Electronic Data Interchange

The Application-to-Application Exchange
of Intercompany Business Data
in Standard Formats

INPUT

NOTES:

JJ88-VW1-1

Varieties of EDI

Mainline -	Purchasing Logistics EFT + Data
EMCS/ECS -	Medical Claims
Interface -	Insurance

INPUT

NOTES:

JJ88-VW1-2

EDI—The Year Past

- One Service Drop-Out
- One Service Re-Entry
- Multiple Service/Software Entries

INPUT

NOTES:

JJ88-VW1-3

EDI—The Year Past

Observations

EDI as Religion

"Missionary Sell"

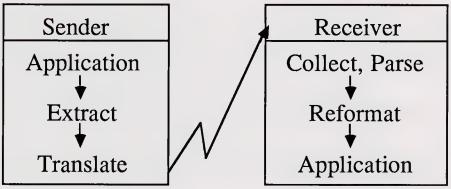
Dedicated Volunteers

INPUT

NOTES:

JJ88-VW1-4

EDI/Application Integration

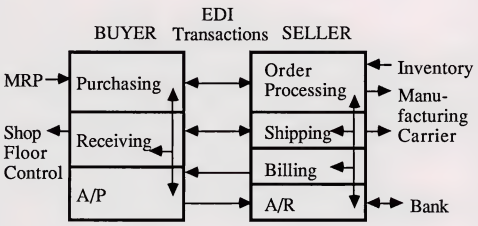


INPUT

NOTES:

JJ88-VW1-5

EDI/Application Integration



INPUT

NOTES:

JJ88-VW1-6

EDI Stimulated Development

$ 44 K ($3,000—$250,000)

10 Months (2 Weeks—3 Years)

INPUT

NOTES:

JJ88-VW1-7

EDI/Application Integration

- Affects Many Departments
- Top Management Needs to Set Corporate Goals
- Task Force Approach Required

INPUT

NOTES:

JJ88-VW1-8

EDI/Application Integration

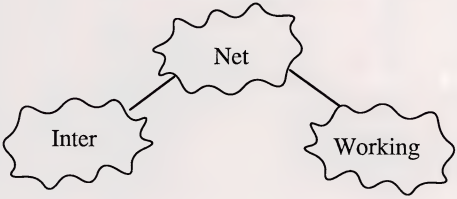
- P.S. Firms Can Assist
- EDI a Starting Point for Total Operational Improvements

INPUT

NOTES:

JJ88-VW1-9

EDI Intertrend #2



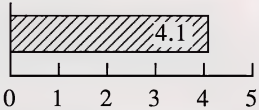
INPUT

NOTES:

JJ88-VW1-10

Internetworking

Importance



30% Use Multiple Nets

INPUT

NOTES:

JJ88-VW1-11

EDI Intertrends #3

INPUT

NOTES:

JJ88-VW1-12

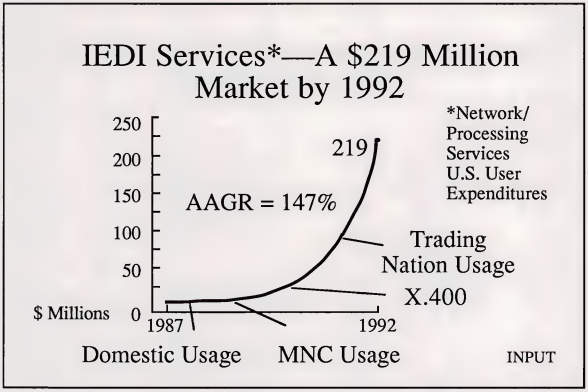
EDI Internationalization

- North America
- Australia
- Hong Kong
- Korea
- Europe
- New Zealand
- Singapore
- etc.

