

- 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)**

INPUT

INPUT
EXECUTIVE PLANNING SERVICES
Europe

- **Software and Service Planning Service (SSPS)**
- **Customer Service Program - Europe (CSP-E)**

INPUT

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**

INPUT

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**

INPUT

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**

INPUT

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**

INPUT

the 1990s, the number of people in the UK who are aged 65 and over has increased from 10.5 million to 13.5 million (15.5% of the population).

There is a growing awareness of the need to address the needs of older people, and the Government has set out a strategy for the 21st century in the White Paper on *Ageing Better: Our Future* (Department of Health 2000). The White Paper sets out a vision of a society in which older people are able to live well, and to contribute to their communities. It identifies a number of key areas for action, including: improving the health and care of older people; supporting older people to live independently; and promoting the active participation of older people in society.

The White Paper also identifies a number of key challenges that the Government will need to address in order to achieve its vision. These include: the need to improve the health and care of older people; the need to support older people to live independently; and the need to promote the active participation of older people in society. The White Paper also identifies a number of key areas for action, including: improving the health and care of older people; supporting older people to live independently; and promoting the active participation of older people in society.

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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**

INPUT

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**

INPUT

the 1990s, the number of people in the world who are under 15 years of age is expected to increase from 1.1 billion to 1.5 billion.

There are a number of reasons why the world's population is growing so rapidly. One of the main reasons is that the number of children born to each woman has increased. This is due to a number of factors, including the fact that women are now having children at a younger age, and that they are having more children. Another reason is that the number of people who are surviving to old age has increased. This is due to a number of factors, including the fact that people are now living longer, and that there are now more people in the world who are old.

The rapid growth of the world's population is a cause for concern. One of the main concerns is that the world's resources will be depleted. This is because the world's population is growing so rapidly that the world's resources will be used up much more quickly than they are being replaced. Another concern is that the world's environment will be destroyed. This is because the world's population is growing so rapidly that the world's environment will be destroyed much more quickly than it is being protected.

There are a number of things that can be done to slow down the world's population growth. One of the most important things is to reduce the number of children born to each woman. This can be done by providing women with access to family planning services, and by educating women about the benefits of family planning. Another important thing is to reduce the number of people who are surviving to old age. This can be done by providing people with access to health care, and by educating people about the benefits of a healthy lifestyle.

The world's population is growing so rapidly that it is a cause for concern. There are a number of things that can be done to slow down the world's population growth, and it is important that we take action now to do so. If we do not, the world's resources will be depleted, and the world's environment will be destroyed.

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COMPREHENSIVE CLIENT SUPPORT SERVICES

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

INPUT

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial statements. This includes not only sales and purchases but also expenses, income, and any other financial activity.

The second part of the document provides a detailed breakdown of the accounting process. It starts with the identification of the accounting cycle, which consists of eight steps: identifying the accounting cycle, analyzing and adjusting the accounts, and preparing the financial statements. Each step is explained in detail, with examples and diagrams to illustrate the process.

The third part of the document discusses the importance of internal controls. It explains how internal controls can help prevent errors and fraud, and how they can be designed to ensure the accuracy and reliability of the financial information. It also discusses the role of the auditor in verifying the accuracy of the financial statements.

The fourth part of the document discusses the importance of the balance sheet. It explains how the balance sheet provides a snapshot of the company's financial position at a specific point in time. It also discusses the components of the balance sheet, including assets, liabilities, and equity, and how they are measured and reported.

The fifth part of the document discusses the importance of the income statement. It explains how the income statement shows the company's performance over a period of time. It also discusses the components of the income statement, including revenue, expenses, and net income, and how they are measured and reported.

The sixth part of the document discusses the importance of the cash flow statement. It explains how the cash flow statement shows the company's ability to generate cash and how it is used. It also discusses the components of the cash flow statement, including operating activities, investing activities, and financing activities, and how they are measured and reported.

The seventh part of the document discusses the importance of the statement of retained earnings. It explains how the statement of retained earnings shows the changes in the company's retained earnings over a period of time. It also discusses the components of the statement of retained earnings, including net income, dividends, and the beginning balance, and how they are measured and reported.

The eighth part of the document discusses the importance of the statement of owner's equity. It explains how the statement of owner's equity shows the changes in the company's owner's equity over a period of time. It also discusses the components of the statement of owner's equity, including net income, dividends, and the beginning balance, and how they are measured and reported.

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The eleventh part of the document discusses the importance of the statement of cash flows. It explains how the statement of cash flows shows the company's ability to generate cash and how it is used. It also discusses the components of the statement of cash flows, including operating activities, investing activities, and financing activities, and how they are measured and reported.

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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**

INPUT

the 1990s, the number of people who have been employed in the public sector has increased in all countries. The increase in public sector employment has been particularly rapid in the United Kingdom, where the public sector has grown from 10.5% of the total workforce in 1980 to 17.5% in 1997 (see Figure 1).

