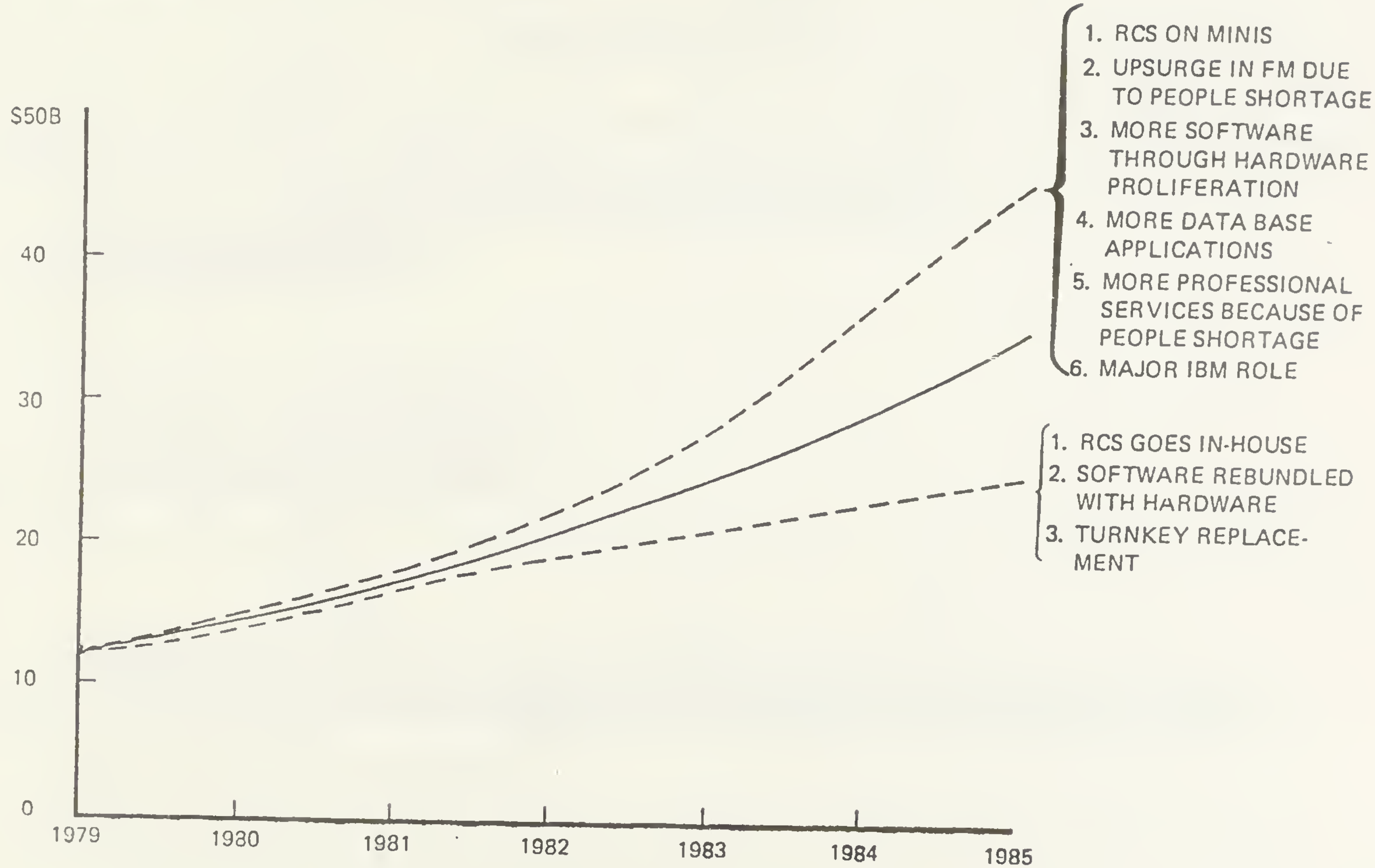
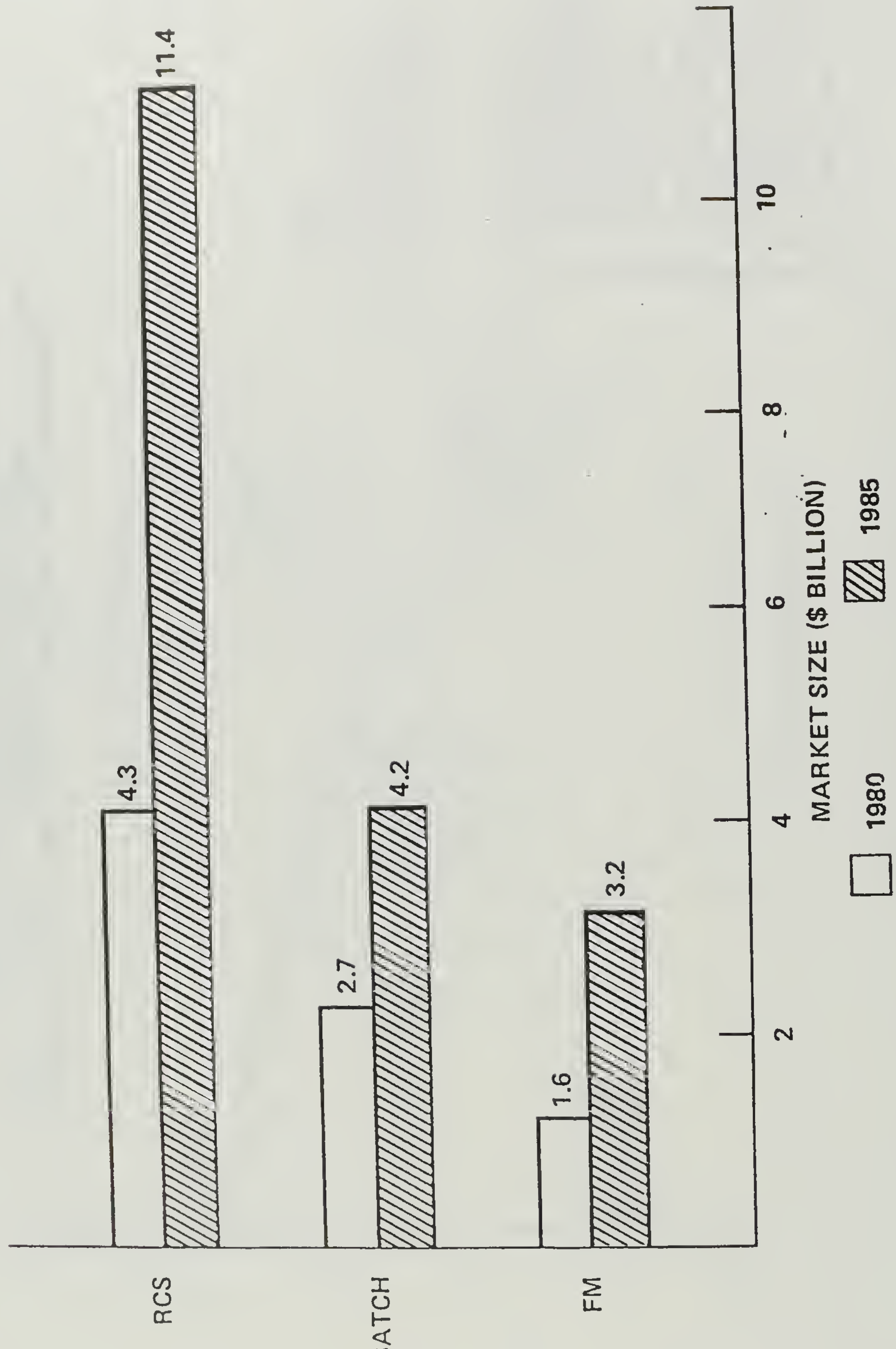
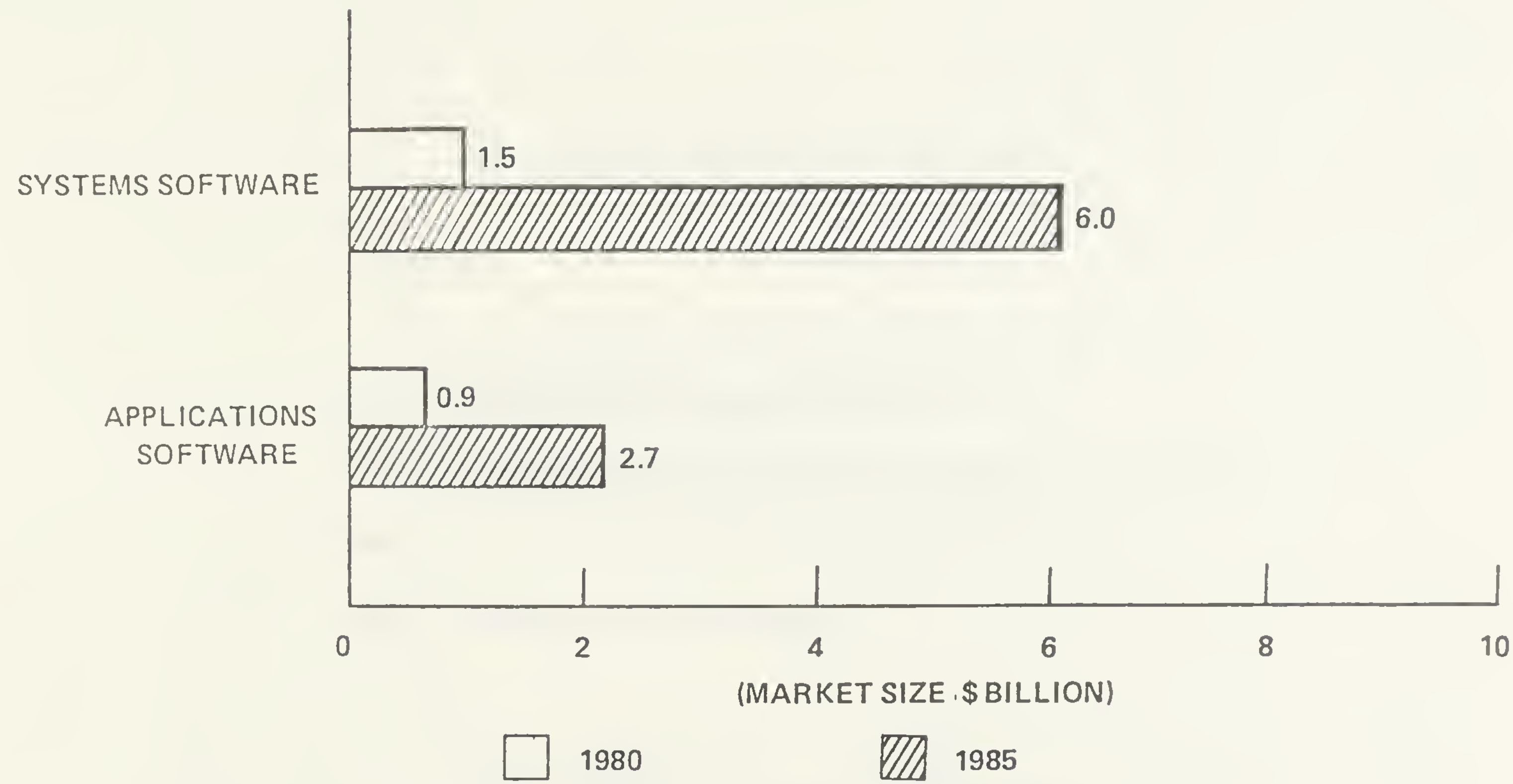
POTENTIAL COMPUTER SERVICES MARKET GROWTH, 1979-1985



PROCESSING SERVICES MARKETS



SOFTWARE PRODUCTS MARKETS



MILESTONES OF THE EIGHTIES

U.S.