INPUT

NOTES:

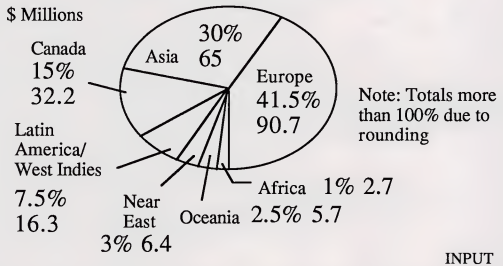
JJ88-VW1-13



NOTES:

JJ88-VW1-14

U.S. Users' Expenditures for IEDI by Trade Region 1992



INPUT

NOTES:

JJ88-VW1-15

EDI Case Study

Levi-Strauss

INPUT

JJ88-VW1-I6

Levi-Strauss

- 17,000 Retailers—200,000 Stores
- Retail Electronic Services—
  a Marketing Group
- Also Responsible for Supplier EDI

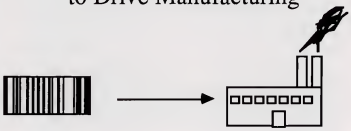
INPUT

JJ88-VW1-17

Levi-Strauss

Key Concept:

Capture POS Data to Drive Manufacturing



INPUT

JJ88-VW1-18

Levi-Strauss

Retail Services:

- Sell Through Analysis and Reporting System (STARS)
- Model Stock Management
- Retailer EDI (REDI)
- Purchase Order Reconciliation

INPUT

JJ88-VW1-19

Levi-Strauss

Benefits:

- Improved Turns
- Fewer Stock Outs
- Enhanced Retailer Relations

INPUT

JJ88-VW1-20

EDI Case Study

First National Bank of Chicago

INPUT

JJ88-VW1-21

First Chicago

President's Mandate:

"We Will Do EDI"

- Purchasing
- Potential Service

INPUT

JJ88-VW1-22

First Chicago

1985: No Supplier Was Ready

So: Loaned Software
Underwrote Costs
Free Training & Installation

INPUT

JJ88-VW1-23

First Chicago

Cost Benefit Analysis (1985):

Would Cost More—Not Less

- Dual Systems
- But Costs have Moderated

INPUT

JJ88-VW1-24

First Chicago

Implementation

- 65 Staff on Project
- "Bilingual" Users' Guide
- 25–Point Software and Network Evaluation

INPUT

JJ88-VW1-25

First Chicago

Transactions

	Electronic	Paper
1986	1,200	1 million
1987	4,800	
1988	20,000	50,000

INPUT

JJ88-VW1-26

First Chicago

Benefits

- $2.5 Million in Annual Savings
- Enhanced Control/Monitoring—
  "Everything By Registered Mail"
- Experience Applied to EDI Services

INPUT

JJ88-VW1-27

EDI Case Study

Hewlett Packard

INPUT

JJ88-VW1-28

H-P

- 56 Plants in 15 Countries
- Decentralized ⟶ Integrated
- Entrepreneurial/Complex

INPUT

JJ88-VW1-29

H-P

EDI Approach

Steering Committee	-Policies
EDI Central	-Technical
Business Units	-Unit Interfaces
	-Implementation
	Partner Relations

INPUT

JJ88-VW1-30

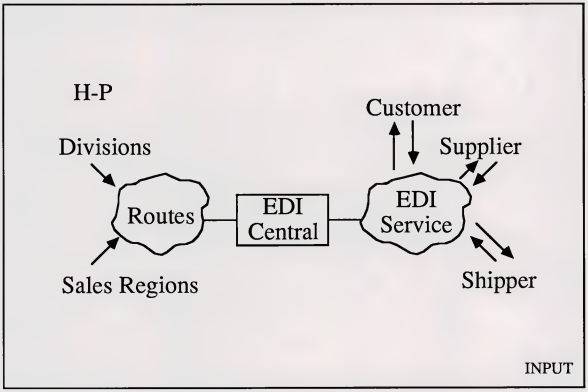
H-P

EDI Goals

- Industry Leader
- Improve Customer Satisfaction
- "One Company" Image
- Eliminate Duplication

INPUT

JJ88-VW1-31



JJ88-VW1-32

H-P

Recommendations

- Centralize Approach through Steering Committee
- Participate in Standards Groups
- Watch Secondary and Third-Order Issues
- "Spread the Gospel"