There are a number of reasons for the increase in public sector employment. One reason is that the public sector has become a more important part of the economy. In many countries, the public sector has become a major employer of people, particularly in the service sector. This is because the public sector provides a wide range of services, including education, health care, and social security.

Another reason for the increase in public sector employment is that the public sector has become a more attractive place to work. This is because the public sector offers a number of advantages, including job security, a good work-life balance, and a high level of pay. In addition, the public sector is often seen as a more stable and secure place to work than the private sector.

There are also a number of factors that have contributed to the increase in public sector employment. One factor is the growth of the welfare state. In many countries, the welfare state has become a major part of the economy, and this has led to an increase in public sector employment. Another factor is the growth of the service sector. As the service sector has grown, it has become a more important part of the economy, and this has led to an increase in public sector employment.

There are a number of challenges that the public sector faces. One challenge is the need to raise revenue. In many countries, the public sector is a major source of revenue, and this has led to an increase in public sector employment. Another challenge is the need to provide a high quality of service. The public sector is often seen as a provider of high quality services, and this has led to an increase in public sector employment.

There are a number of ways in which the public sector can be improved. One way is to increase efficiency. This can be done by reducing costs and improving the quality of service. Another way is to increase transparency. This can be done by making the public sector more open to public scrutiny. In addition, the public sector can be improved by increasing the level of pay and benefits for public sector employees.

There are a number of reasons why the public sector is important. One reason is that the public sector provides a wide range of services that are essential for the well-being of the population. Another reason is that the public sector is a major employer of people, particularly in the service sector. In addition, the public sector is often seen as a more stable and secure place to work than the private sector.

There are a number of challenges that the public sector faces. One challenge is the need to raise revenue. In many countries, the public sector is a major source of revenue, and this has led to an increase in public sector employment. Another challenge is the need to provide a high quality of service. The public sector is often seen as a provider of high quality services, and this has led to an increase in public sector employment.

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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**

INPUT



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**

INPUT



**PROCUREMENT ANALYSIS
REPORTS (PARS)
INDEXED BY:**

- **Agency**
- **Fiscal Year**
- **Systems/Service Mode**

INPUT

the 1990s, the number of people in the UK who are aged 65 and over has increased from 10.5 million to 13.5 million (15.5% of the population).

There are a number of reasons why the number of people aged 65 and over is increasing. One of the main reasons is that people are living longer. The life expectancy at birth in the UK is 77 years for men and 81 years for women. This is an increase from 71 years for men and 75 years for women in 1950. The increase in life expectancy is due to a number of factors, including improvements in diet, lifestyle, and medical care.

Another reason why the number of people aged 65 and over is increasing is that people are having children later in life. This is due to a number of factors, including the fact that people are staying in education for longer, and the fact that people are having children later in life. This is due to a number of factors, including the fact that people are staying in education for longer, and the fact that people are having children later in life.

The increase in the number of people aged 65 and over has a number of implications for society. One of the main implications is that there is a need for more social care services. This is because people aged 65 and over are more likely to need social care services than younger people. This is due to a number of factors, including the fact that people aged 65 and over are more likely to have health problems, and the fact that people aged 65 and over are more likely to be living alone.

There are a number of ways in which society can meet the needs of people aged 65 and over. One of the main ways is to provide more social care services. This can be done in a number of ways, including by providing more care homes, and by providing more home care services. This can be done in a number of ways, including by providing more care homes, and by providing more home care services.

Another way in which society can meet the needs of people aged 65 and over is to provide more financial support. This can be done in a number of ways, including by providing more state pensions, and by providing more private pensions. This can be done in a number of ways, including by providing more state pensions, and by providing more private pensions.

The number of people aged 65 and over is expected to continue to increase in the future. This is due to a number of factors, including the fact that people are living longer, and the fact that people are having children later in life. This is due to a number of factors, including the fact that people are living longer, and the fact that people are having children later in life.

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**

INPUT

MARKET ANALYSIS REPORTS (MARS)

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

INPUT

the 1990s, the number of people in the world who are under 15 years of age has increased from 1.1 billion to 1.5 billion (UNEP 2000).

As a result of the increasing number of children in the world, the number of children in the United States has also increased. The number of children in the United States has increased from 100 million in 1970 to 110 million in 1995 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 120 million by the year 2010 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 130 million by the year 2020 (U.S. Census Bureau 1996).

The number of children in the United States is expected to increase to 140 million by the year 2030 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 150 million by the year 2040 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 160 million by the year 2050 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 170 million by the year 2060 (U.S. Census Bureau 1996).

The number of children in the United States is expected to increase to 180 million by the year 2070 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 190 million by the year 2080 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 200 million by the year 2090 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 210 million by the year 2100 (U.S. Census Bureau 1996).

The number of children in the United States is expected to increase to 220 million by the year 2110 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 230 million by the year 2120 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 240 million by the year 2130 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 250 million by the year 2140 (U.S. Census Bureau 1996).

The number of children in the United States is expected to increase to 260 million by the year 2150 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 270 million by the year 2160 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 280 million by the year 2170 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 290 million by the year 2180 (U.S. Census Bureau 1996).

