Worldwide Markets

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INPUT

Notes



A Global Perspective

WM-2

Notes



Large Enterprises Require Worldwide Information Systems

- · Worldwide markets developing
- Responsiveness to customers
- Timely transfer of information
 - Tactical, competitive
 - Strategic

WM-3

Notes		



Globalized Information Systems Enterprise-wide Applications

- Material
 - Inventory control, JIT
 - Order entry (EDI)
 - MRP II, closed-loop systems

Notes		
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Globalized Information Systems Enterprise-wide Applications

- Financial
 - EFT, cash management
 - Financial consolidations
 - 24-hour financial markets
 - Pricing, cost analyses

INPUT

Notes		



Globalized Information Systems Facilitators

- Telecommunications networks
- Support services
- Standards

WM-6

Worldwide vendor capabilities

Notes		

¥12/92



Globalized Information Systems Facilitators

- · Emerging communications standards
 - X.400, X.500, EDIFACT
 - OSI, ONA
- Industry-specific data bases
- · Simultaneous language translation

Notes		



Globalized Information Systems Facilitators

- Network capabilities
 - Graphics transmission
 - Facsimile (broadcast, store and forward)
 - EDI

WM-8

Notes	

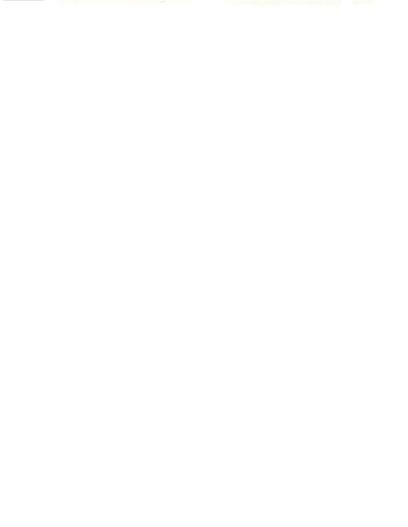
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Globalization Benefits from Emerging Standards

- Consortia-driven and de-facto:
- · UNIX—gaining acceptance rapidly
- CASE (eventually)

WM-9

Notes				
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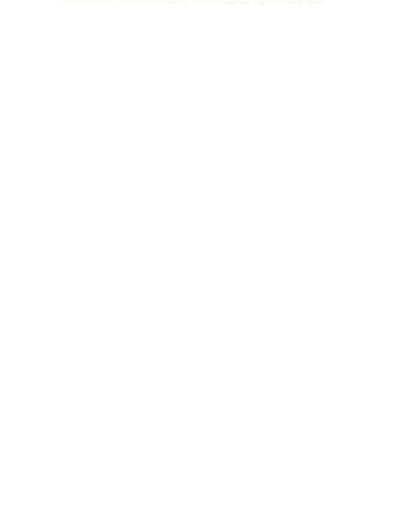


Globalization Benefits from Emerging Standards

- RDBMS
 - Oracle, DB2, others
- SAA
- · Graphical user interfaces
- · Communications protocols

WM-10 INPUT

Notes		

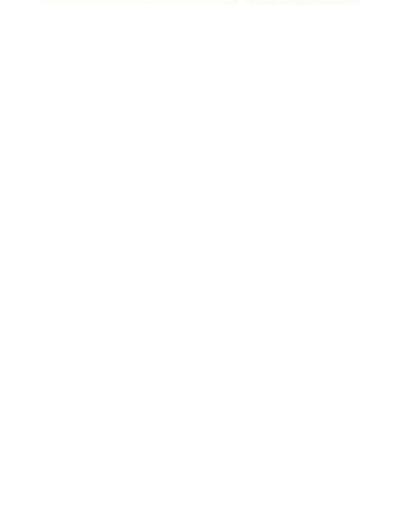


Counter-Trends to Globalization

- Time required to build relationships
- · Longer lead time to profits
- · Language barriers
 - Documentation

WM-11 INPUT

Notes	

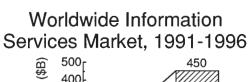


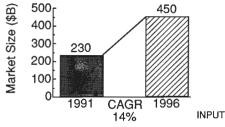
Countertrends to Globalization

- · Cultural "non-fits"
- Preference for local products and services
- · Focus on narrow, niche markets
- National restrictions

Notes		







Notes

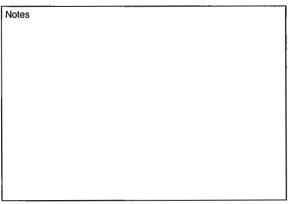
WM-15



1991 Worldwide Information Services Market by Region Asia/Pacific Rest of World 2% N. America

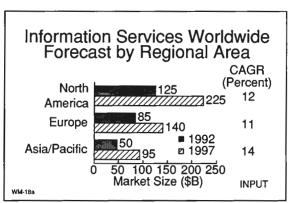
1991 = \$234 billion

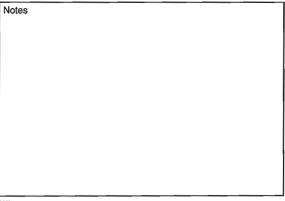
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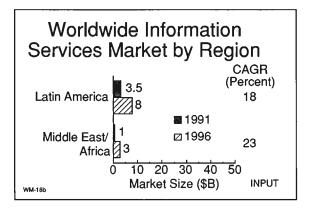
WM-17