INPUT

JJ88-VW1-33

EDI/Sales Side

Sales Staff Issues

- Fear of Change
- Compensation Issues

INPUT

NOTES:

JJ88-VW1-34

EDI/Sales Side

Sales Staff Issues

Management Response:

EDI Sales Policy

INPUT

NOTES:

JJ88-VW1-35

EDI/Sales Side

EDI Sales Policy

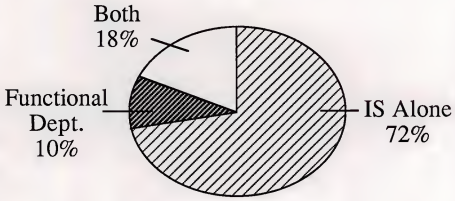
- Feedback
- Less Paperwork
- More Contact
- More Development
- Compensation

INPUT

NOTES:

JJ88-VW1-36

Who Implements EDI
(EDI Managers)

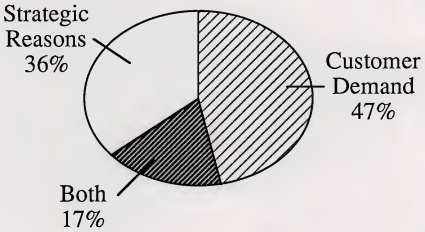


INPUT

NOTES:

JJ88-VW1-38

Why Was EDI Implemented?

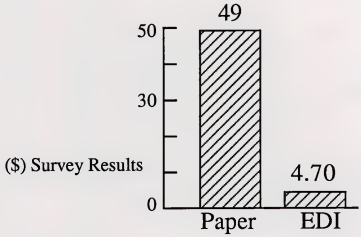


INPUT

NOTES:

JJ88-VW1-37

Paper versus Electronic Transactions

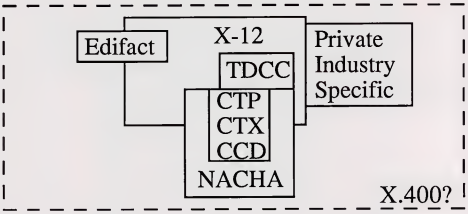


INPUT

NOTES:

JJ88-VW1-39

EDI Standards Relationships



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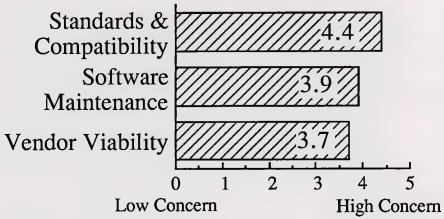
NOTES:

JJ88-VW-40

EDI User Issues and Concerns



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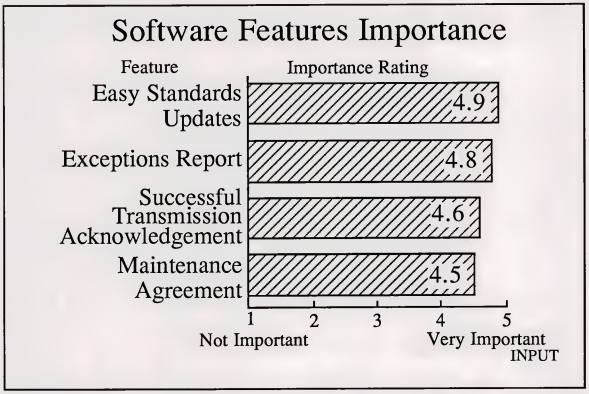
NOTES:

JJ88-VW1-41

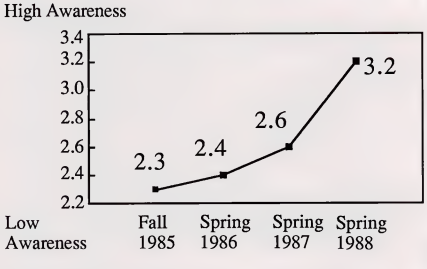


NOTES:

JJ88-VW1-42

Forecast Factors

EDI Awareness Is Growing



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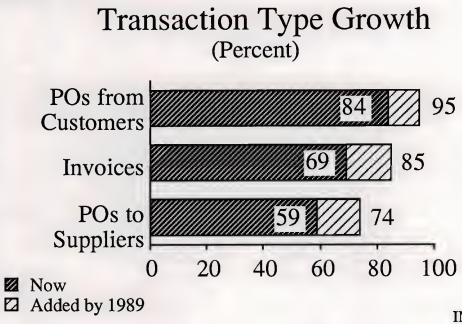
NOTES:

JJ88-VW1-43

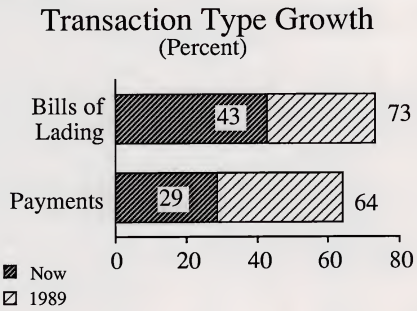
Forecast Factors



NOTES:

JJ88-VW1-44

Forecast Factors

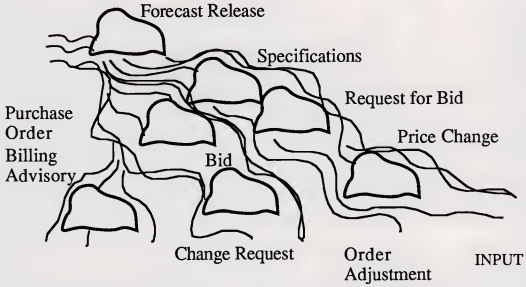


INPUT

NOTES:

JJ88-VW1-45

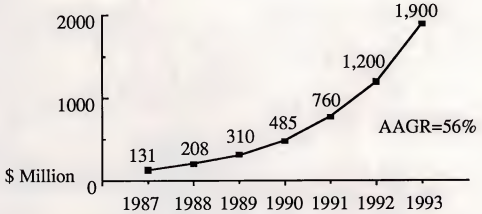
The Cascade Effect



NOTES:

JJ88-VW1-46

EDI Market Forecast



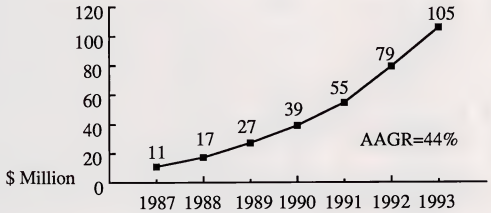
Network/Processing Services, Software, Professional Services, Federal and Commercial Markets

INPUT

NOTES:

JJ88-VW1-47

Commercial EDI Software Market



Excludes EMC, Interface

INPUT

NOTES:

JJ88-VW1-48

EDI Software Market

Market "Leadership" up for Grabs

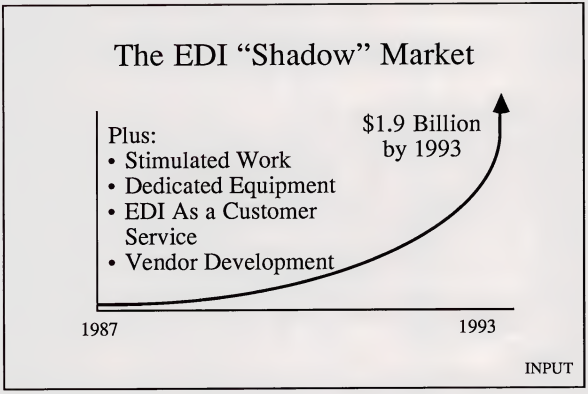
Non IBM Platforms Being Addressed
- DEC, HP, OLTP

The Professional Services Opportunity

INPUT

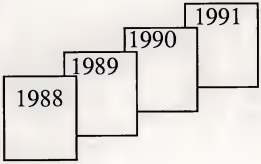
NOTES:

JJ88-VW1-49



JJ88-VW1-50

EDI—The Years Ahead

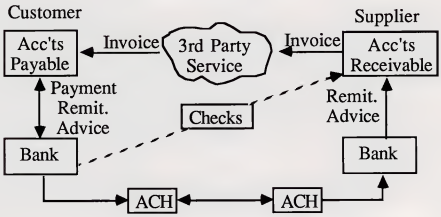


INPUT

NOTES:

JJ88-VW1-51

Banks in EDI



INPUT

NOTES:

JJ88-VW1-52

EDI Intertrend #4

Standards

Interfusion

INPUT

NOTES:

JJ88-VW1-53

EDI—The Year(s) Ahead

Services—New Entrants

- ADP
- NDC
- BOCs
- EDS

"Secondary" Players Find Niches

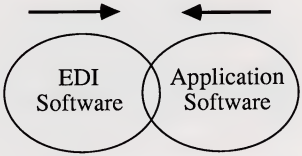
INPUT

NOTES:

JJ88-VW1-54

EDI Opportunities

Software



Tighter Integration

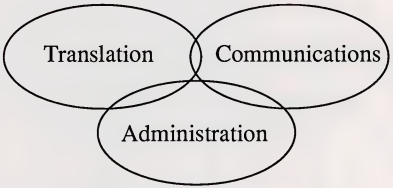
INPUT

NOTES:

JJ88-VW1-55

EDI Opportunities

Software



Tighter Integration

INPUT

NOTES:

JJ88-VW1-56

EDI Opportunities

Professional Services

- Large Projects
- EDI-Stimulated Development
- Internal Bridging
- EDI as Customer Service

INPUT

NOTES:

JJ88-VW1-57

EDI Opportunities

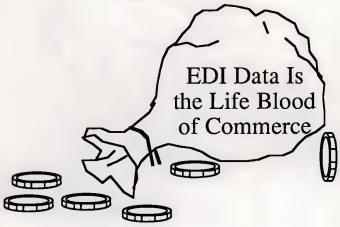
Network Services

- Untapped/Underdeveloped Markets
- Current Customer Development
- Value-Added Services

INPUT

NOTES:

JJ88-VW1-58



INPUT

NOTES:

JJ88-VW1-59

Electronic Data Interchange

Victor Wheatman
Manager, EDI Program

INPUT

INPUT

Electronic Data Interchange

Victor Wheatman

Manager, EDI Program

INPUT

Electronic Data Interchange

The Application-to-Application Exchange
of Intercompany Business Data
in Standard Formats

INPUT

NOTES:

ECON-VW-6

6

Varieties of EDI

Mainline -	Purchasing Logistics EFT + Data
EMCS/ECS -	Medical Claims
Interface -	Insurance

INPUT

NOTES:

ECON-VW-7

2

7

EDI—The Year Past

- One Service Drop-Out
- One Service Re-Entry
- Multiple Service/Software Entries

INPUT

NOTES:

ECON-VW-1a

3

EDI—The Year Past

Observations

EDI as Religion

"Missionary Sell"

Dedicated Volunteers

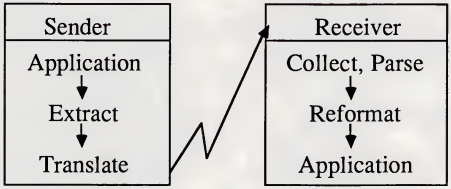
INPUT

NOTES:

ECON-VW-4

4

EDI/Application Integration



INPUT

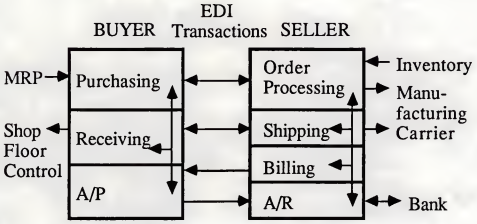
NOTES:

ECON-VW-9

5

9

EDI/Application Integration



INPUT

NOTES:

ECON-VW-10

10

6

EDI Stimulated Development

$ 44 K ($3,000—$250,000)

10 Months (2 Weeks—3 Years)

INPUT

NOTES:

ECON-VW-11

EDI/Application Integration

- Affects Many Departments
- Top Management Needs to Set Corporate Goals
- Task Force Approach Required