The number of children in the United States is expected to increase to 300 million by the year 2190 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 310 million by the year 2200 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 320 million by the year 2210 (U.S. Census Bureau 1996). The number of children in the United States is expected to increase to 330 million by the year 2220 (U.S. Census Bureau 1996).

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**

INPUT



CUSTOMER SERVICE PROGRAM - U.S. (CSP)

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

INPUT

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

the 1990s, the number of people in the UK who are aged 65 and over has increased from 10.5 million to 13.5 million, and the number of people aged 75 and over has increased from 4.5 million to 6.5 million (Office for National Statistics 2000).

There is a growing awareness of the need to address the needs of older people, and the need to ensure that the health care system is able to meet the needs of older people. The Department of Health (2000) has set out a strategy for the health care system, which includes a commitment to improve the health care of older people. The strategy is based on the following principles:

- To ensure that older people have access to the same quality of health care as younger people.
- To ensure that older people are able to live independently for as long as possible.
- To ensure that older people are able to participate in decisions about their health care.
- To ensure that older people are able to live in their own homes for as long as possible.

The strategy is based on the following principles: to ensure that older people have access to the same quality of health care as younger people; to ensure that older people are able to live independently for as long as possible; to ensure that older people are able to participate in decisions about their health care; and to ensure that older people are able to live in their own homes for as long as possible.

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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

the 1990s, the number of people in the world who are under 15 years of age is expected to increase from 1.1 billion to 1.5 billion.

There are a number of reasons why the world's population is growing so rapidly. One of the main reasons is that the number of children born to each woman has increased. This is due to a number of factors, including the fact that women are now having children at a younger age, and that there are more children surviving to adulthood.

Another reason why the world's population is growing so rapidly is that the number of people who are surviving to old age has increased. This is due to a number of factors, including the fact that people are now living longer, and that there are more people surviving to old age.

There are a number of other reasons why the world's population is growing so rapidly. One of the main reasons is that the number of people who are migrating to other parts of the world has increased. This is due to a number of factors, including the fact that people are now moving to other parts of the world in search of better opportunities.

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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**

INPUT

INFORMATION SYSTEMS PROGRAM - U.S. (ISP)

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

INPUT

the 1990s, the number of people in the UK who are aged 65 and over has increased from 10.5 million to 13.5 million (13.5% of the population).

There is a growing awareness of the need to address the needs of older people, and the Government has set out a strategy for the 21st century in the White Paper on *Ageing Better: The Government's Strategy for Older People* (Department of Health 1999).

The White Paper sets out a number of key objectives for the Government, including:

- to improve the health and well-being of older people;
- to ensure that older people are able to live independently and actively in their own homes;
- to ensure that older people are able to participate in the life of their communities;
- to ensure that older people are able to live in dignity and respect.

The White Paper also sets out a number of key actions for the Government, including:

- to improve the health and well-being of older people by increasing the number of GPs and other health professionals who specialise in the care of older people;
- to ensure that older people are able to live independently and actively in their own homes by providing more services to help them to do so;
- to ensure that older people are able to participate in the life of their communities by providing more opportunities for them to do so.

The White Paper also sets out a number of key actions for the NHS, including:

- to improve the health and well-being of older people by providing more services to help them to do so;
- to ensure that older people are able to live independently and actively in their own homes by providing more services to help them to do so;
- to ensure that older people are able to participate in the life of their communities by providing more opportunities for them to do so.

The White Paper also sets out a number of key actions for local authorities, including:

- to improve the health and well-being of older people by providing more services to help them to do so;
- to ensure that older people are able to live independently and actively in their own homes by providing more services to help them to do so;
- to ensure that older people are able to participate in the life of their communities by providing more opportunities for them to do so.

LARGE-SCALE SYSTEMS DIRECTIONS (RESIDUAL VALUE FORECASTS)