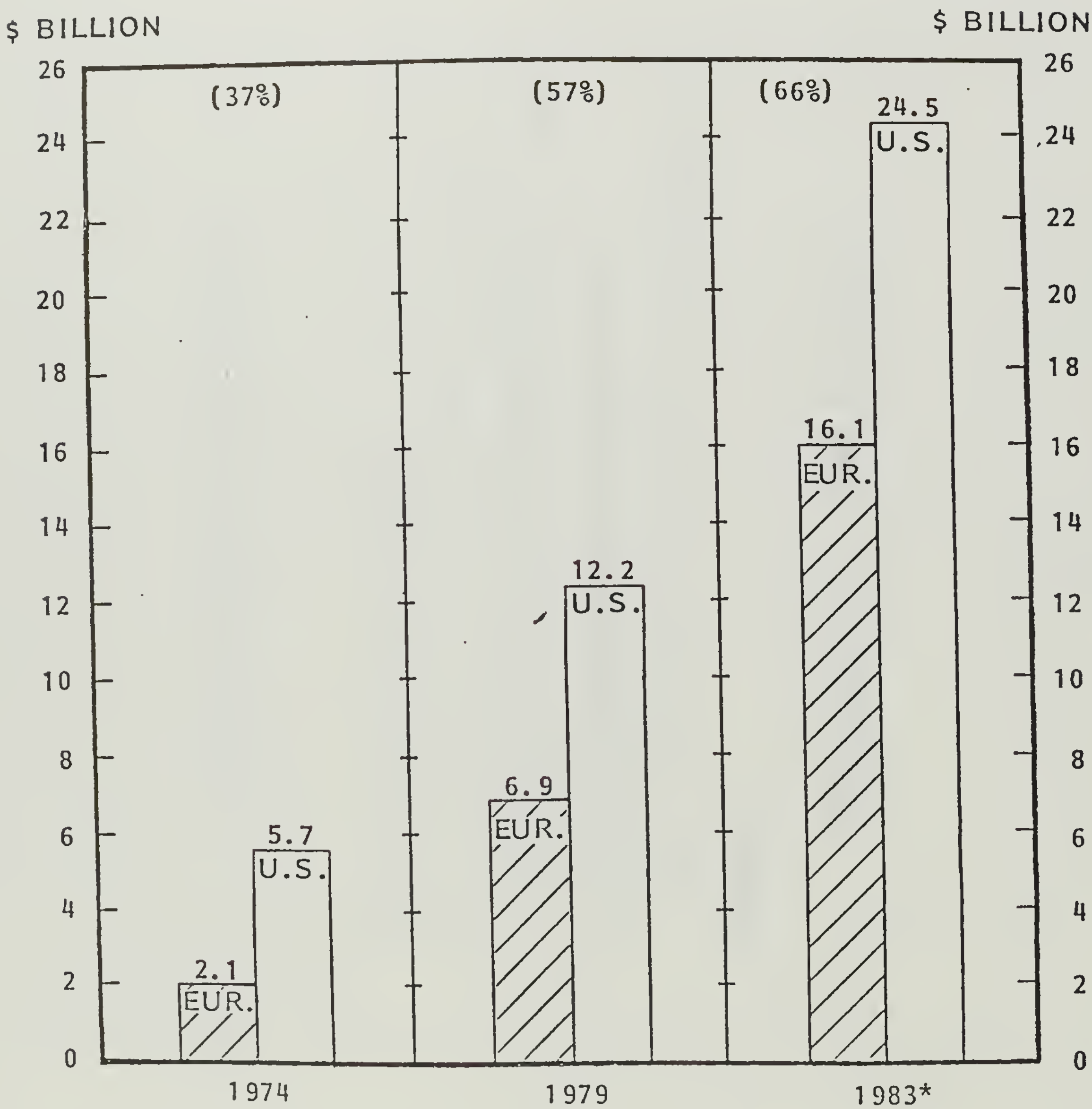
1985	SCS SATURATION REACHED
1986	SERVICES COS. NATURAL OUTLET FOR SCS, VSCS
1987	INTEGRATED NETWORKS START TO BE IMPLEMENTED
1989	HOME COMPUTING FLOURISHING

MILESTONES OF THE EIGHTIES

EUROPE

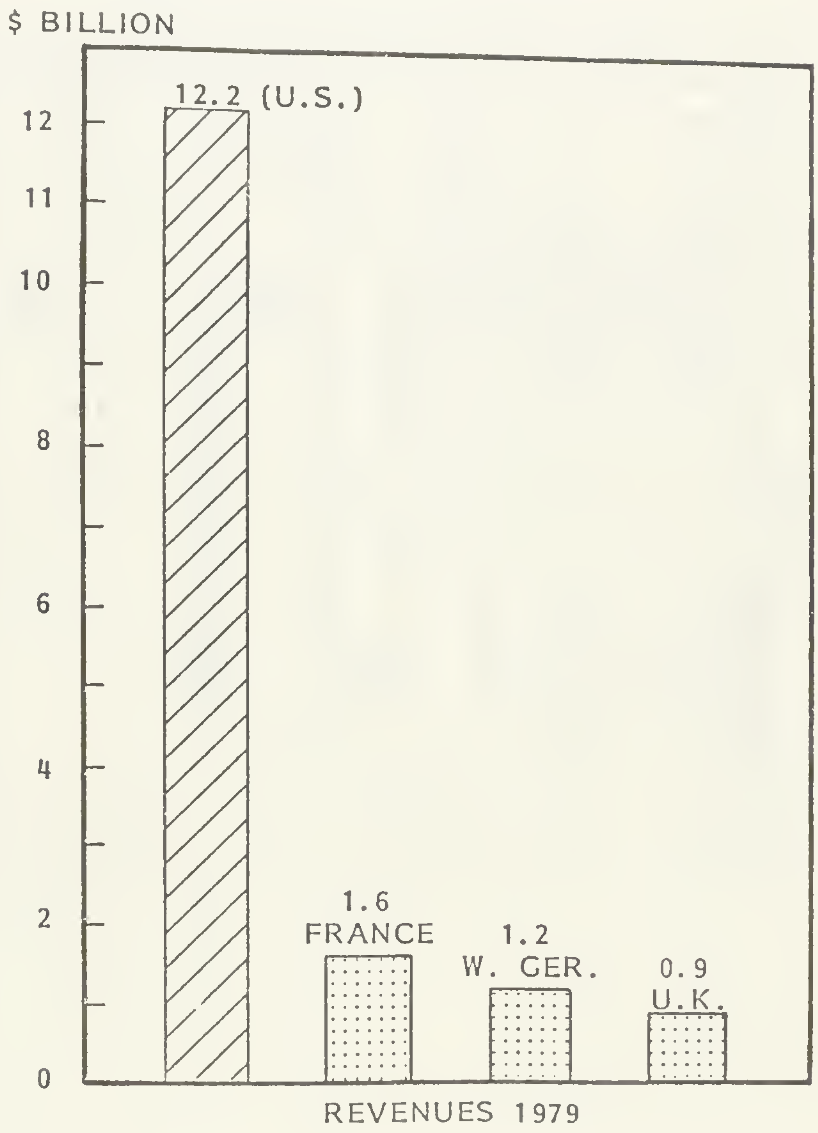
1984	SCS/TURNKEY SYSTEMS' MOST ACTIVE SECTOR
1986	VIDEOTEXT IN 50% OF FRENCH HOMES
1989	SCS MARKET SECTOR 67% SATURATED

COMPUTER SERVICES MARKETS EUROPE - U.S. COMPARISON

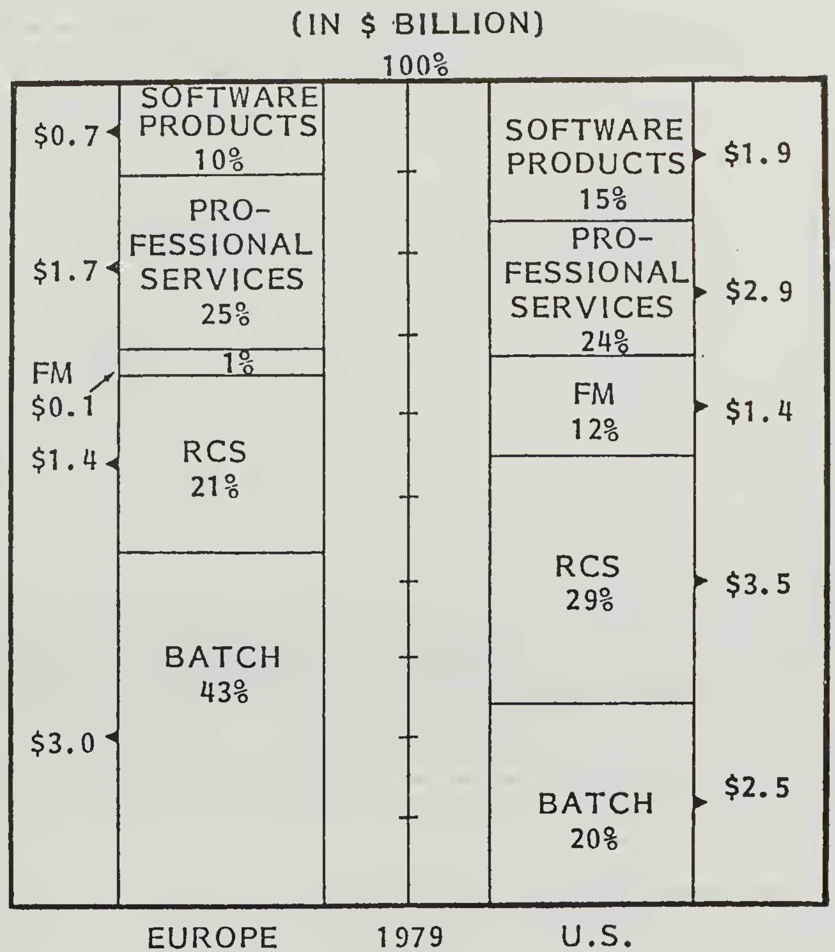


*FORECASTING COMPLICATIONS – PRICES
– SOFTWARE PRODUCTS (MANUFACTURERS)