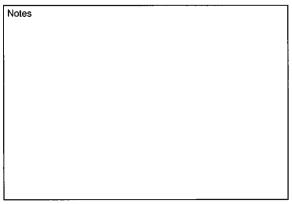




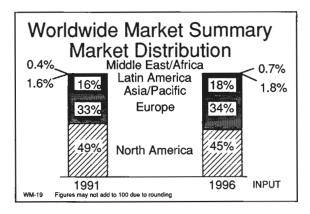






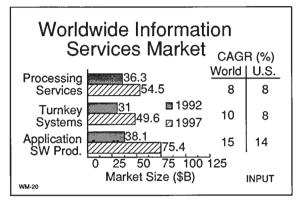




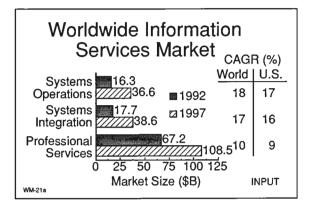


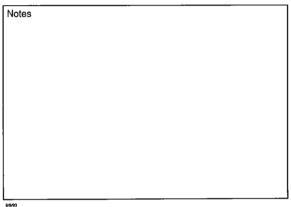
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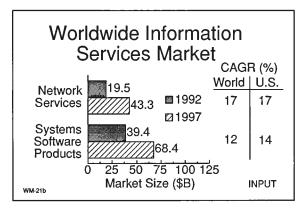


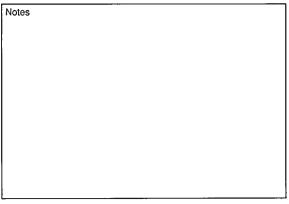


Notes		









Worldwide Information Services Market by Country

	1991 Market		
Country	\$ Billions	Percent	
United States	111	47	
Japan	32	14	
France	18	8	

WM-22a INPUT

Worldwide Information Services Market by Country

	1991 Market		
Country	\$ Billions	Percent	
Germany	14	6	
United Kingdom	14	6	
Rest of World	45	19	
Total	234	100	

WM-22b INPUT

Notes		
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Building a Global Capability

- Andersen Consulting
- CAP Gemini Sogeti
- Infonet
- Digital
- CSC

Notes		

Acquiring a Global Capability

- · CSC
- EDS
- CAP Gemini Sogeti
- DEC

INPUT

Notes

Canadian Market Business Environment

- Recession
- Impact of free trade
- Low productivity

WM-26a INPUT

Notes

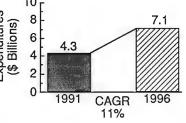
Canadian Market Business Environment

- Federal budget and taxes
- Need for improved business systems and telecommunications
- · Limitations on funding automation

WM-26b	INPUT	
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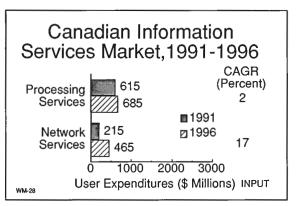
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Canadian Information Services Market, 1991-1996



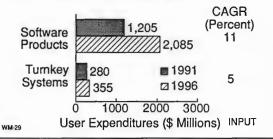
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WM-27



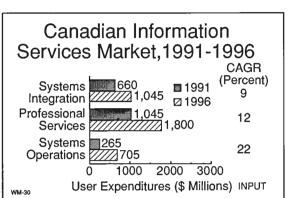
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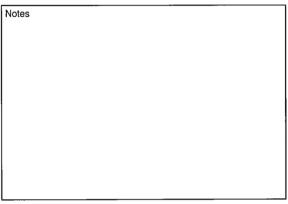
Canadian Information Services Market, 1991-1996



Notes				







Canadian Market Key Technology Needs

- Integration is key
- · Growing DBMS use
- · Local/wide-area networking

Notes	



Canada

Key Technology Trends

- · Relational data base technology
- Network expansion
- Client/server introduction
- Expanded use of EDI
- · Integration of applications

WM-32 INPUT

Notes		

¥17/92



Canadian Market Key Technology Trends

- · Productivity tools growth
- · Continued downsizing
- More technology integration

WM-33 INPUT

Notes		



Canadian Market Key Technology Issues

- · Benefits not visable
- Loss of control due to rapid penetration
- Business/technology linkage needed

WM-34

Notes	
1//81	



Canada

Ranking of Technology Importance

Factor	Average User Rank	Average Vendor Rank
Network	5	3
EDI	6	5
Electronic mail	7	-
Open systems	8	2
WM-34b		INPUT

Notes

Canada

Forces Driving Information Services Expenditures

Factor	User Rank	Vendor Rank
Distribution	-	5
Quality	-	6
Outsourcing	-	7

wm-35c INPUT

Notes			

Canada

Forces Inhibiting Outside Services Expenditures

	Average Rank	
Factor	User	Vendor
Government regulation	4	-
Impact on user organization	5	-
Downsizing	-	4
WM-36b	1	INPUT

Notes			



Canada

Forces Inhibiting Outside Services Expenditures

	Average Rank		
Factor	User	Vendor	
User doesn't have enough knowledge to utilize vendor	-	3	
Loss of control by user	-	5 INPUT	
WM-36c			

Notes			

Canada

Conclusions

- Recession and trade agreement continues to have a negative effect
- · Users are highly cost conscious
- Financing diff. limit project activities
- Present application systems and networks limit business

WM-37 INPUT

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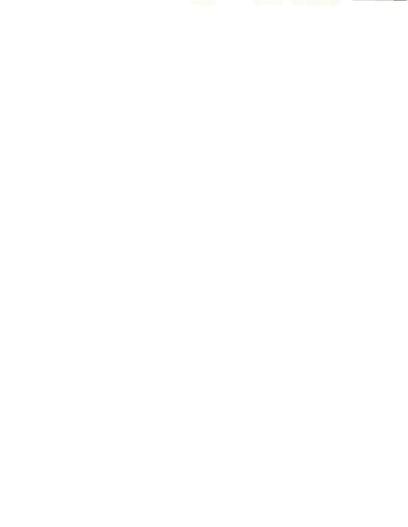