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

INPUT



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ENVIRONMENT



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**INDUSTRY
SLOWDOWN**

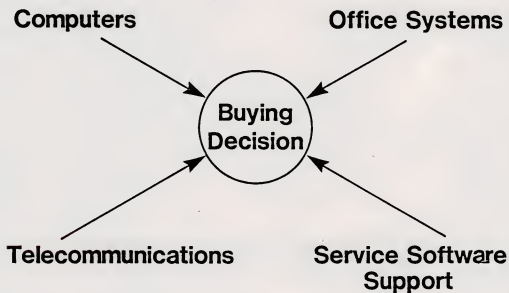


LAW 1

**Rate of Supply >
Rate of Absorption**

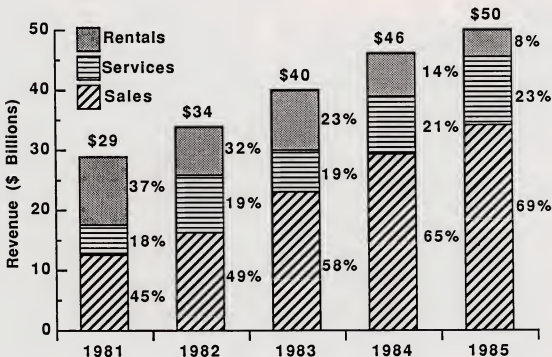


COMPLEXITY





IBM'S LAST FIVE YEARS





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%



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%

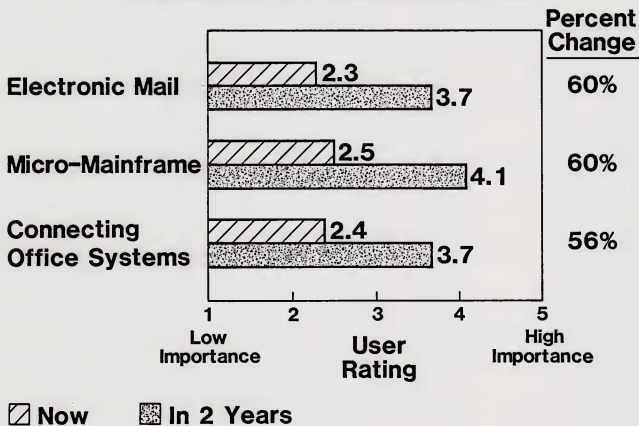


IBM'S MAINTENANCE SERVICE

- **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**
-

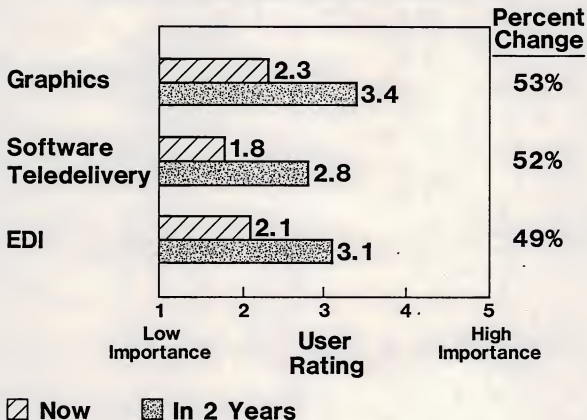


APPLICATION IMPORTANCE





APPLICATION IMPORTANCE





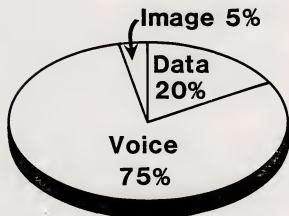
ADVANCED OFFICE SYSTEMS

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

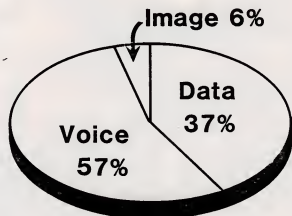


CORPORATE NETWORK PROPORTIONS

User Estimates



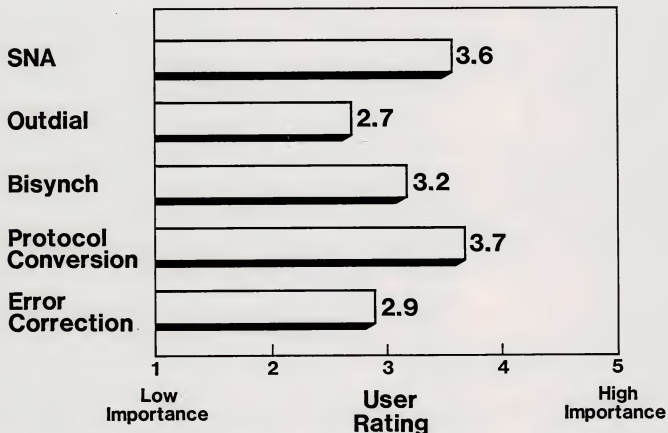
1986



1991



NETWORK SERVICES FEATURE RATINGS



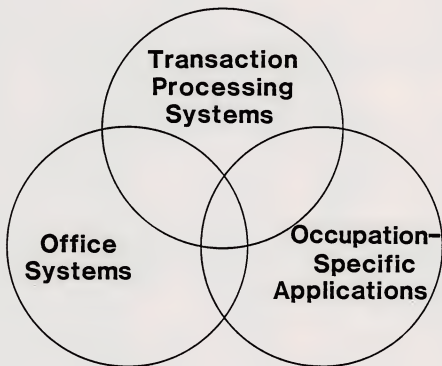


OPEN SYSTEMS INTERCONNECTION

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

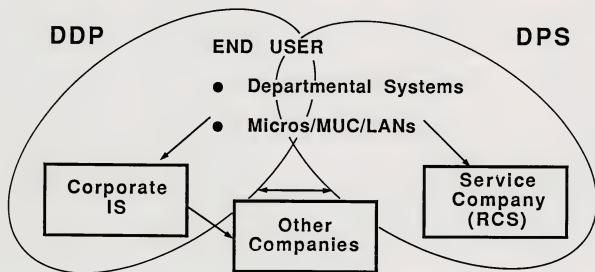


INTEGRATION EQUALS DDP





EXTERNAL VERSUS INTERNAL



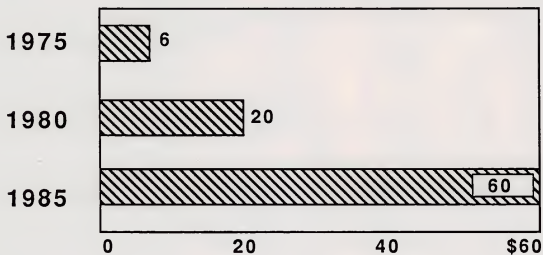


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**INFORMATION SERVICES
STATUS**