HOME MARKET BASE



PRODUCT SECTORS



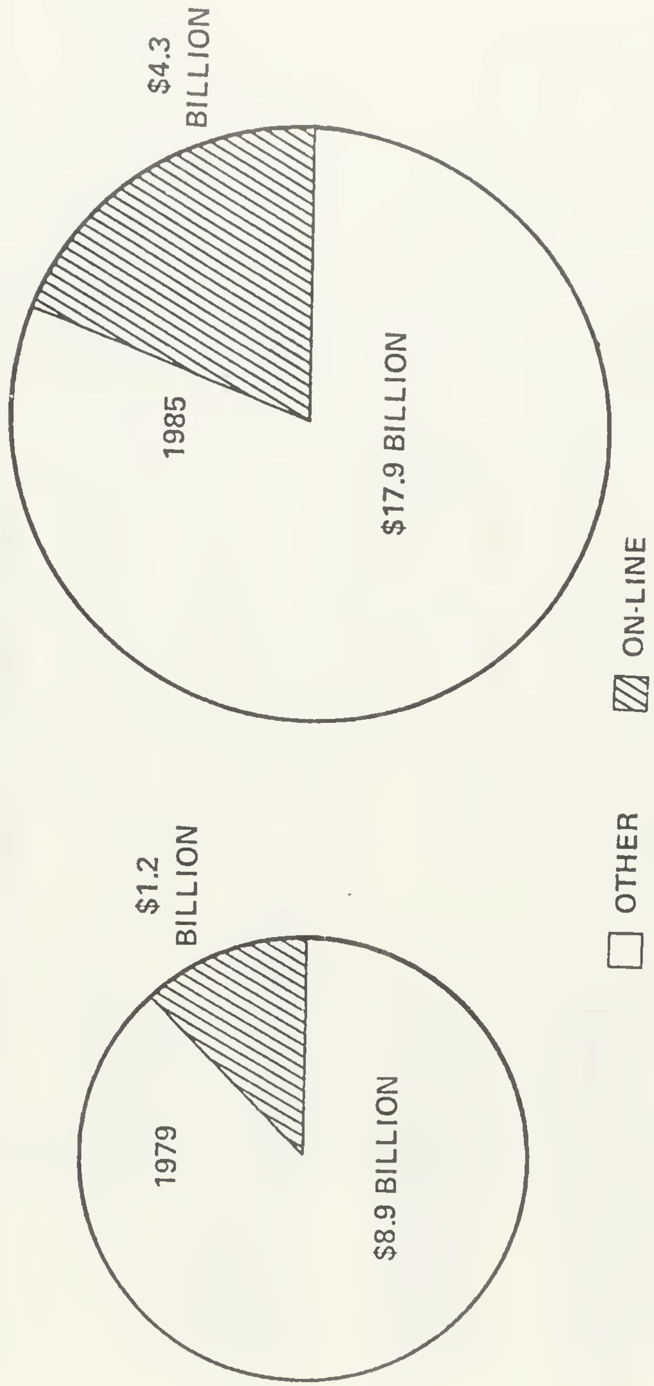
DATA BASE SERVICES

- VORACIOUS DEMAND FOR INFORMATION
- DATA + TOOLS = INFORMATION
- DATA BASES ARE KEYS TO MARKETS

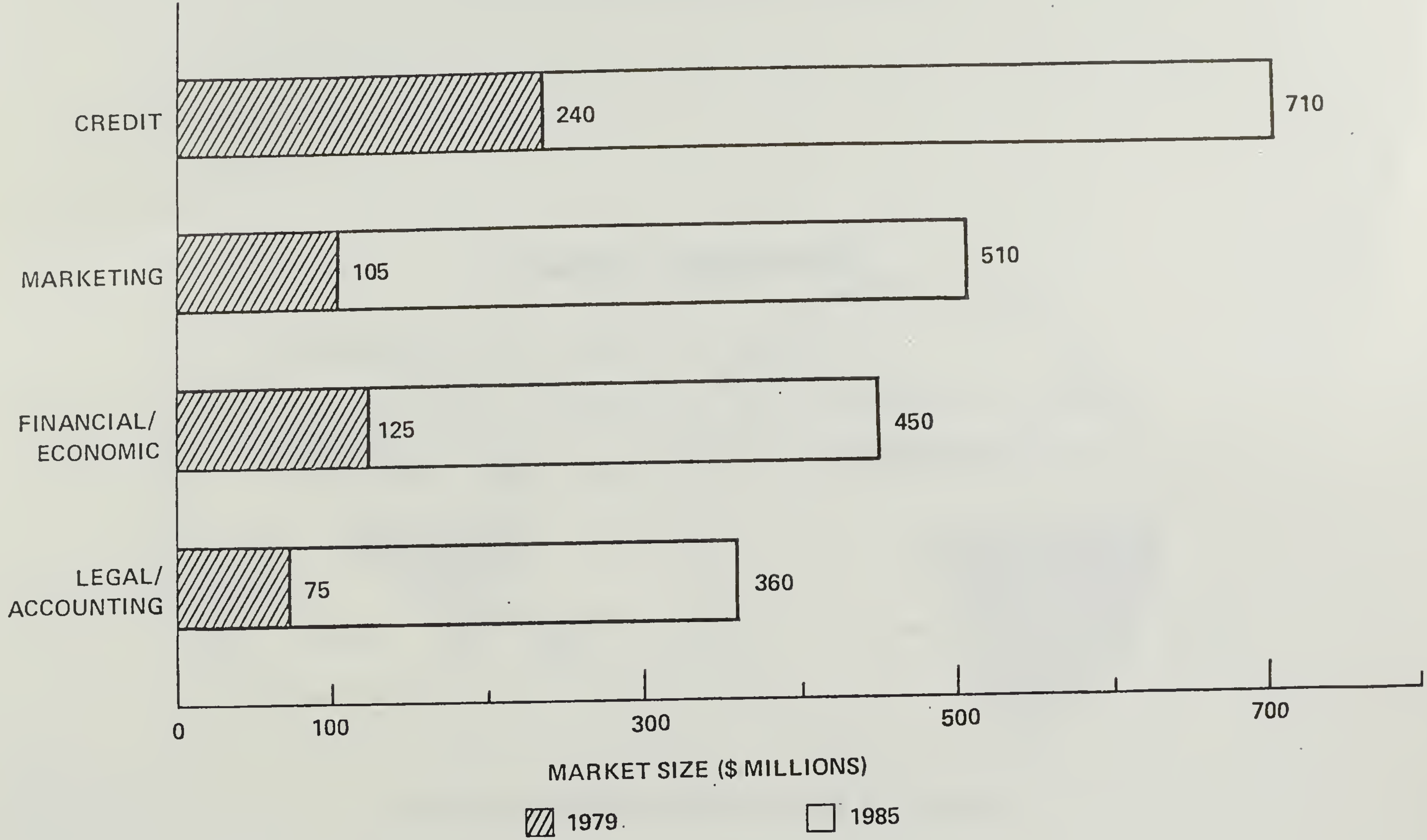
DATA BASE SERVICES

- OVER 400 DATA BASES AVAILABLE ON-LINE
- OVER 140 VENDORS CREATE & MAINTAIN ON-LINE DATA BASES
- OVER 60 RCS VENDORS OFFER ON-LINE DATA BASE SERVICES