Globalized Information Systems

- Electronic Commerce
 - EDI based
 - Trading community based
 - Changing how business is done

WM-38

Notes	



Processing Services

	'91 (\$B)	'96 (\$B)	CAGR (%)
North America	18.9	27.4	8
Europe	9.4	13.3	7
Asia/Pacific	6.3	10.2	10
Latin America	0.3	0.5	8
Mid East/Africa	0.3	0.6	14

WM-39

Notes		
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Turnkey Systems

	(\$B)	36 (\$B)	CAGR (%)
North America	11.7	17.8	9
Europe	12.3	24.3	15
Asia/Pacific	4.4	8.1	13
Latin America	0.5	1.0	16
Mid East/Africa	0.1	0.2	12

INPUT

Notes			



Applications SW Products

	'91 (\$B)	'96 (\$B)	CAGR (%)
North America	20.5	39.3	14
Europe	9.1	20.9	18
Asia/Pacific	2.9	7.0	19
Latin America	1.0	2.8	22
Mid East/Africa	0.3	1.1	30
			INPUT

W-41

Notes			



Systems Operations

	'91 (\$B)	'96 (\$B)	CAGR (%)
North America	8.5	18.3	16
Europe	1.5	3.8	21
Asia/Pacific	3.2	7.9	20
Latin America	0.2	0.4	12
Mid East/Africa	-	-	-

WM-42 INPUT

Notes			



Systems Integration

	'91 (\$B)	'96 (\$B)	CAGR (%)
North America	8.2	18.6	18
Europe	3.4	8.1	19
Asia/Pacific	3.2	8.5	21
Latin America	0.1	0.2	13
Mid East/Africa	-	-	11

INPUT

Notes			



Professional Services

	'91 (\$B)	'96 (\$B)	CAGR (%)
North America	18.7	29.8	10
Europe	24.7	51.9	16
Asia/Pacific	12.7	31.0	20
Latin America	0.6	1.5	19
Mid East/Africa	0.3	1.1	30

WM-44 INPUT

Notes		



Network Services

	'91 (\$B)	'96 (\$B)	CAGR (%)
North America	9.5	20.5	17
Europe	4.7	11.6	20
Asia/Pacific	1.6	4.4	22
Latin America	0.1	0.3	14
Mid East/Africa	-	-	-

WM-45 INPUT

Notes		



Systems SW Products

'91 (\$B) '96 (\$B) CAGF				
North America	18.5	32.4	12	
Europe	12.6	21.6	11	
Asia/Pacific	2.7	6.3	18	
Latin America	0.7	1.7	20	
Mid East/Africa	-	0.1	10	

INPUT

Notes		

Worldwide Information Services

	Rank	Vendor/ Country	1990 Rev. (\$B)	Market Share (%)
	1	IBM (U.S.)	13.5	6.4
	2	EDS (U.S.)	2.9	1.4
	3	DEC (U.S.)	2.8	1.3
	4	NTT (Japan)	2.5	1.2
w	M-47		•	INPUT

Notes		



Worldwide Information Services

Rank		1990 Rev. (\$B)	Market Share (%)
5	Reuters (U.K.)	2.5	1.2
6	Andersen (U.S.)	2.2	1.0
	Siemens-Nixdorf (Germany)	1.8	0.9
WM-48	•	'	INPUT

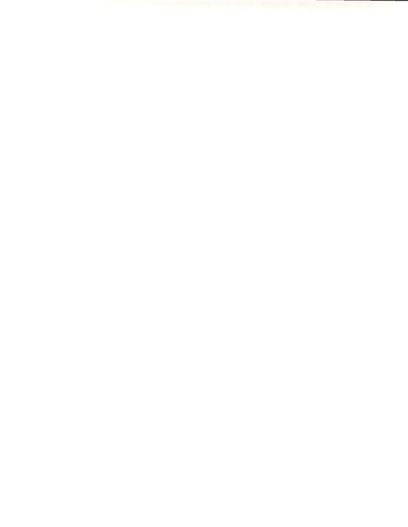
Notes		



Worldwide Information Services

Ranl		1990 Rev. (\$B)	Market Share (%)
8	CSC (U.S.)	1.7	0.8
8	CAP Gemini Sogeti (France) Microsoft (U.S.)	1.7	0.8
9	Microsoft (U.S.)	1.4	0.7
WM-49			INPUT

Notes		



Worldwide Information Services

Rank	Vendor/ Country	1990 Rev. (\$B)	Market Share (%)
10	Computer Assoc. (U.S.) Oracle	1.3	0.6
11	Oracle	1.1	0.5
12	Bull (France)	0.9	0.4
WM-50a	•	•	INPUT

Notes

Worldwide Information Services

Rank	Vendor/ Country	1990 Rev. (\$B)	Market Share (%)
12	TRW (U.S.)	0.9	0.4
12	First Fin'l. Mgmt. (U.S.) AMEX (U.S.)	0.9	0.4
13	AMEX (U.S.)	0.8	0.3
			INDUT

wm-50b INPUT

Notes		



Worldwide Information Services

Rank		1990 Rev. (\$B)	Market Share (%)
14	Nomura Res. (Japan) CSK (Japan) Sema	0.7	0.3
14	CSK (Japan)	0.7	0.3
15	Sema	0.6	0.3
WM-50c			INPUT