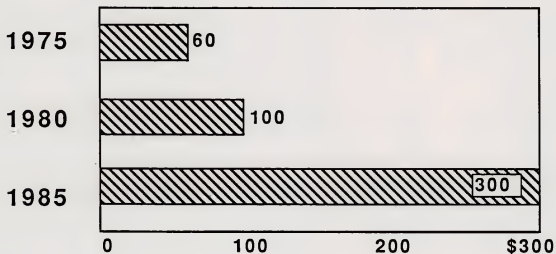


**U.S. COMPANIES
ANNUAL REVENUES OVER \$100 MILLION**



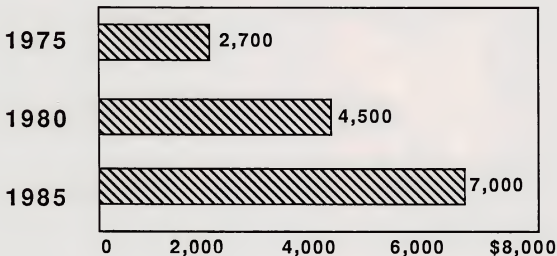


**U.S. COMPANIES ANNUAL REVENUES
\$10 MILLION - \$100 MILLION**



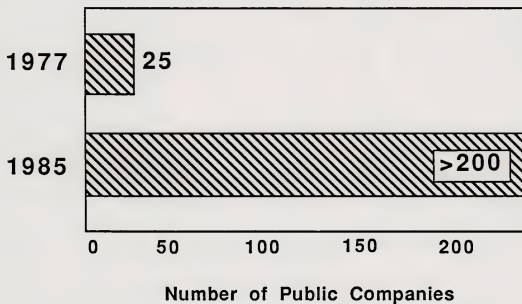


**U.S. COMPANIES ANNUAL REVENUES
\$250 THOUSAND - \$10 MILLION**



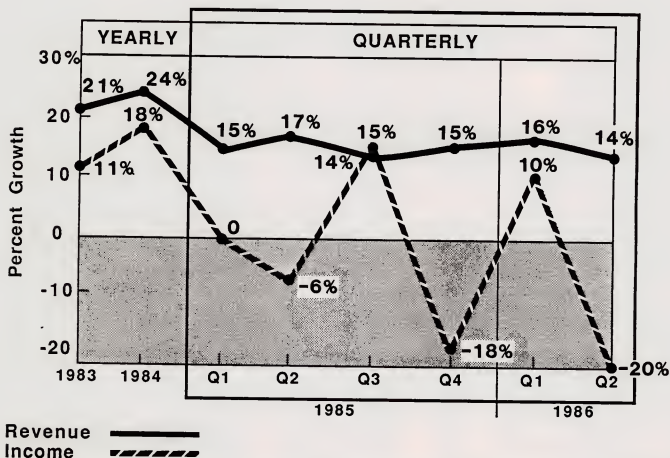


PUBLIC COMPANIES



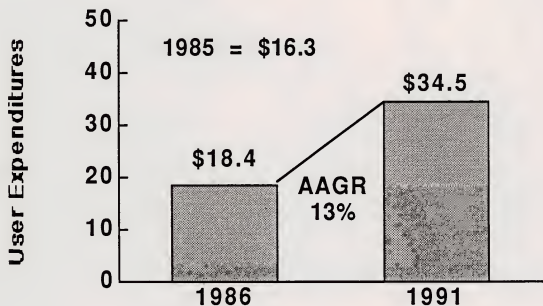


PUBLIC INFORMATION SERVICES VENDORS



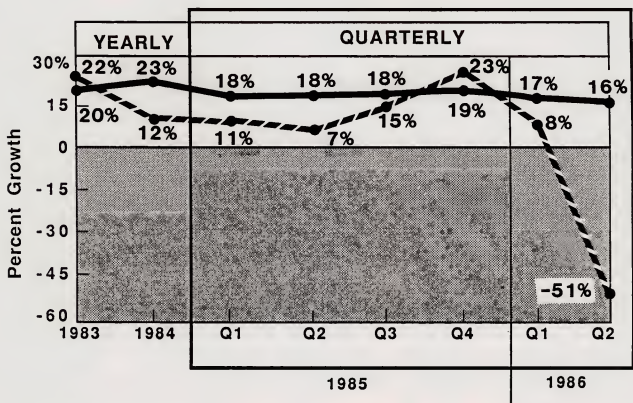


PROCESSING/NETWORK SERVICES MARKET
(\$ Billions)