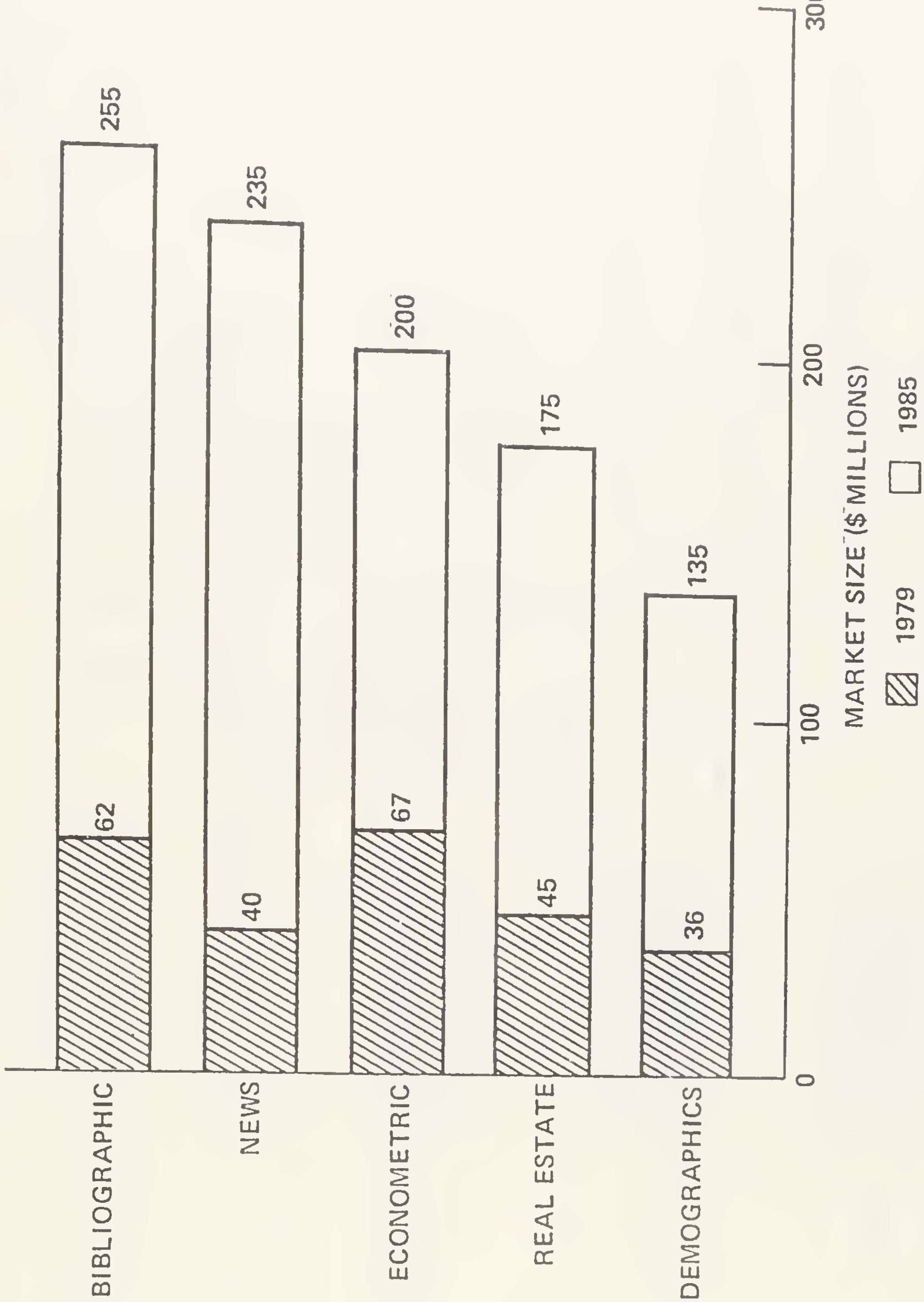
DATA BASE SERVICES MARKET, 1979-1985



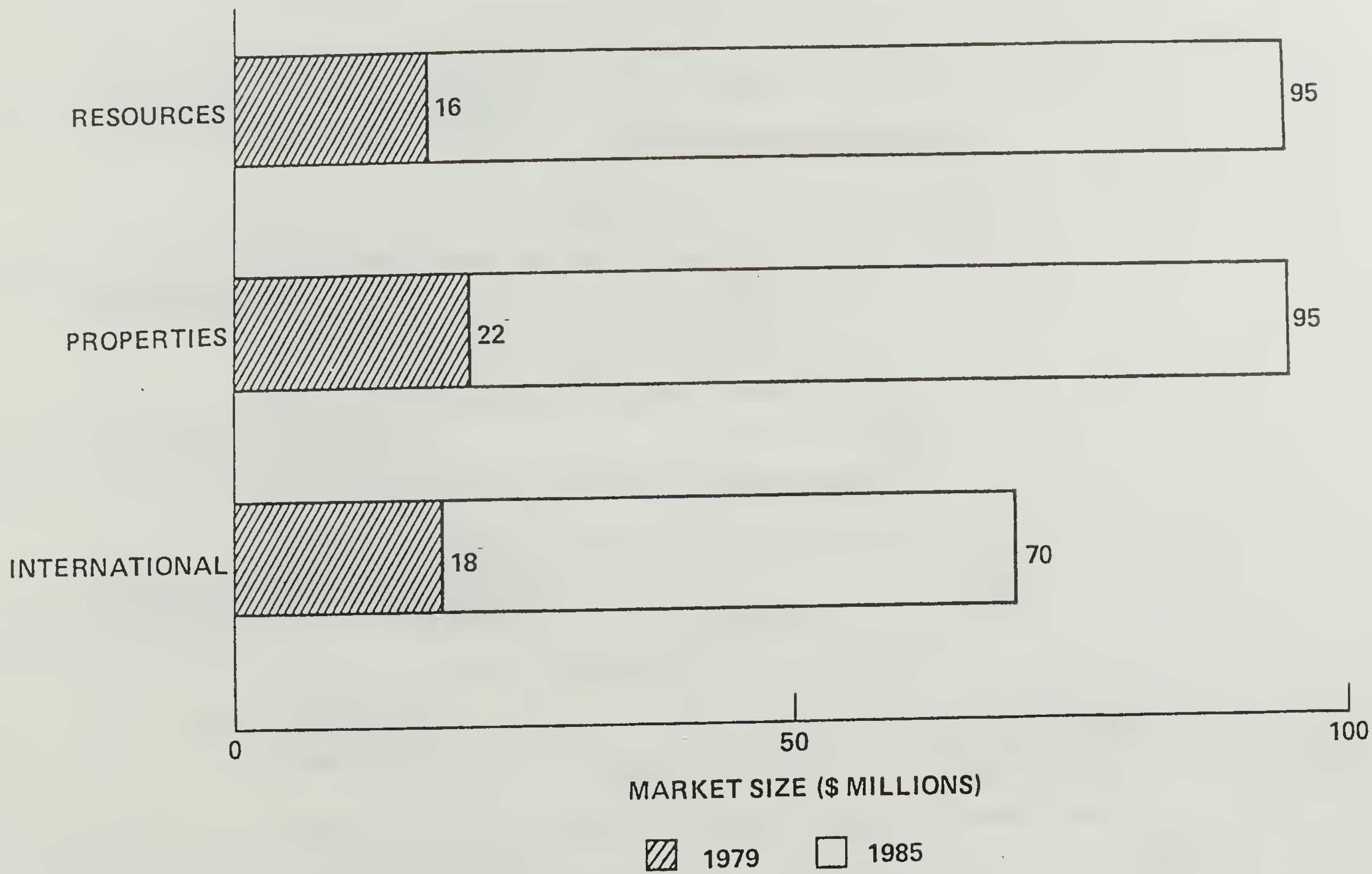
DATA BASE SERVICES MARKET



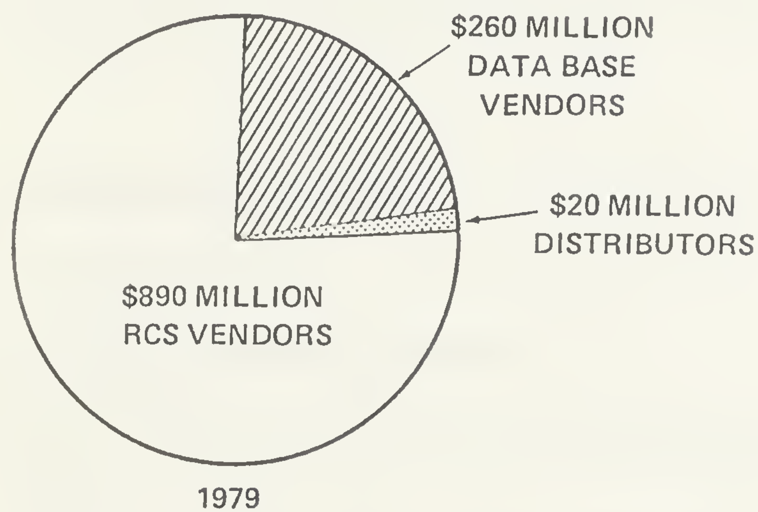
DATA BASE SERVICES MARKET



DATA BASE SERVICES MARKET



MARKET SHARE BY VENDOR TYPE



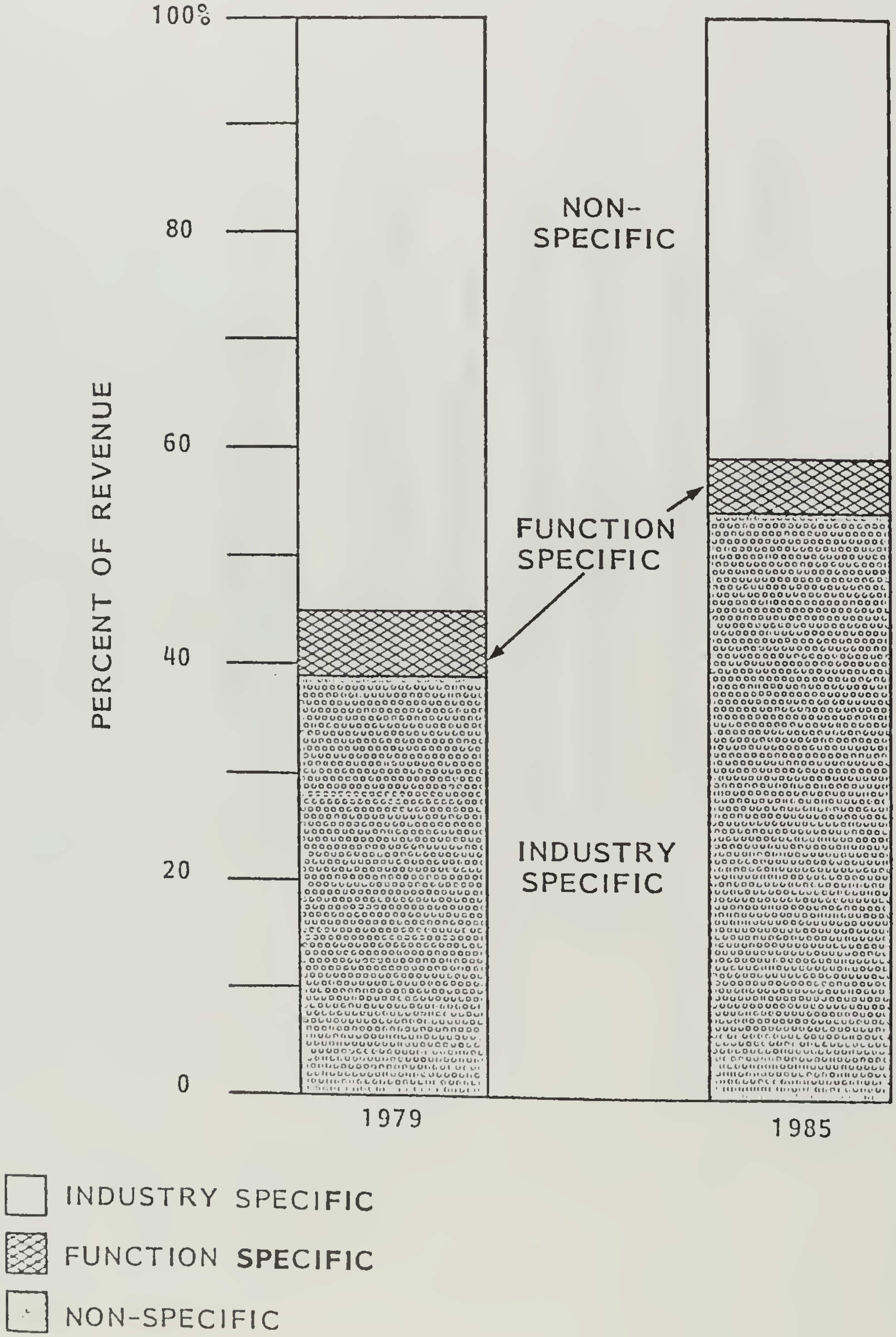
DATA BASE SERVICES
IMPACT OF ADVANCED TECHNOLOGIES

- WIDEBAND INFORMATION DISTRIBUTION CHANNELS
- IMAGING DATA ENTRY SYSTEMS
- CHEAP TERMINALS
- MASS STORAGE DEVICES

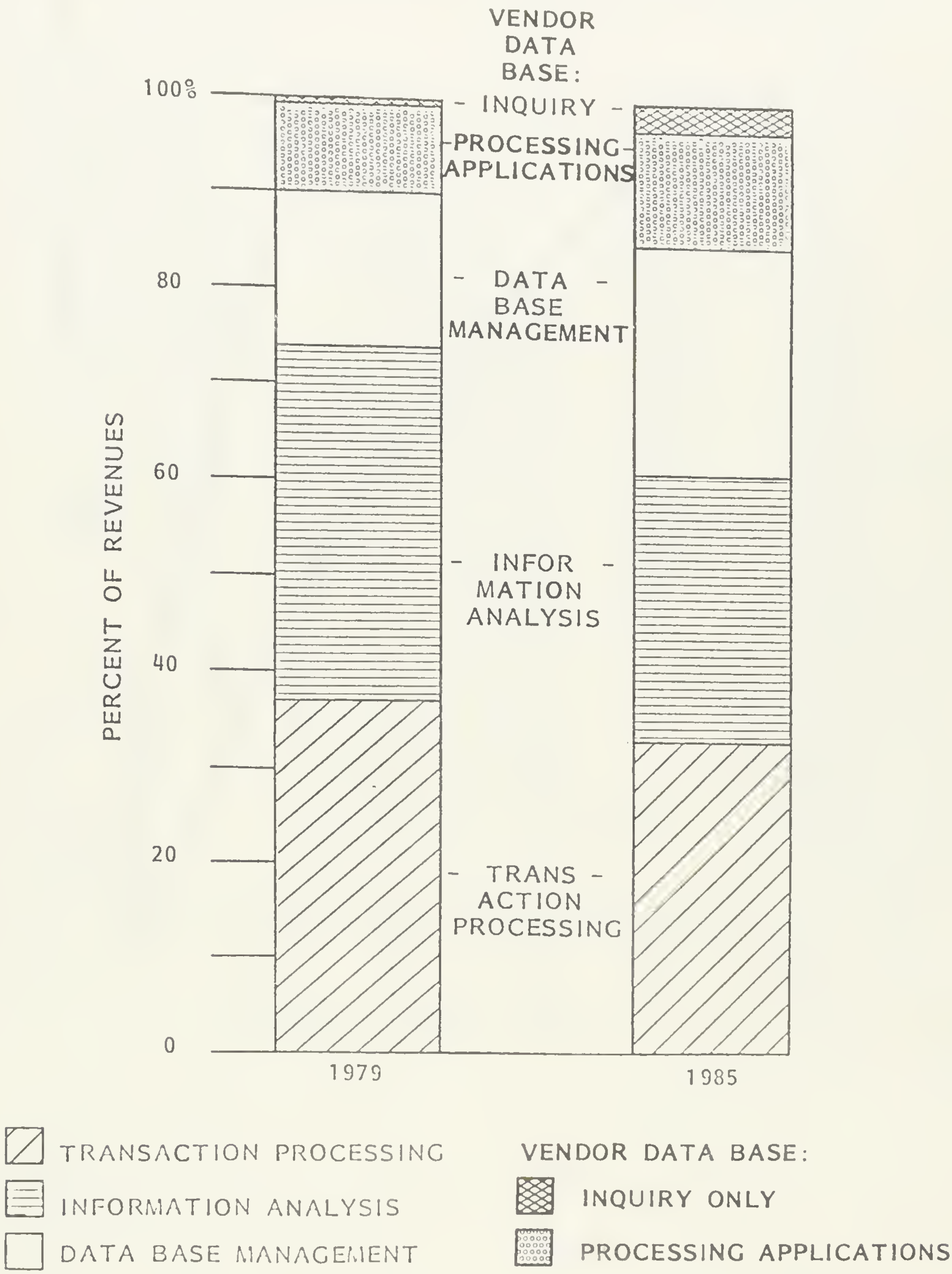
DATA BASE SERVICES MARKET FORCES

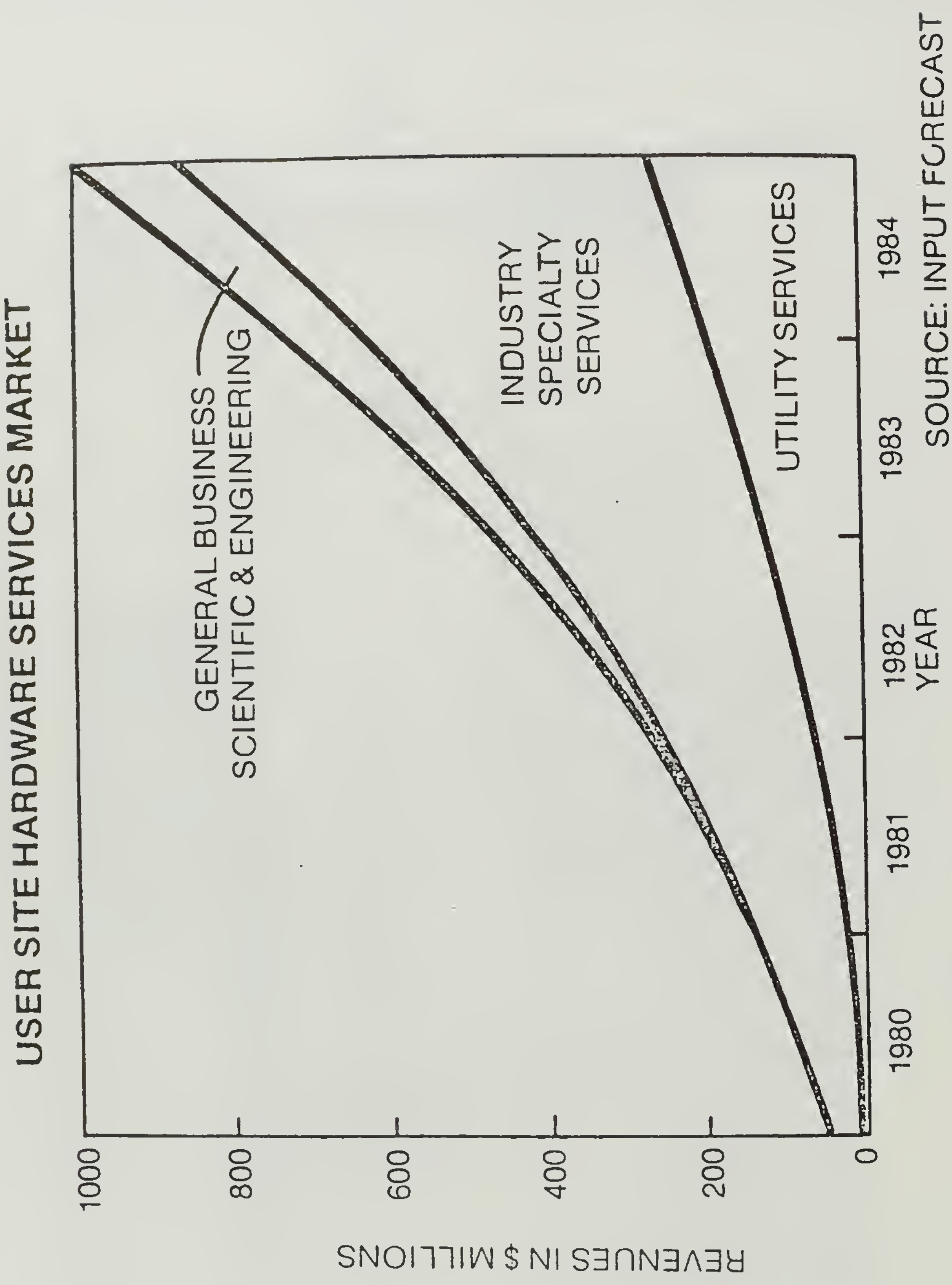
- VERTICAL INTEGRATION BY PUBLISHERS
- VERTICAL INTEGRATION BY DISTRIBUTION VENDORS
- MARKET ENTRY BY COMMUNICATIONS FIRMS
- MARKET ENTRY BY FOREIGN VENDORS
- EMERGENCE OF CONSUMER-ORIENTED NETWORKS

PROCESSING **TRENDS**: RCS VENDOR REVENUE DISTRIBUTION



PROCESSING TRENDS: RCS VENDOR REVENUE DISTRIBUTION




USER SITE HARDWARE SERVICES MARKET
REVENUES IN $ MILLIONS
1000
800
600
400
200
0
1980
1981
1982
YEAR
1983
1984
GENERAL BUSINESS
SCIENTIFIC & ENGINEERING
INDUSTRY
SPECIALTY
SERVICES
UTILITY SERVICES
SOURCE: INPUT FORECAST

ADVANTAGES OF USHS STRATEGY

- PARTICIPATE IN THE DDP MARKET
- PARTICIPATE IN DECENTRALIZATION
- CAPTURE A PORTION OF IN-HOUSE TIMESHARING
- INTEGRATED NETWORK AND SOFTWARE PRODUCT
- PROVIDE ENTRY TO THE SMALL USER AREA