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Notes



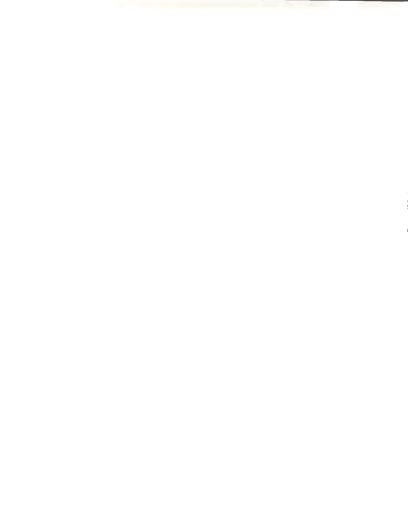
Leading Vendors

Worldwide Information Services

Rank	Vendor/ Country	1990 Rev. (\$B)	Market Share (%)
15	Japan Res. Inst. (Japan) Hitachi Info. Sys. (Japan)	0.6	0.3
15	Hitachi Info. Sys. (Japan)	0.6	0.3
184 504			INPUT

WM-50d

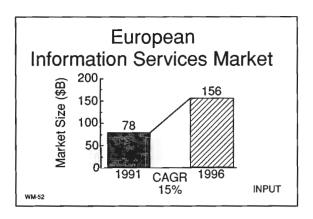
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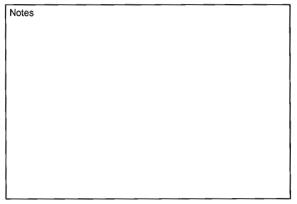


WM-51 INPUT

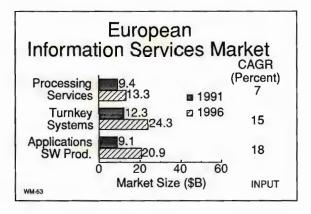
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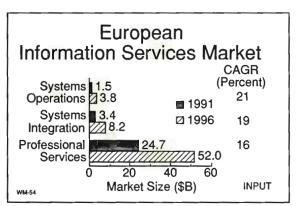


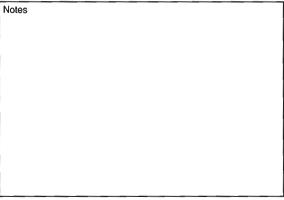


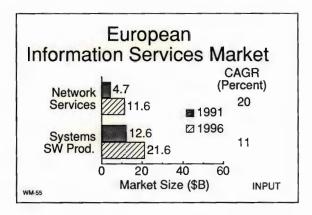


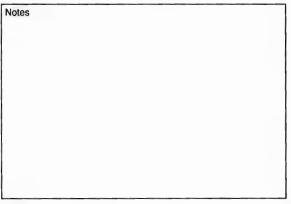
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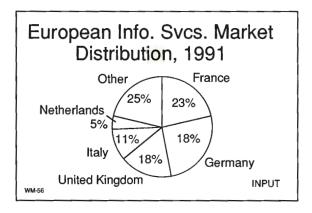












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Information Services Markets by Country

	Market (\$B)		
Country	1991	1996	CAGR (%)
France	18.1	36.1	15
Germany	14.4	30.3	16
United Kingdom	14.2	26.4	13
Italy	8.4	16.5	15
WM-57	'	1	INPUT

Notes	

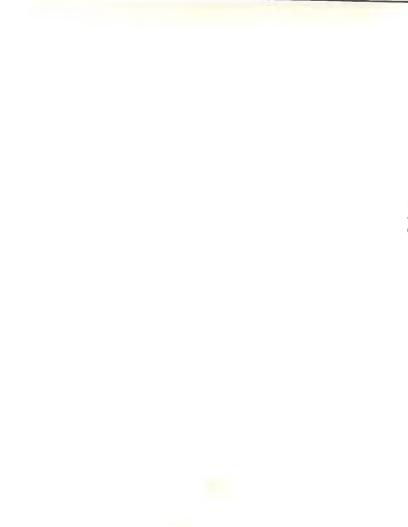


Information Services Markets by Country

	Marke	et (\$B)	1
Country	1991	1996	CAGR (%)
Netherlands	4.6	9.2	15
Sweden	3.4	6.6	15
Spain	2.7	6.3	18
Switzerland	2.7	5.6	15
	•	'	INPU

JΤ WM-58

Notes		



Information Services Markets by Country

	Mark	et (\$B)		
Country	1991	1996	CAGR (%)	
Belgium	2.2	4.7	18	
Denmark	1.8	3.2	12	
Norway	1.6	3.0	13	

WM-59a INPUT

Notes	



Information Services Markets by Country

	Marke	et (\$B)	
Country	1991	1996	CAGR (%)
Finland	1.3	2.6	14
Austria	1.2	2.3	14
Other Europe	3.7	6.3	14

WM-59b INPUT

Notes



European Information Services Markets by Industry

	Marke	t (\$B)	
	1991	1996	CAGR (%)
Distribution	4.1	7.1	12
Banking & Finance	15.3	31.0	15

WM-60 INPUT

Notes		
		_

European Information Services Markets by Industry

	Marke	t (\$B)	
	1991	1996	CAGR (%)
Insurance	3.8	8.4	17
Discrete Mfg.	10.5	22.0	16
Process Mfg.	4.4	10.2	18

WM-61 INPUT

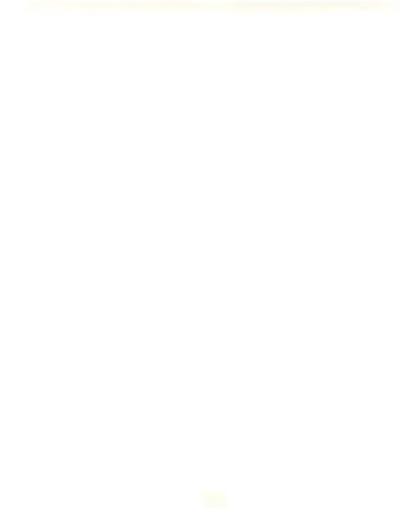
Notes			



Driving Forces

- · Creation of single market
- Vendor consolidation for single market
- Privatization drives new investment

WM-64 INPUT



Driving Forces

- Increasing acceptance of packaged software
 - Penetration less than U.S.
- Acceptance of standards
- UNIX, etc. faster than U.S.