PUBLIC PROCESSING SERVICES VENDORS



Revenue ———
Income - - - - -

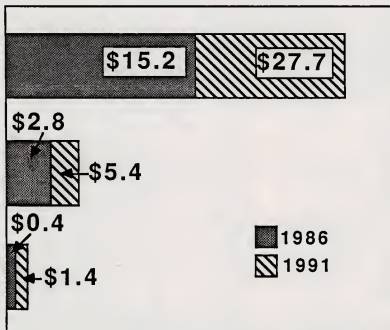
Note: Excludes Anacomp



PROCESSING/NETWORK
SERVICES MARKETS, 1986-1991

AAGR

Remote
Computing/
Batch
Services



13%

Facilities
Management

14%

Value-Added
Network
(VAN)

28%

0 5 10 15 20 25 \$30
User Expenditures (\$ Billions)



**PROCESSING/NETWORK SERVICES:
DRIVING FORCES**

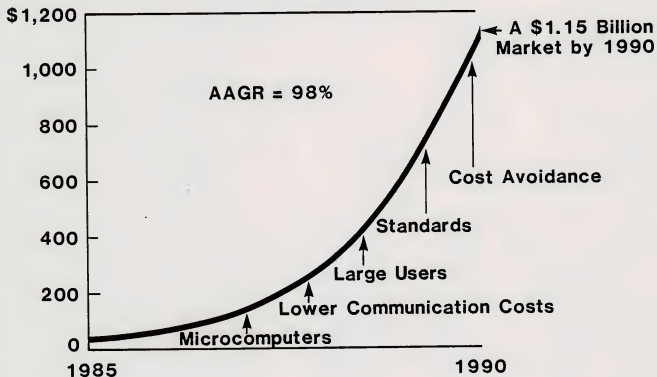
- **Decrease in Hardware Prices**

 - + **EDI**

 - + **On-Line Data Base Segment Strong**

 - + **Niche Opportunities**
-



**EXPONENTIAL EDI GROWTH
(\$ Millions)**

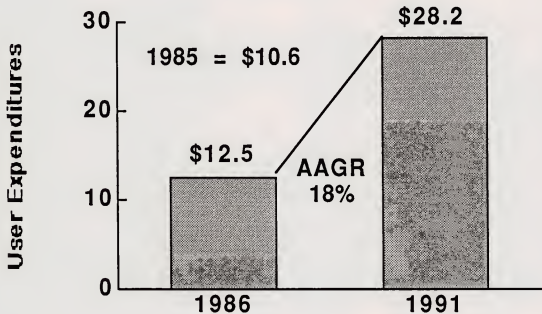


INTERNATIONAL EDI

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

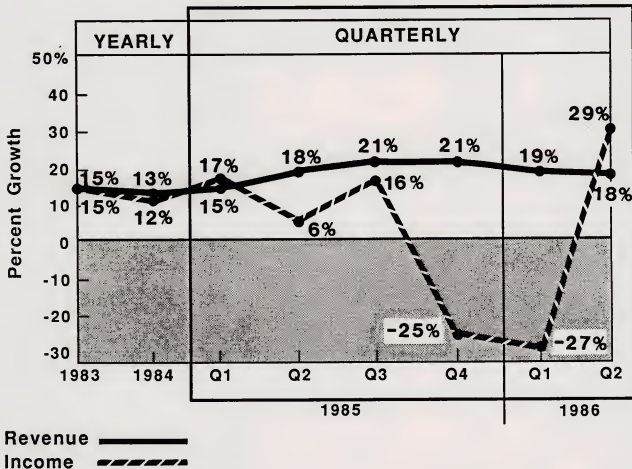


PROFESSIONAL SERVICES MARKET
(\$ Billions)