INPUT

NOTES:

ECON-VW-12

12

8

EDI/Application Integration

- P.S. Firms Can Assist
- EDI a Starting Point for Total Operational Improvements

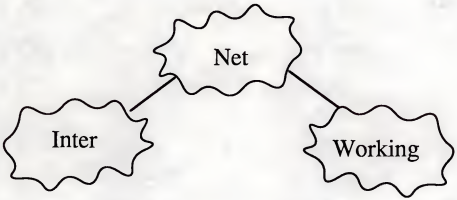
INPUT

NOTES:

ECON-VW-12a

9

EDI Intertrend #2



INPUT

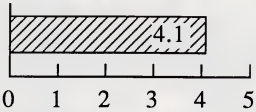
NOTES:

ECON-VW-16

10

Internetworking

Importance



30% Use Multiple Nets

INPUT

NOTES:

ECON-VW-18

11

EDI Intertrends #3

INPUT

NOTES:

ECON-VW-23

12

EDI Internationalization

- North America
- Australia
- Hong Kong
- Korea
- Europe
- New Zealand
- Singapore
- etc.

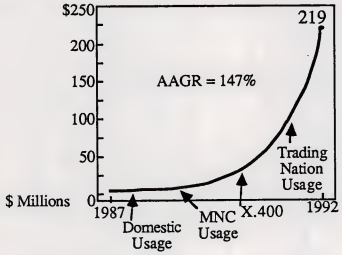
INPUT

NOTES:

ECON-VW-24

13

IEDI Services*—A $219 Million Market by 1992



*Network/ Processing Services

U.S. User Expenditures

INPUT

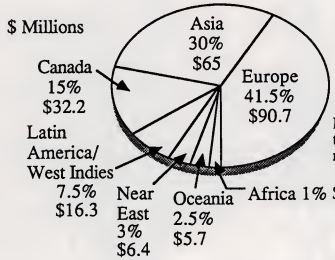
NOTES:

ECON-AG-10

14

remove $
make → = —

U.S. Users' Expenditures for IEDI by Trade Region 1992



14p

Note: Totals more than 100% due to rounding

INPUT

NOTES:

ECON-AG-28

15

EDI CASE STUDY

LEVI-STRAUSS

INPUT

USM1-VW-21

16

Levi-Strauss

- 17,000 Retailers—200,000 Stores
- Retail Electronic Services—
  a Marketing Group
- Also Responsible for Supplier EDI

INPUT

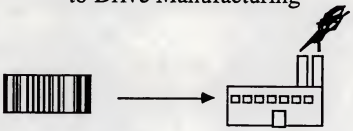
USM1-VW-22

17

Levi-Strauss

Key Concept:

Capture POS Data to Drive Manufacturing



INPUT

USM1-VW-23

18

Levi-Strauss

Retail Services:

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- Retailer EDI (REDI)
- Purchase Order Reconciliation

INPUT

USM1-VW-24

19

Levi-Strauss

Benefits:

- Improved Turns
- Fewer Stock Outs
- Enhanced Retailer Relations

INPUT

USM1-VW-25

20

EDI CASE STUDY

FIRST NATIONAL BANK OF CHICAGO

INPUT

USM1-VW-26

21

First Chicago

President's Mandate:

"We Will Do EDI"

- Purchasing
- Potential Service

INPUT

USM1-VW-27

22

First Chicago

1985: No Supplier Was Ready

So: Loaned Software
Underwrote Costs
Free Training & Installation

INPUT

USM1-VW-28

23

First Chicago

Cost Benefit Analysis (1985):

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- Dual Systems
- But Costs have Moderated

INPUT

USM1-VW-29

24

First Chicago

Implementation

- 65 Staff on Project
- "Bilingual" Users' Guide
- 25–Point Software and Network Evaluation

INPUT

USM1-VW-30

25

First Chicago

Transactions

	Electronic	Paper
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1988	20,000	50,000