USHS

- RCS CONVERSION TAKING PLACE

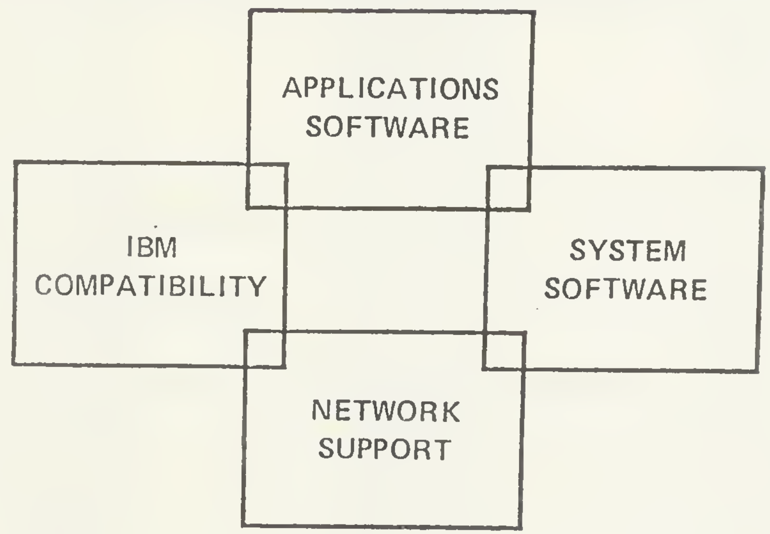
  - COST SAVINGS TO USER 40%
  - USUALLY FROM USHS VENDOR

- SALES CYCLE: 6 MONTHS AFTER EDP MANAGER INVOLVED

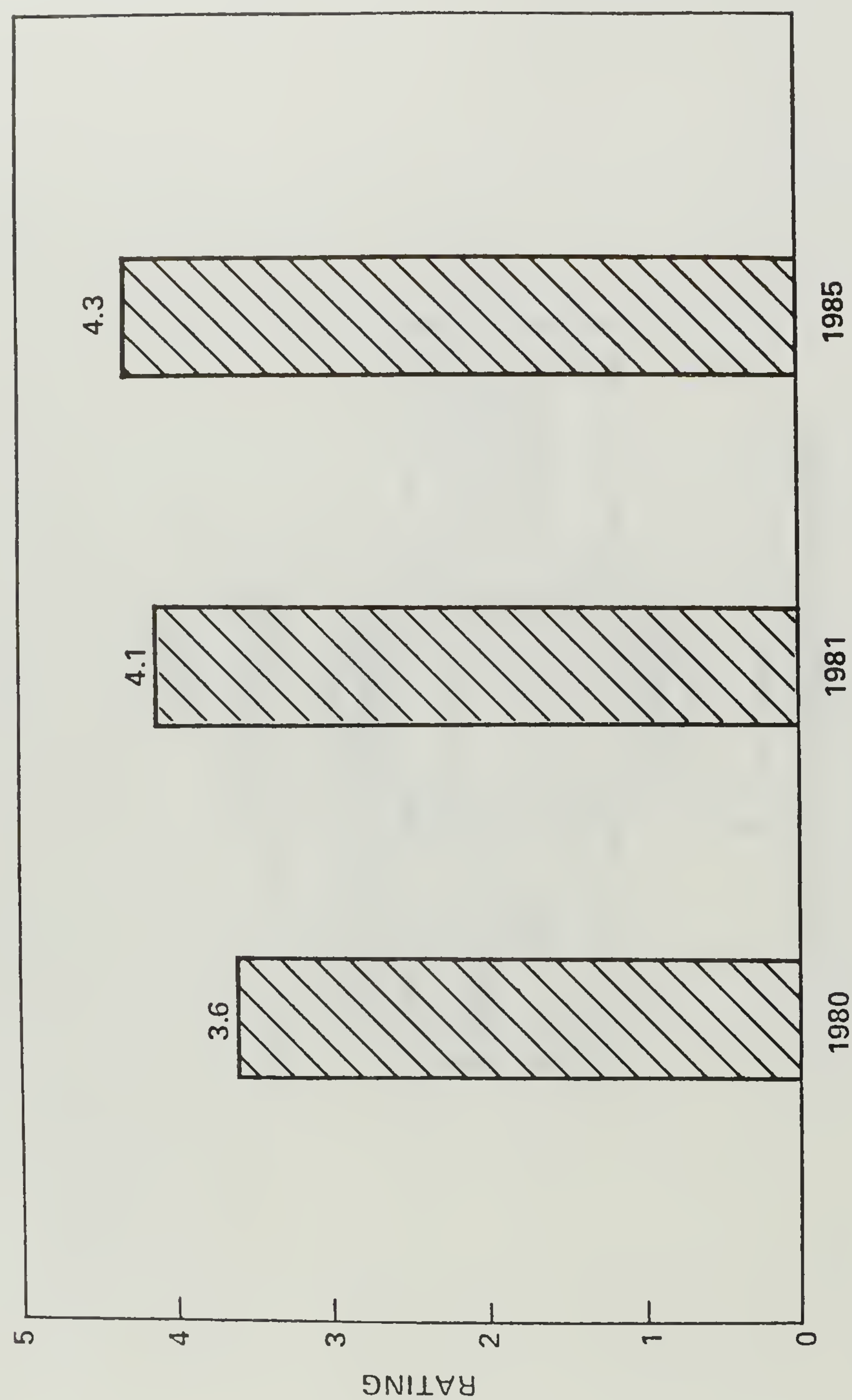
- EDP MANAGERS/END USERS WORKING TOGETHER

- MAJORITY OF MAJOR VENDORS NOW HAVE USHS

USHS ELEMENTS REQUIRED



IMPORTANCE OF A NETWORK IN USHS



IN

APPLICATIONS SOFTWARE PACKAGES DEMAND

- DEVELOPMENT COSTS BEYOND BUDGETS
- NEW COMPANIES BUYING NEW FEATURES
- EXISTING USERS BUY NEW FEATURES
- BUYING MULTIPLE SYSTEMS FROM SINGLE VENDOR
- BECOMING MORE SOPHISTICATED SHOPPERS

APPLICATIONS SOFTWARE PACKAGES
END USERS

- LOOK TO EDP DEPARTMENT FOR CENTRAL SYSTEMS
- THIRD PARTIES OR THEMSELVES FOR SMALL SYSTEMS

APPLICATIONS SOFTWARE PACKAGES
VENDORS

- VENDORS FORCED TO INTEGRATE APPLICATIONS
- CONSOLIDATION OF VENDORS EXPECTED
  - DEVELOPMENT COSTS
  - MARKETING LEVERAGE
- NO NEW DEVELOPMENT TECHNIQUES EXPECTED IN NEXT 3 YEARS