PUBLIC PROFESSIONAL SERVICES VENDORS



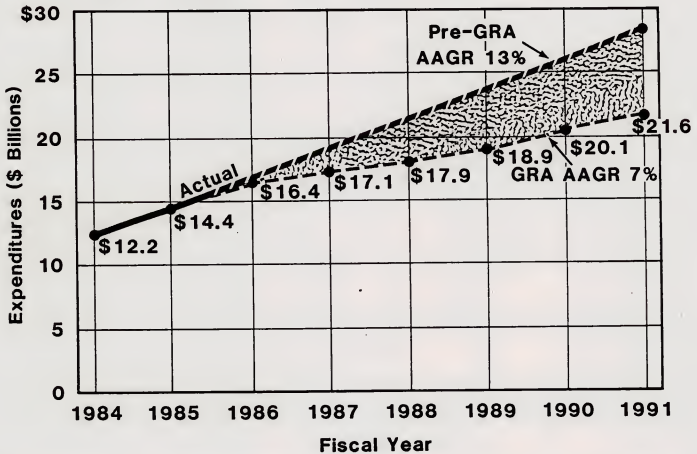


**PROFESSIONAL SERVICES:
DRIVING FORCES**

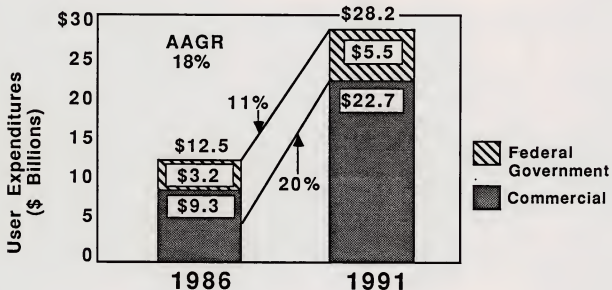
- **More User Willingness to Compromise on Uniqueness**
- + **More Software Product Related**
- + **More Focus on Internal Productivity**
- + **Increased Industry Specialization**
- + **Federal Government Vendors Becoming Commercial Vendors**



GRAMM-RUDMAN IMPACT ON FORECAST

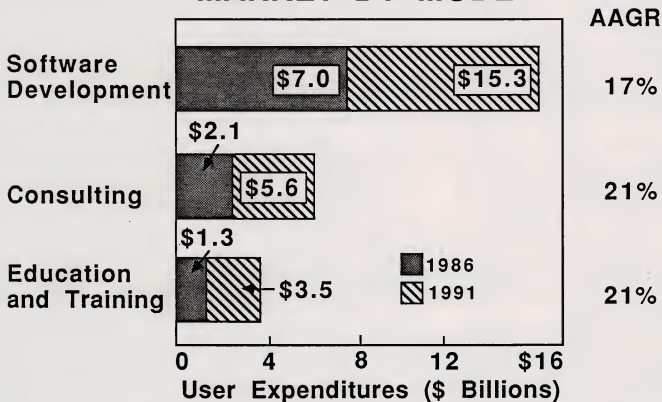




FEDERAL GOVERNMENT/COMMERCIAL
PROFESSIONAL SERVICES MARKETS



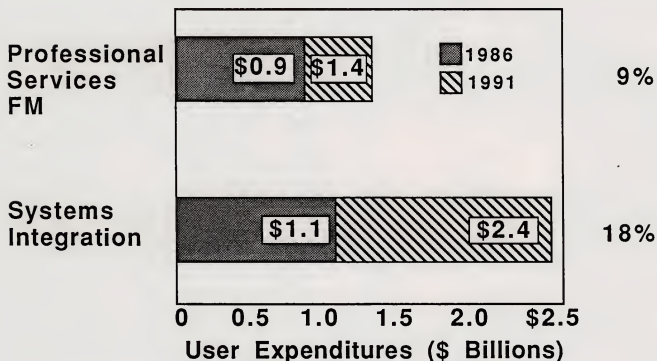
PROFESSIONAL SERVICES MARKET BY MODE



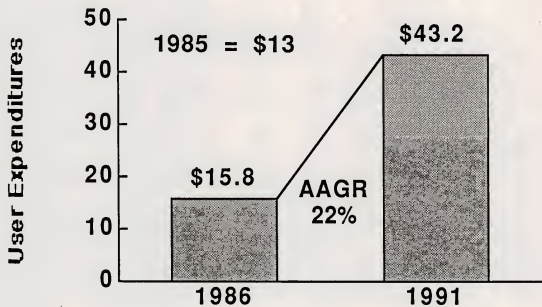


**PROFESSIONAL SERVICES
MARKET BY MODE**

AAGR

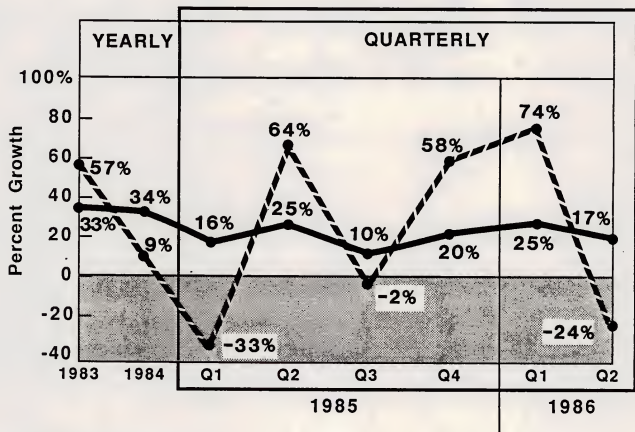




SOFTWARE PRODUCTS MARKET
(\$ Billions)



PUBLIC SOFTWARE PRODUCTS VENDORS



Revenue ———
Income - - - - -



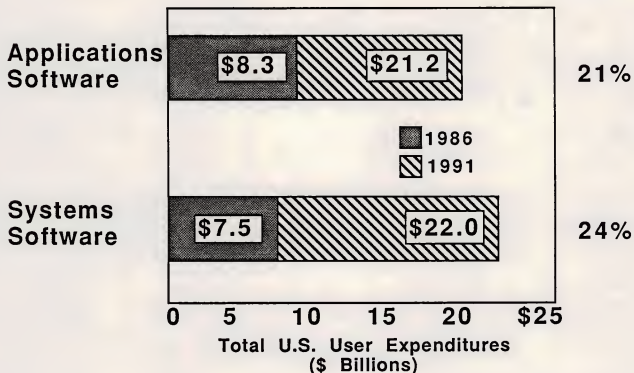
**SOFTWARE PRODUCTS MARKET:
DRIVING FORCES**