WM-65 INPUT

Notes		



Inhibiting Factors

- Continuing economic downturn
- Languages and cultures

INPUT

Notes			



Single European Market Many Trade Barriers

- · Languages, cultures, currencies
- EEC + EFTA
- Eastern countries

WM-67 INPUT

Notes	



Single European Market One Strategy or Many

- Pan European vendors?
- Developed vs. undeveloped areas
- Strong open systems trend

WM-68	INPUT

Notes		



Europe

Areas of Opportunity

- UNIX
 - Software products
 - Professional services
- Systems operations
- Network operations
- Desktop services

WM-69

Notes	



Europe

Areas of Opportunity

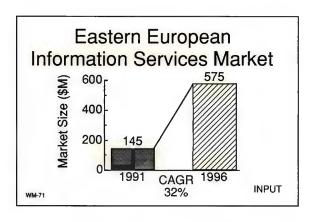
- Applications software products
- Professional services
 - Software maintenance
 - New technology training
 - New technology services

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Notes		

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Eastern European Information Services Market

	Marke		ı
	1992	1997	CAGR (%)
Processing Services	14	27	14
Turnkey Systems	18	59	27
Applications SW Prod.	69	146	16

WM-72a

Notes		



Eastern European Information Services Market

	Marke	t (\$M)	
	1992	1997	CAGR (%)
Systems Operations	8	50	44
Systems Integration	10	151	73

WM-72b

Notes		



Eastern European Information Services Market

	Marke	et (\$M)	
	1992	1997	CAGR (%)
Professional Services	27	63	18
Systems SW Prod.	35	128	30
Network Services	2	17	53

Notes		



Eastern Europe

Driving Forces

- Major change in political environment
- Increased free world aid
- Industrial modernization
- Privatization

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Notes		



Eastern Europe

Inhibitors

- Economic status
- · Lack of local skills
- Small computer installed base
- Currency weakness
- Languages

WM-75

Notes		
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Eastern Europe

Market Entry Considerations

- Small markets—many markets
- Small computer installed base
- PC products favored
- Support service complications
- Long-term commitment

WM-76

Notes		



Areas of Opportunity

- Education & training
- Local agent business development
- Turnkey systems
- · National and local government
- Professional services—all kinds

WM-77

Notes		

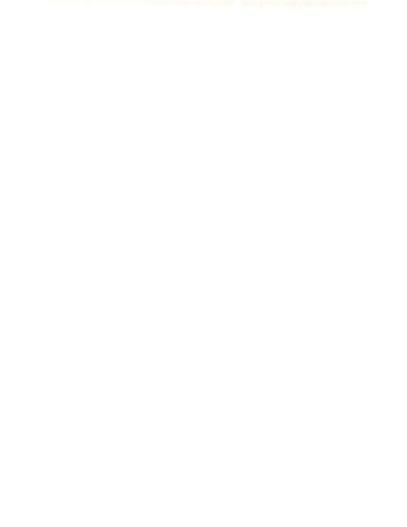


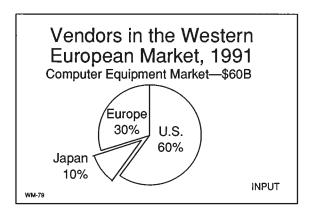
Vendors in the Western European Market, 1991 Software and Services Market—\$77B U.S. 20% Europe

WM-78

80%

Notes





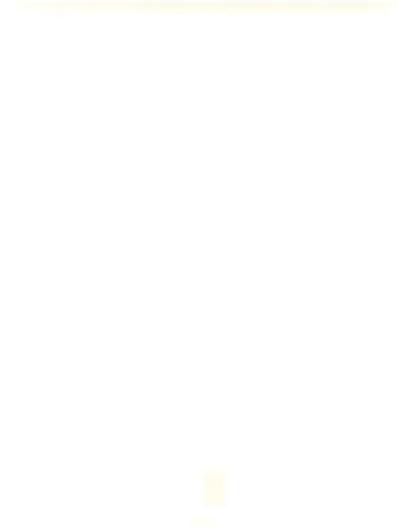
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Leading Vendors in Europe

Rank	Vendor	Country	Info. Svcs. Rev. '90 (\$M)
1	IBM	U.S.	4,900
2	Siemens-Nixdorf	Germany	1,690
3	CAP Gemini Sogeti	France	1,650
4	Reuters	U.K.	1,430

Notes		



Leading Vendors in Europe

Rank	Vendor	Country	Info. Svcs. Rev. '90 (\$M)
5	Digital	U.S.	1,220
6	Bull	France	795
7	Andersen Consulting	U.S.	705

WM-81

INPUT

Notes



Leading Vendors in Europe

Rank	Vendor	Country	Info. Svcs. Rev. '90 (\$M)
	Unisys Microsoft	U.S. U.S.	720 655
10	Sema Group	France	640

WM-82

Notes			

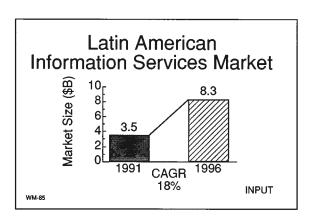


Latin America

WM-84 INPUT

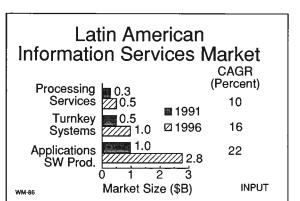
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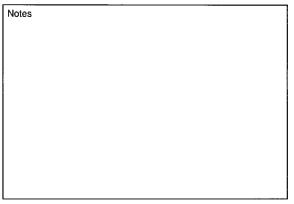