APPLICATIONS SOFTWARE PACKAGES
ISSUES

- PRODUCTS WELL SUITED TO NEARLY ALL USERS

  — VENDORS

- WANT AND EXPECT MORE CUSTOMIZING

  — USERS

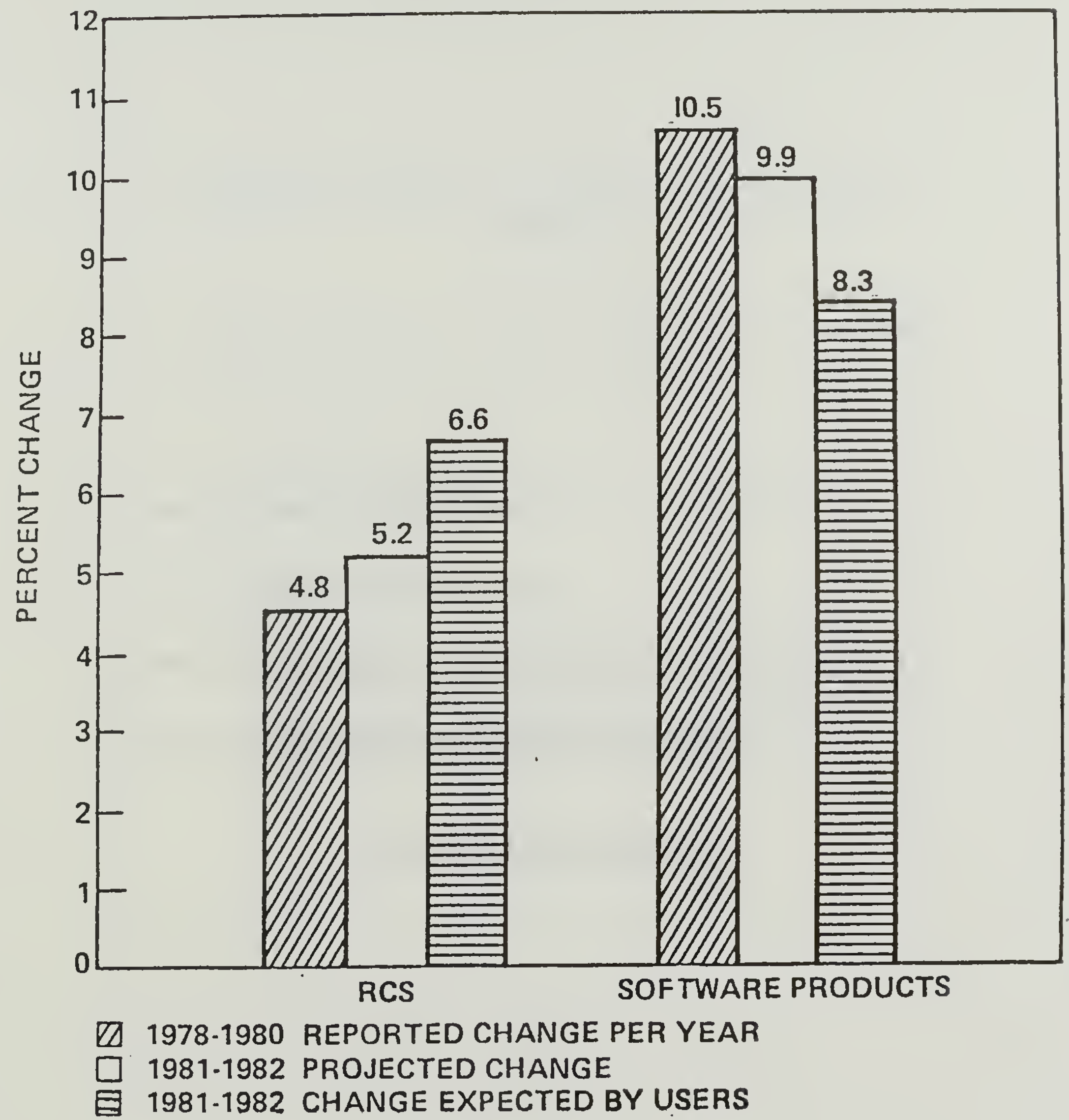
- INSTALLATION CYCLE UNSATISFACTORY

  — USERS AREN'T PREPARED — VENDORS
  — EXPECTATIONS AREN'T MET — USERS

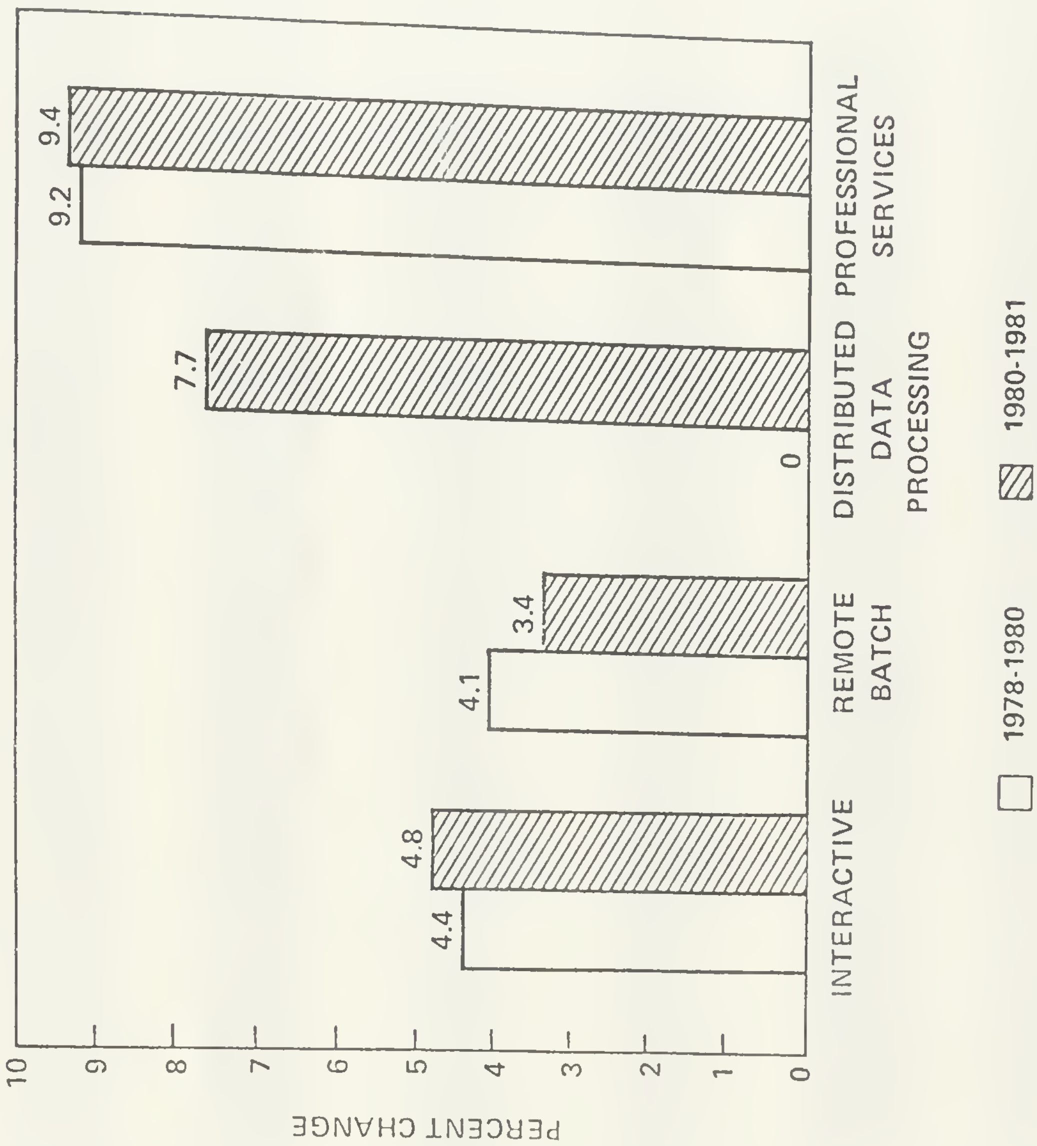
PRICING METHODS

- RCS PRIMARILY RESOURCE (88%)
- SOFTWARE PRODUCTS PRIMARILY LUMP SUM
- TREND TO SIMPLICITY
- LESS DISCOUNTING

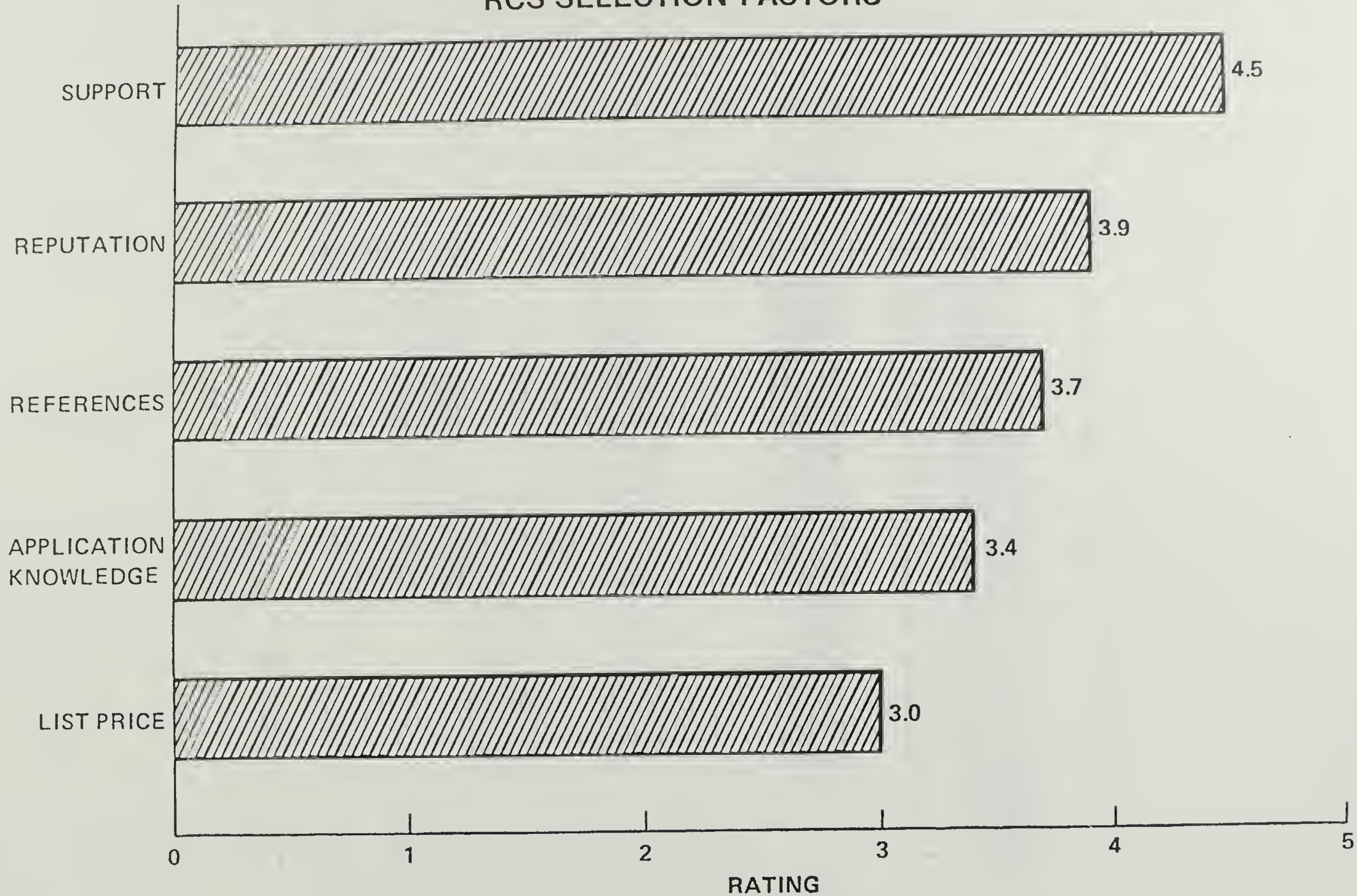
PRICE CHANGES



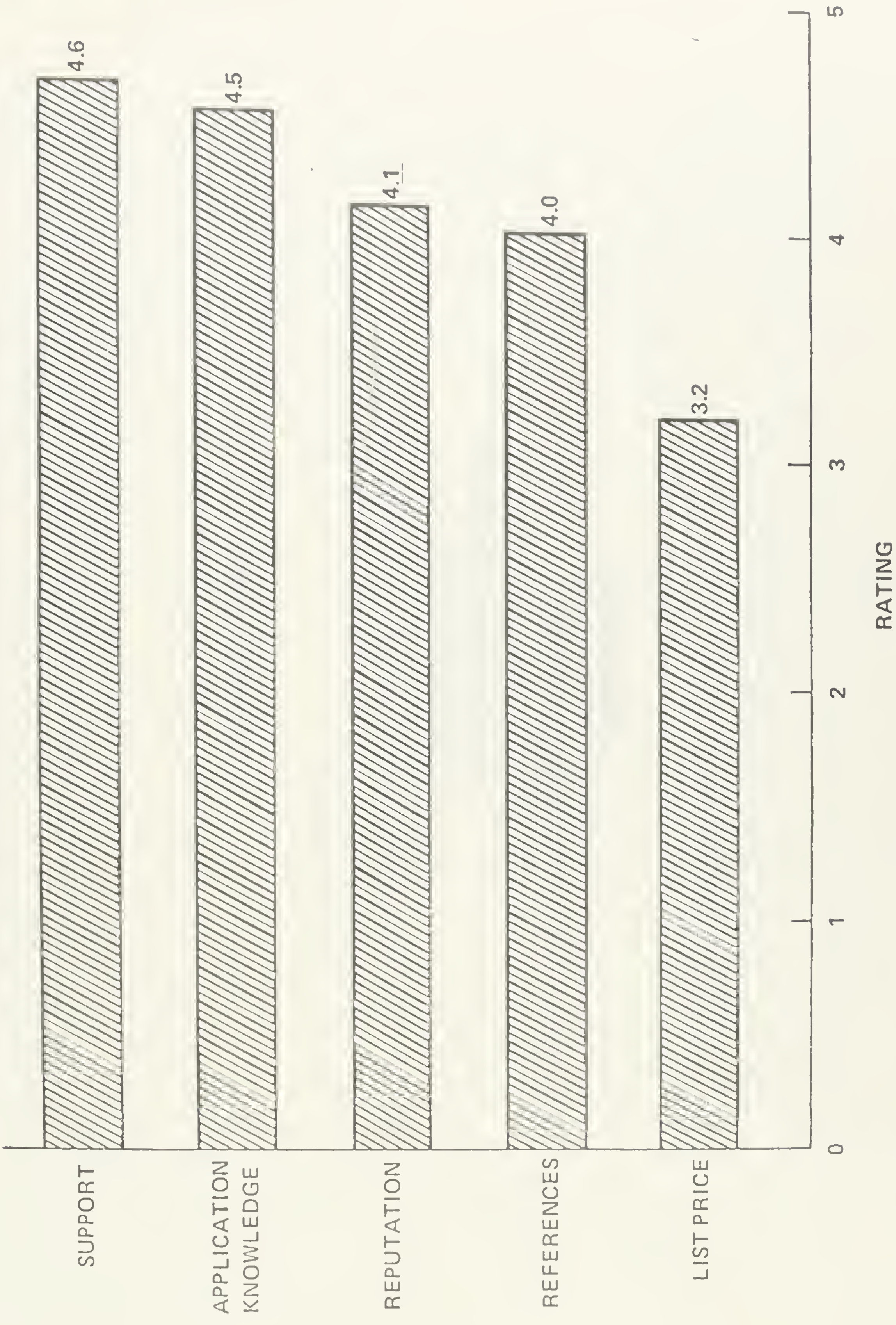
RCS PRICING CHANGES



RCS SELECTION FACTORS



SOFTWARE PRODUCTS SELECTION FACTORS



DISCOUNTING

- BUYERS
  - DON'T UNDERSTAND POLICIES
  - NOT KEY TO CLOSING

DISCOUNTING

- RCS VENDORS

  - PATTERN DISCOUNTS TO EVEN WORKLOAD
  - TERM CONTRACT DISCOUNTS MOST COMMON
  - UTILITY DISCOUNTED MOST HEAVILY

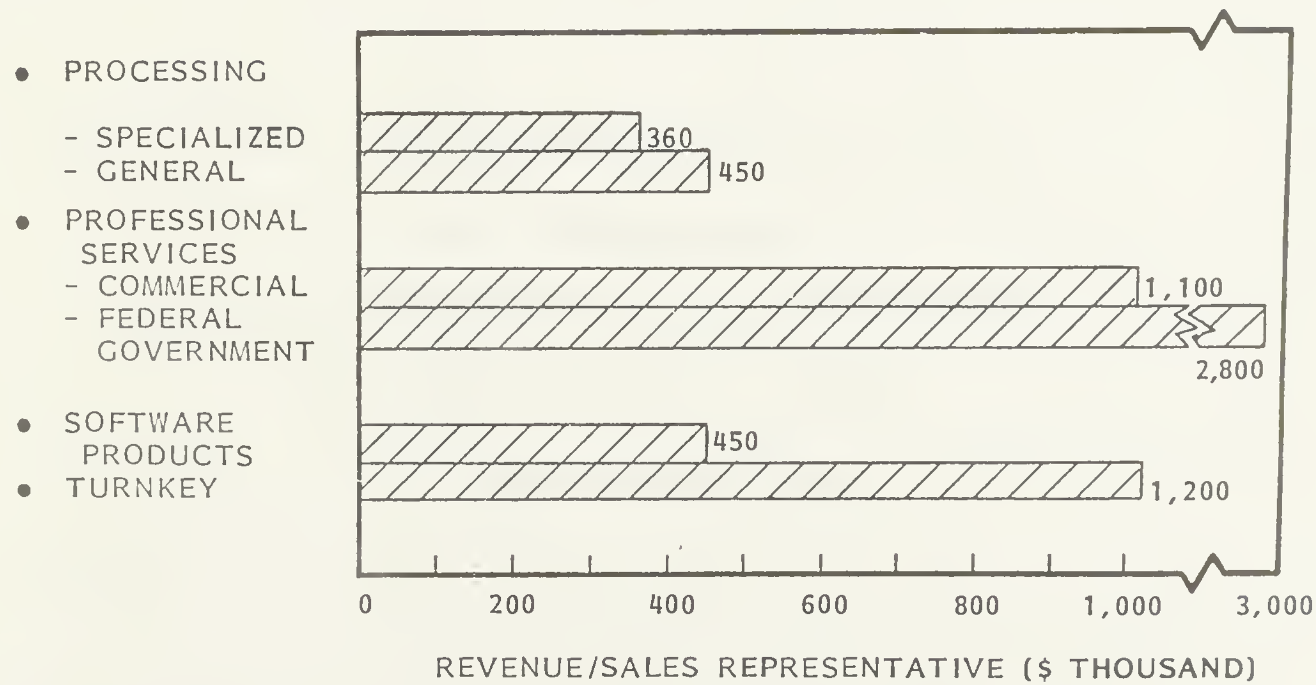
- SOFTWARE PRODUCT VENDORS DISCOUNT FOR:

  - MULTIPLE PROCESSORS
  - MULTIPLE INSTALLATIONS

SALES PRODUCTIVITY
1979 REVENUE PER EMPLOYEE

- PROCESSING SERVICES
  - $43K/EMPLOYEE (12% IMP.)
- SOFTWARE PRODUCTS
  - $54K/EMPLOYEE (5% IMP.)
- PROFESSIONAL SERVICES
  - $36K/EMPLOYEE (13% IMP.)