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



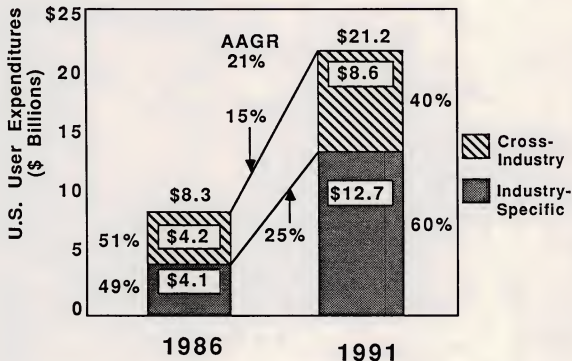
SOFTWARE PRODUCTS MARKETS

AAGR





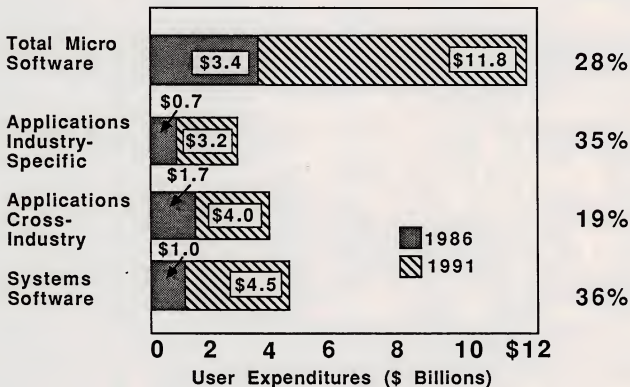
INDUSTRY-SPECIFIC APPLICATIONS SOFTWARE TO INCREASE SIGNIFICANTLY



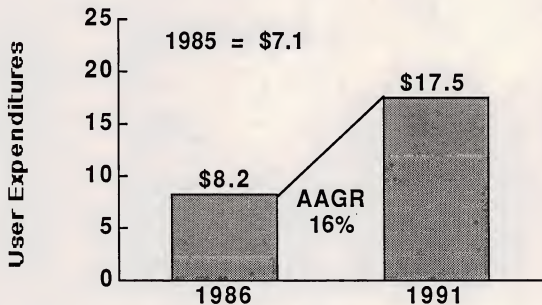


**STRONG MICRO SOFTWARE MARKET
1986-1991**

AAGR

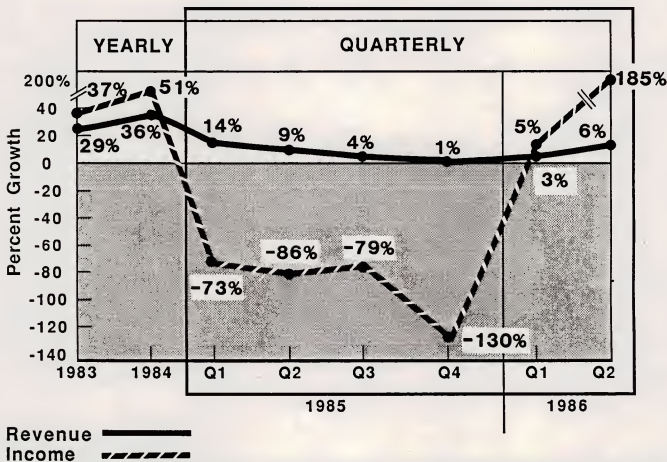




TURNKEY SYSTEMS MARKET
(\$ Billions)



PUBLIC TURNKEY SERVICES VENDORS





**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%



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**
-



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**
-



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

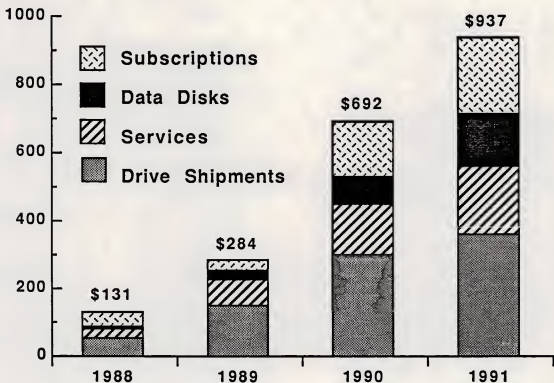


CIM SUMMARY

- **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**
-



CD ROM MARKETS, 1986-1991





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



ADOPTION OF CD ROM HINDERED

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



INPUT®

CONCLUSION



CONCLUSIONS

- Slowdown Temporary
 - Greater User Sophistication
-



INFORMATION SERVICES

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



THE TREND TOWARDS DECENTRALIZATION