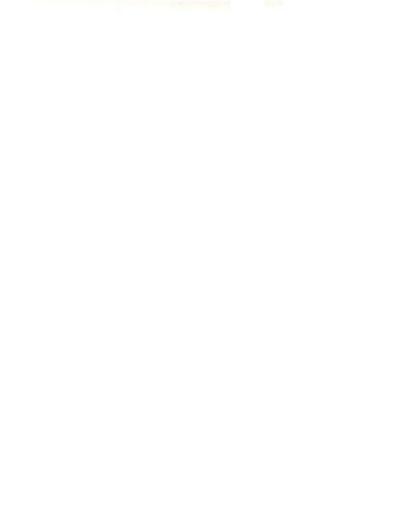


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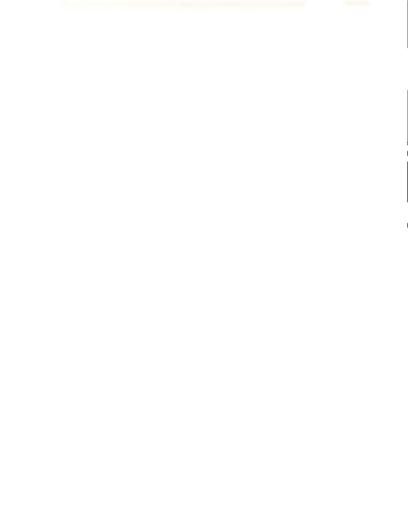




Latin American Information Services Market

CAGR (Percent) Systems 0.2 Operations 0.4 12 **1991** Systems | 0.1 13 Integration 0.2 **1996** Professional 0.6 19 Services Market Size (\$B) INPUT WM-87

Notes

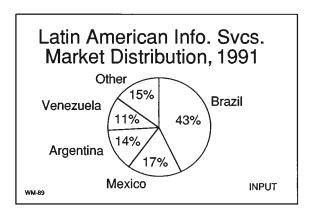


Latin American Information Services Market



Notes	





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Driving Forces

- Public sector spending
 - Education
- · Improving labor skills
- · Mini/PC growth
- Privatization
- Political stability improving

WM-90

Notes		



Inhibiting Factors

- Inflation
- Protectionism
- Stalled economies
- Inflation
- Software licensing rules

Notes	



Market Entry Considerations

- · Vendor stability—foreign and local
- · Long-term view essential
- · Local representation required
- Product ownership issues
- · Improving software licensing laws

Notes			



Latin America Areas of Opportunity

- Office Productivity
- Turnkey systems—mini & PC
- Education & training
- Professional services—tied to software products
- New technology—transfer of skills

 INPUT

WM-93

Notes



Latin American Info. Svcs. Markets by Country

			. •
Country	'91 (\$B)	'96 (\$B)	CAGR (%)
Brazil	1.5	3.7	20
Mexico	0.6	1.4	19
Argentina	0.5	1.1	17
Venezuela	0.4	0.7	13
Other	0.5	1.4	20
WM-94			INPUT

Notes	-	



Applications Software Products Market Forecast

	Marke	t (\$B)	
	1990	1995	CAGR (%)
Brazil	0.3	1.0	24
Mexico	0.1	0.4	27
Argentina	0.1	0.3	24
,		•	INPUT

WM-95

Notes	
	 _

Applications Software Products Market Forecast

	Marke	t (\$B)	
	1990	1995	CAGR (%)
Venezuela	0.1	0.2	20
Other	0.2	0.6	25

WM-96

Notes



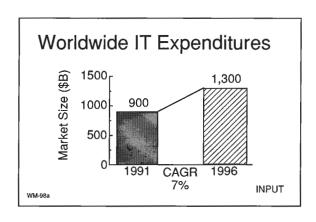
Information Services Market Penetration Worldwide

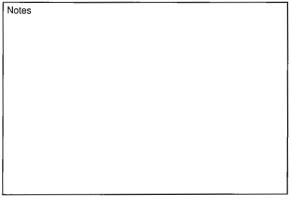
	Marke	Market (\$B)	
	1991	1996	
Information Systems	900	1,300	
Information Services	230	450	
Penetration	26%	35%	
		INPU	

Notes

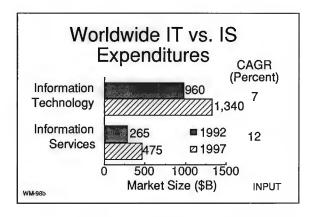
WM-97





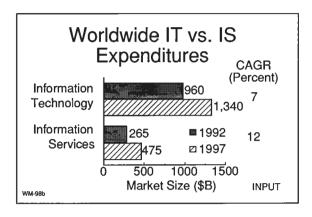


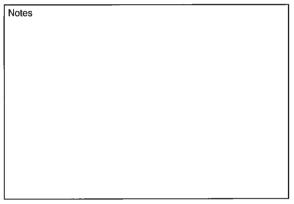




Notes	









Driving Forces

- Worldwide recessionary economy
- Information Society
- Shifting information technology foundation
- Expanding role of general management

WM-99a

Notes	



Driving Forces

- Integrated solutions
- Industry-specific solutions
- International standards
- Information services vendor capabilities

WM-99b INPUT

Notes	



Market Considerations

- Total potential 3 to 4 times current size
- Worldwide vendor capabilities becoming critical