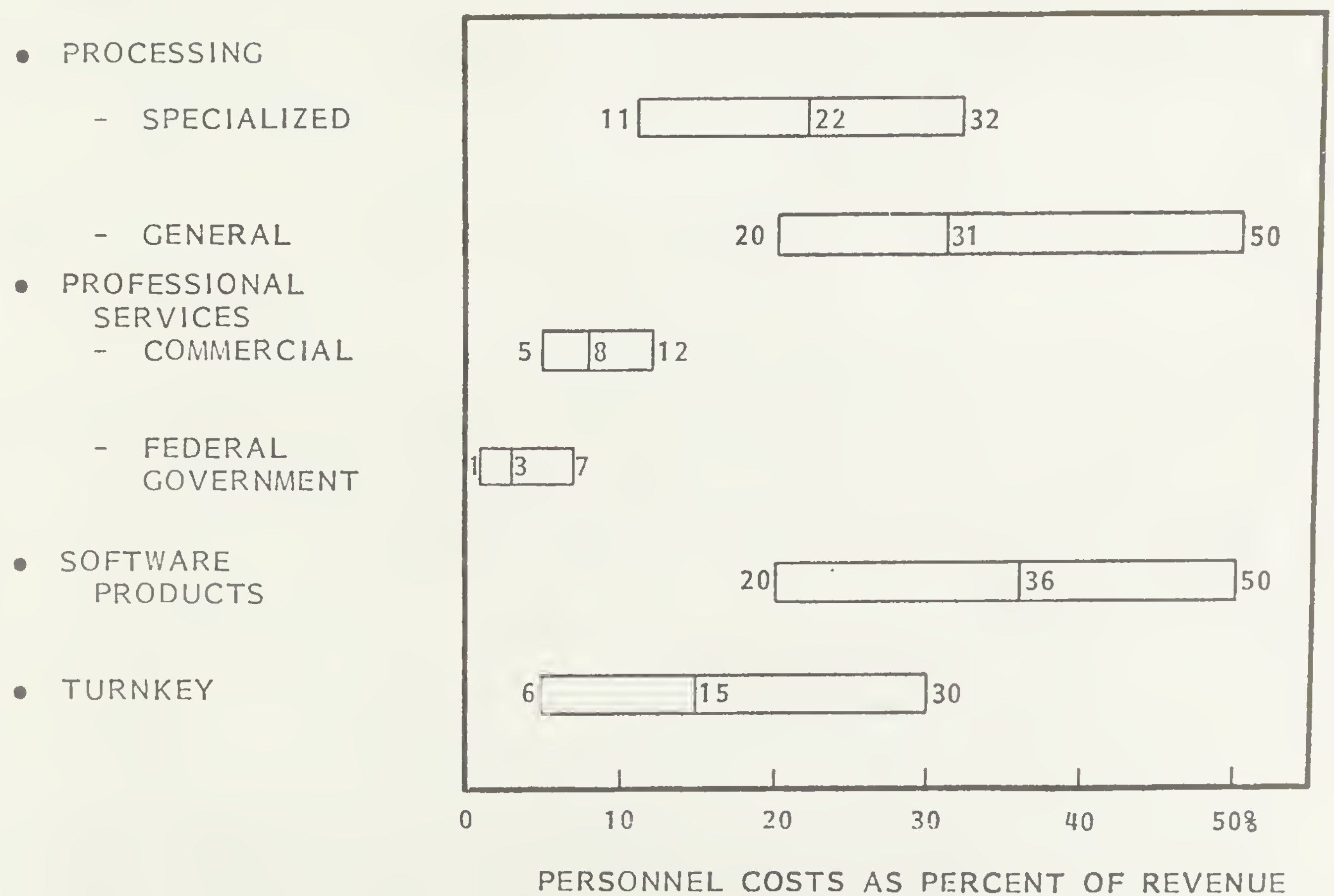
SALES PRODUCTIVITY 1979 REVENUE/SALES REPRESENTATIVES



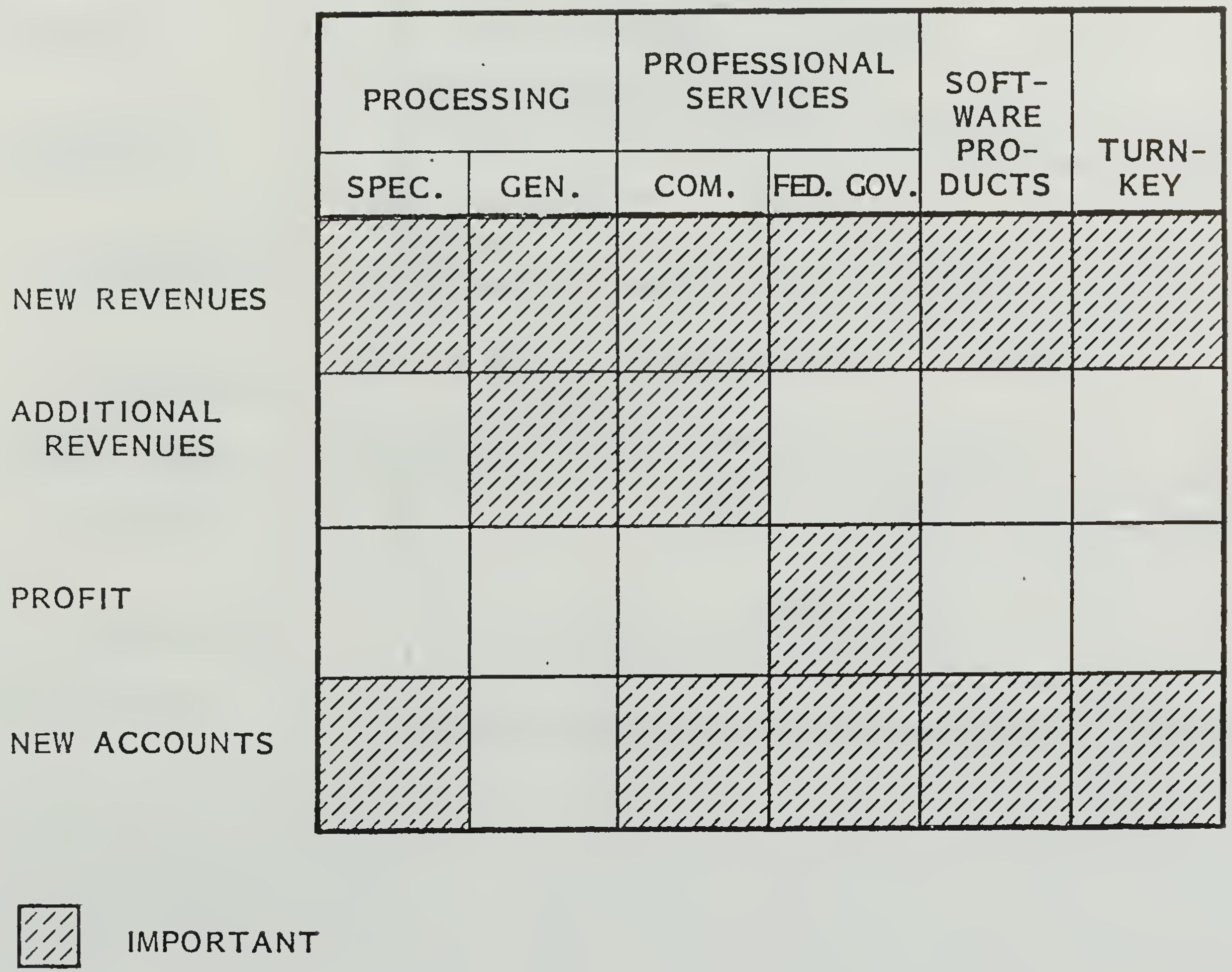
SALES PRODUCTIVITY

- TURNOVER REDUCED, < 20% 1980
- NO SIGNIFICANT CHANGES IN SALES PLANS
- IMPROVE SELECTION PROCESS — No. 1 STRATEGY
- COMMISSIONS ABOUT A THIRD OF SALES REP. INCOME

SALES/PRODUCTIVITY
SALES/MARKETING COSTS



SALES PRODUCTIVITY: IMPORTANT SALES OBJECTIVES



V COMPETITION

COMPANY	1979 REVENUES	AAGR
EXXON	$85B	15%
AT&T	45	12
IBM	23	12
GE	23	12
ITT	17	11
GTE	10	14
XEROX	7	14
TI	3	24

IBM STRATEGIES/TACTICS

- NEW SYSTEMS IMMINENT
- TELECOMMUNICATIONS EMPHASIS
  - TIE TO OFFICE AUTOMATION
  - LOCAL NETWORK SYSTEMS

IBM STRATEGIES/TACTICS

- TURNKEY SYSTEMS POSSIBILITIES
- SOFTWARE AND SERVICES
  - INCREASING REVENUE SOURCE
  - APPLICATION DEVELOPMENT MACHINES
  - ENHANCED HARDWARE SERVICES

IBM NEW, LARGE-SCALE SYSTEM

- ANNOUNCEMENT IN NEXT SIX MONTHS
- MULTIPLE-PROCESSOR SYSTEM
- EXTENDABLE IN PLACE
- "VIRTUAL" SYSTEM USING H/F/S
- NEW SOFTWARE — END OF THE BUNDLED ERA

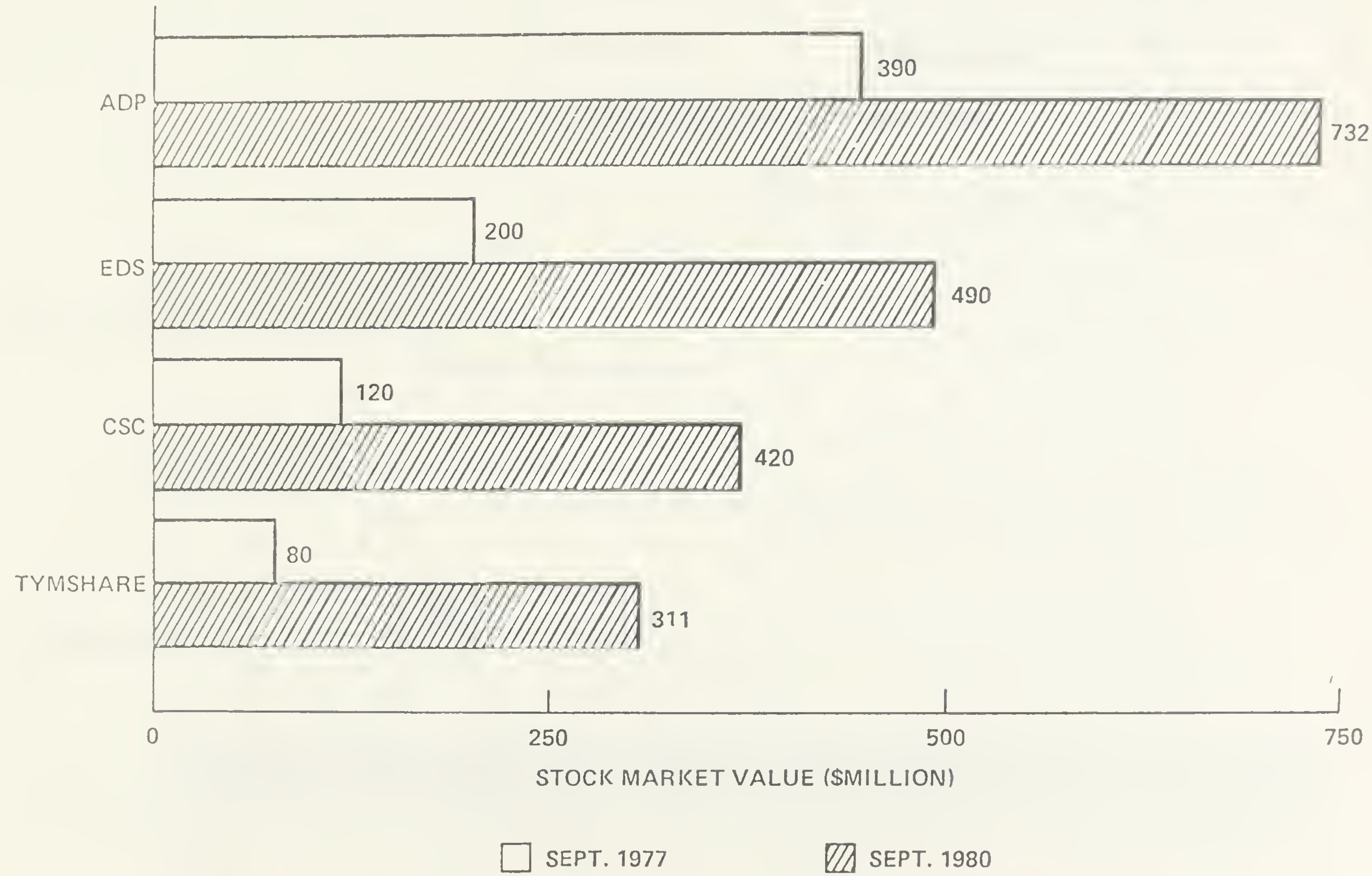
'USER' COMPETITIVE ACTIONS

- 'TIME-SHARING' CONTINUES IN-HOUSE GROWTH
- MANUFACTURERS WILL PROVIDE SERVICES TO DISTRIBUTORS AND SUB-CONTRACTORS
- BANKS PROVIDING DDP SERVICES TO CORRESPONDENTS

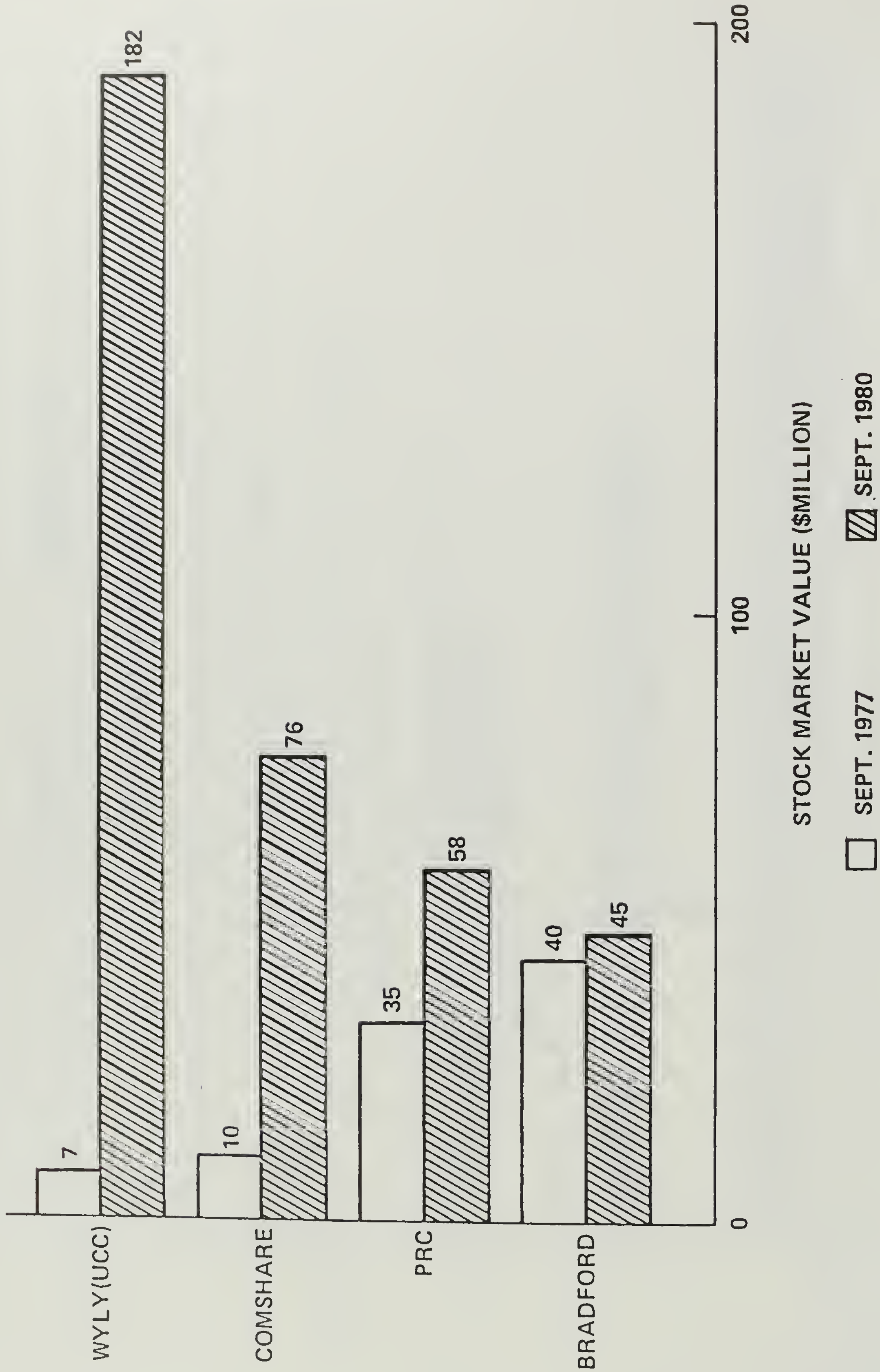
'USER' COMPETITIVE ACTIONS

- INSURANCE COMPANIES ESTABLISHING JOINT VENTURES FOR AGENT/BROKER SERVICES
- AIRLINES TIE-IN SERVICES TO OTHER AIRLINES
- TREND WILL ACCELERATE

MARKET VALUE



MARKET VALUE



PROFITABILITY
PROFIT BEFORE TAXES

- PROCESSING SERVICES

  - PUBLIC COMPANIES – 13%
  - OVERALL – 10%
  - COMPANIES OVER $10 MILLION MOST PROFITABLE

PROFITABILITY

- SOFTWARE PRODUCTS

  - PUBLIC COMPANIES – 10%
  - OVERALL – 11%

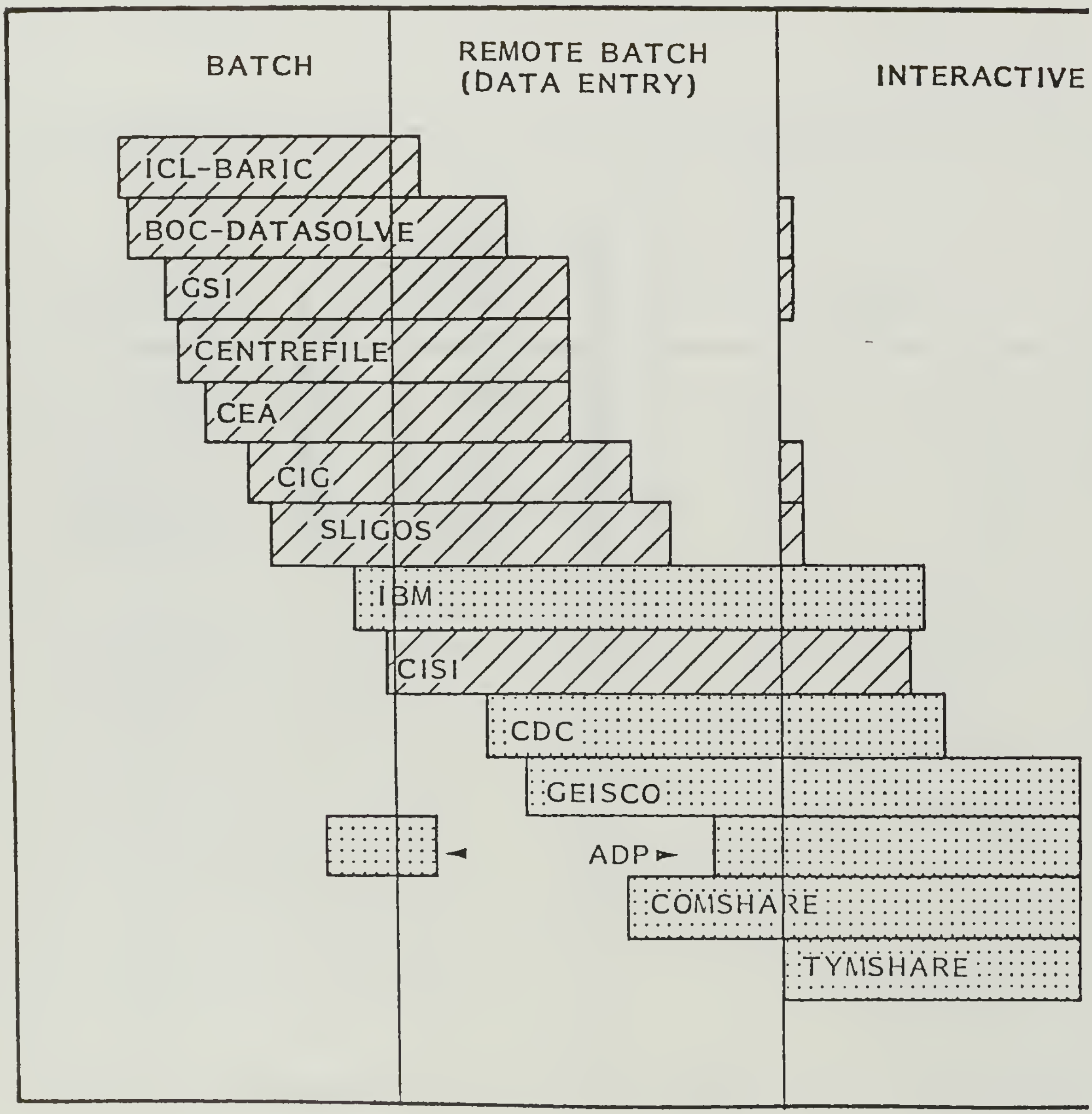
- PROFESSIONAL SERVICES

  - OVERALL AND PUBLIC – 7%

MAJOR EUROPEAN PROCESSING SERVICES VENDORS

NAME	SERVICES REVENUES ($ MILLION)	NATIONALITY
IBM	$350	U.S.
GSI	180	FRANCE
CISI	160	FRANCE
GEISCO	100	U.S.
DATEMA	50 (EST.)	SWEDEN
UCC/AC-SERVICE	46	U.S.
CONTROL DATA	74	U.S.
ADP	24	U.S.
COMSHARE	23	U.S.
TYMSHARE	18	U.S.

MODE-OF-ACCESS ORIENTATION



1980 ACQUISITIONS

- SCHLUMBERGER/MDSI ~ $190M
- BURROUGHS/SDC ~ $100M
- AMERICAN EXPRESS/FIRST DATA RESOURCES ~ $50M
- H&R BLOCK/COMPUSER V ~ $23M

1980 ACQUISITIONS

- WYLY – (UNIVERSITY COMPUTING COMP.)/DIGITAL SYSTEMS OF FLORIDA ~ $16M
- NIXDORF COMPUTER CORP/THE COMPUTER SOFTWARE CO.
- TYMSHARE/TELECHECK & MICROBAND CORP. OF AMERICA
- ANACOMP/KRANZLEY
- WALLACE BUSINESS FORMS/BUSINESS DATA, INC.

INPUT 150

- LARGEST U.S. COMPUTER SERVICES COMPANIES:

  - U.S. AVAILABLE REVENUE AT LEAST $10M
  - PROCESSING SERVICES, SOFTWARE PRODUCTS
  - PROFESSIONAL SERVICES, TURNKEY SYSTEMS

INPUT 150

- ACCOUNT FOR $6.6B IN COMPUTER SERVICES AND TURNKEY SYSTEMS REVENUES IN FY 1979
  - $3.5B IN PROCESSING SERVICES
  - $1.0B IN SOFTWARE PRODUCTS
  - $1.6B IN PROFESSIONAL SERVICES
  - $0.5B IN TURNKEY SYSTEMS

TOTAL 1979 AVAILABLE U.S. COMPUTER SERVICES REVENUE

OVER $200M

IBM
CDC
CSC
ADP
EDS

$100-200M

GEISCO
TYMSHARE
SDC
McAUTO
BRADFORD
UIS
PRC
NCR

1979 U.S. AVAILABLE PROCESSING SERVICES REVENUE

OVER $100M

CDC
ADP
GEISCO
TYMSHARE
EDS
McAUTO
CSC

$50-100M

UIS
NCR
BRADFORD
SMS
BANK OF AMERICA
MEAD DATA
BCS
TRW
NATIONAL CSS
FIRST DATA RESOURCES
NATIONAL DATA CORPORATION

1979 U.S. AVAILABLE SOFTWARE PRODUCT REVENUE

OVER $25M

IBM
BURROUGHS
HONEYWELL
DEC
NCR
MSA
INFORMATICS

$10-25M

HP
UNIVAC
UCC
CINCOM
INFORMATION SCIENCE
DG
TI
PANSOPHIC
FLORIDA SOFTWARE
ISA
ADR
SOFTWARE AG
SOFTWARE INTERNATIONAL
TANDY
COMPUTER ASSOCIATES

1979 U.S. AVAILABLE PROFESSIONAL SERVICES REVENUE

OVER $50M

CSC
SDC
IBM
MITRE
PRC
CDC

$25-50M

ARTHUR ANDERSEN
SYSTEMS CONSULTANTS
BRADFORD
EDS
SYSTEM AND COMPUTER TECHNOLOGY
INFORMATICS
AMERICAN MANAGEMENT SYSTEMS