WM-101a INPUT

Notes		



Market Considerations

- Larger vendors increasing market share
- Outsourcing favoring larger vendors
- Revolutions will cause the unexpected

WM-101b

Notes	

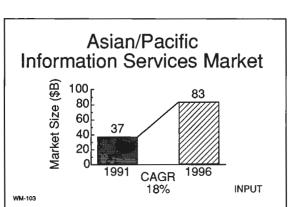


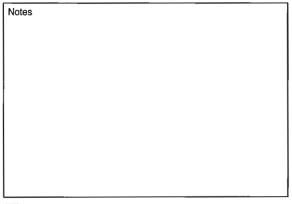
Asia/Pacific

WM-102

INPUT









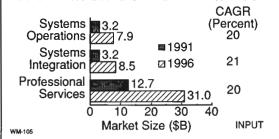
Asian/Pacific Information Services Market CAGR Processing 6.4 (Percent) 10.2

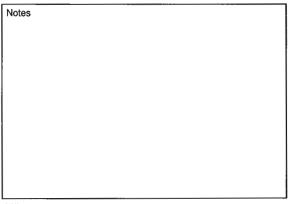
0 10 20 30 40 Market Size (\$B)

Market Size (\$B) INPUT

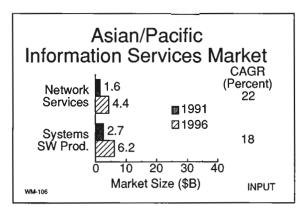


Asian/Pacific Information Services Market











Asia/Pacific

Market Considerations

- Many small markets
- One large market—Japan
- Local representation mandatory
- · Language issue for software
- Copyright exposures
- Australia/New Zealand more open INPUT

WM-107

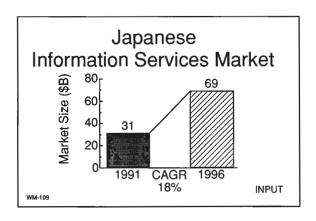
Notes	



WM-109

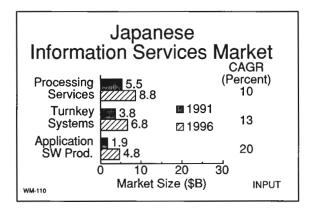
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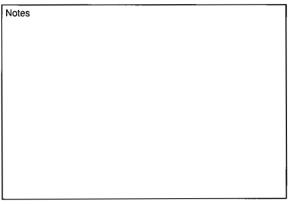




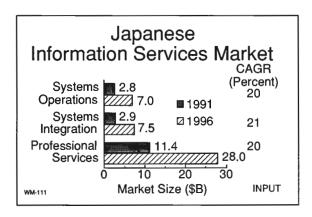
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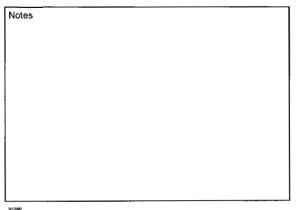




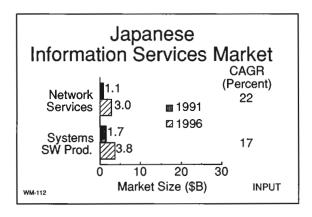


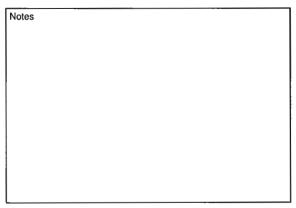














Leading Information Services Vendors, 1991

Vendor	Revenue (\$B)	Market Share (%)
NTT Data	2.9	8
Nomura Res. Inst.	1.0	2
Hitachi Info. Sys.	0.8	2
	'	INPUT

WM-113a

Notes	

Leading Information Services Vendors, 1991

Vendor	Revenue (\$B)	Market Share (%)
CSK	0.7	2
Hitachi SW Engr.	0.7	2
Japan Res. Inst.	0.6	2

WM-113b INPUT

Notes	

Leading Information Services Vendors, 1991

Vendor	Revenue (\$B)	Market Share (%)
Quick	0.55	2
Toyo Info. Sys.	0.5	1
INTEC	0.5	1

WM-113c INPUT

Notes			



Driving Forces

- Global market objectives
- · Increasing competition
- · Increased interest in outsourcing
- Government policies
- New competitors

WM-114

INPUT

otes	



WM-115

Inhibiting Factors

- Very large systems projects
- Software development capabilities
- Trade friction
- Language
- Protectionism

Notes		

3/12/92

INPUT

Market Considerations

- Long-term investment required
- Japan-specific products needed
- Value-added products essential
- Unique personal computers
- Use distributor approach

INPUT

Notes	

Canada

Leading Information Services Vendors, 1991

	Vendor	Market Share (%)	
	IBM	>10	
	ISM	>6	
	DEC	>4	
	SHL	>3	
WM-117		1	INPUT

Notes			

Canada

Leading Information Services Vendors, 1991

Vendor	Market Share (%)		
Andersen	<2		
CGI	<2		
DMR	<2		

INPUT

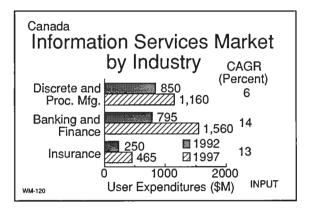
Notes		

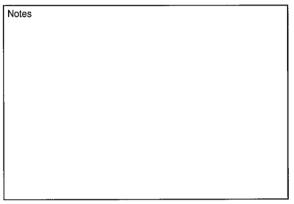
Canada

Leading Information Services Vendors, 1991

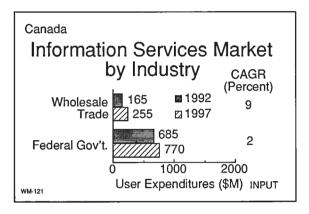
Vendor	Market Share (%)		
EDS	<2		
IST	<2		
LGS	<2		

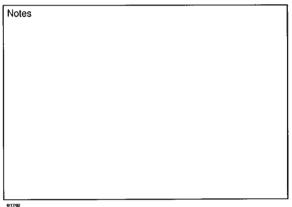
WM-119 INPUT

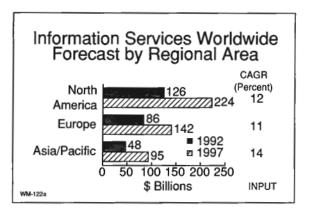


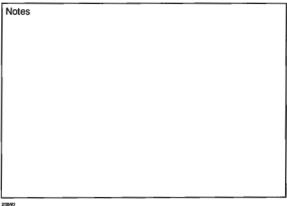


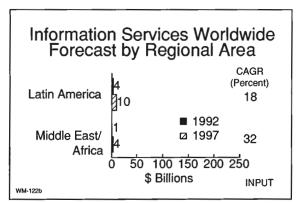


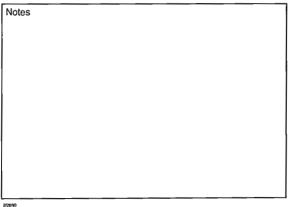


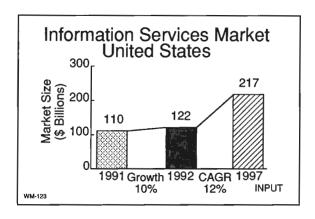


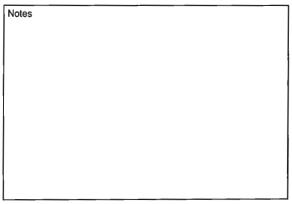














Worldwide Expenditures 1992-1997

Category	1992 (\$B)	1997 (\$B)	CAGR (%)
People	345	420	4
Hardware	180	200	2
Data Commun.	30	65	15
SW Products & Turnkey Sys.	110	195	12
			INPUT

WM-124a

Notes			
		_	



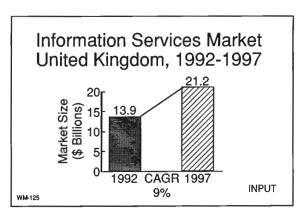
Worldwide Expenditures 1992-1997

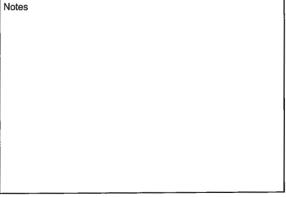
Category	1992 (\$B)	1997 (\$B)	CAGR (%)
Other Info. Svcs.	155	280	12
Equipment Svcs.	40	55	7
Facilities and Overhead	100	125	5
Total (Rounded)	965	1,340	7

WM-124b

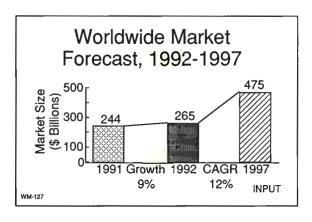
Notes		

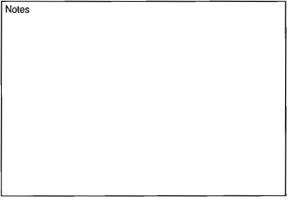
INPUT













Worldwide Information Technology Expenditures, 1992-1997						
Category 1992 1997 92-97 (\$B) (\$B) CAGR (%)						
People	346	421	4			
Hardware	180	198	2			
Data Comm.	32	65	15			
SW Products and Turnkey Systems 108 193 12 INPUT						

Notes			



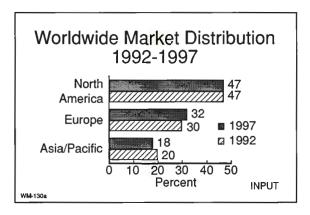
Worldwide Information Technology Expenditures, 1992-1997

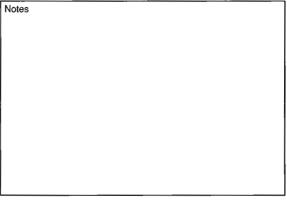
Category	1992	1997	92-97
Calegory	_(\$B)_	(\$B)	CAGR (%)
Other Info. Svcs.	157	281	12
Equipment Svcs.	41	57	7
Facilities and Overhead	99	126	5
Total	963	1,342	7

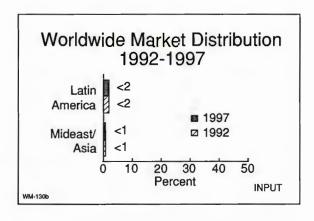
WM-128c

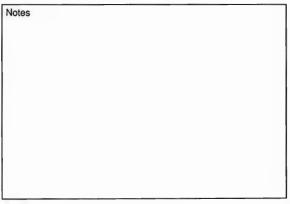
Notes		













Worldwide Market Forecast—Leading Countries

	1992	2	1997		
		Total		Total	
Country	\$ Billions	(%)	\$ Billions	(%)	
U.S.	122	46	218	46	
Japan	41	16	78	16	
France	20	8	34	7	
Germany	17	6	32	7	
****				INPUT	

Notes	-		

Worldwide Market Forecast—Leading Countries

	1992	2	1997		
Country	\$ Billions	Total (%)	\$ Billions	Total (%)	
U.K. Other Countries	14 51	5 19	22 91	5 19	
Total	265	100	475	100	

INPUT

Notes		