INPUT

USM1-VW-31

First Chicago

Benefits

- $2.5 Million in Annual Savings
- Enhanced Control/Monitoring—
  "Everything By Registered Mail"
- Experience Applied to EDI Services

INPUT

USM1-VW-32

27

EDI CASE STUDY

HEWLETT PACKARD

INPUT

USM1-VW-33

28

H-P

- 56 Plants in 15 Countries
- Decentralized → Integrated
- Entrepreneurial/Complex

INPUT

USM1-VW-34

H-P

EDI Approach

Steering Committee	-Policies
EDI Central	-Technical
Business Units	-Unit Interfaces
	-Implementation
	Partner Relations

INPUT

USM1-VW-35

30

H-P

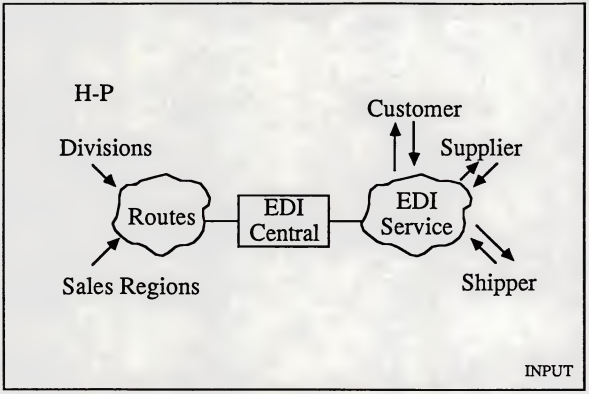
EDI Goals

- Industry Leader
- Improve Customer Satsifaction satisfaction
- "One Company" Image
- Eliminate Duplication

INPUT

USM1-VW-36

31



USM1-VW-37

32

H-P

Recommendations

- Centralize Approach through Steering Committee
- Participate in Standards Groups
- Watch Secondary and Third-Order Issues
- "Spread the Gospel"

INPUT

USM1-VW-38

33

EDI/Sales Side

Sales Staff Issues

- Fear of Change
- Compensation Issues

INPUT

NOTES:

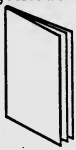
EQAD-GE-3

34

EDI/Sales Side

Sales Staff Issues

Management Response:



EDI Sales Policy

INPUT

NOTES:

EQAD-GE-4

35

EDI/Sales Side

EDI Sales Policy

- Feedback
- Less Paperwork
- More Contact
- More Development
- Compensation

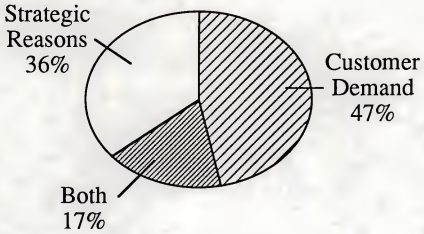
INPUT

NOTES:

EQAD-GE-5

36

Why Was EDI Implemented?



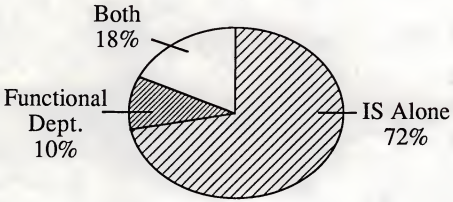
INPUT

NOTES:

ECON-VW-26

37

Who Implements EDI
(EDI Managers)



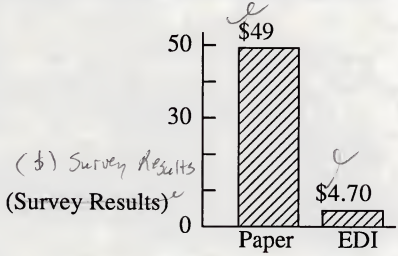
INPUT

NOTES:

ECON-VW-27

38

Paper versus Electronic Transactions



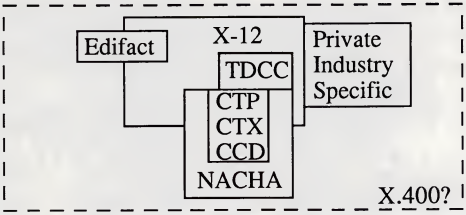
INPUT

NOTES:

ECON-VW-28

39

EDI Standards Relationships



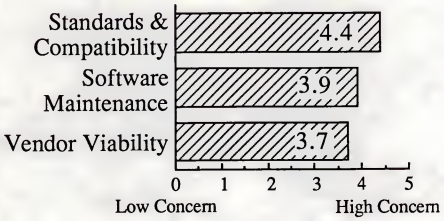
INPUT

NOTES:

ECON-VW-29

40

EDI User Issues and Concerns

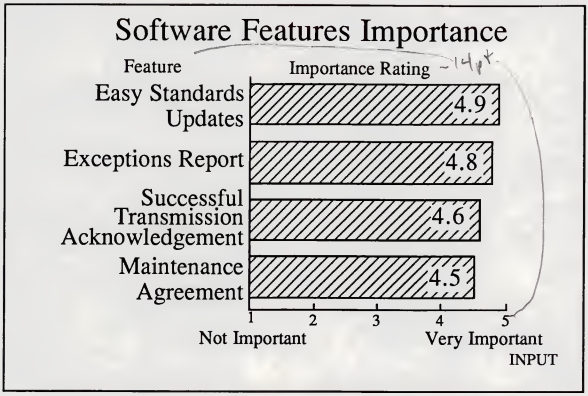


INPUT

NOTES:

ECON-VW-30

41



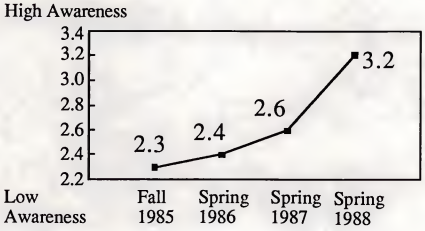
NOTES:

ECON-VW-34

42

Forecast Factors

EDI Awareness Is Growing



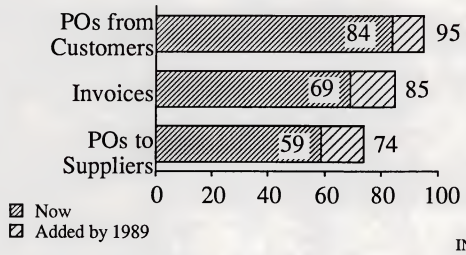
INPUT

NOTES:

ECON-VW-36

43

Forecast Factors



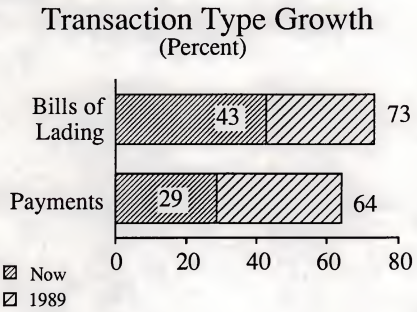
INPUT

NOTES:

ECON-VW-39

44

Forecast Factors

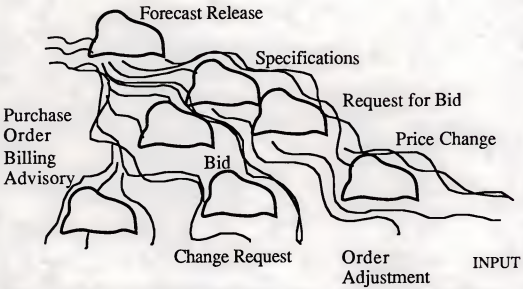


NOTES:

ECON-VW-40

45

The Cascade Effect

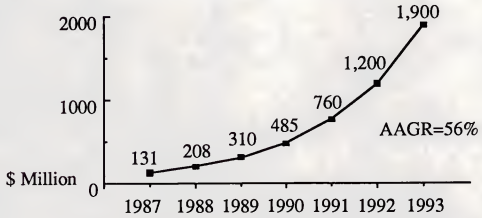


NOTES:

ECON-VW-41

46

EDI Market Forecast



Network/Processing Services, Software, Professional Services, Federal and Commercial Markets

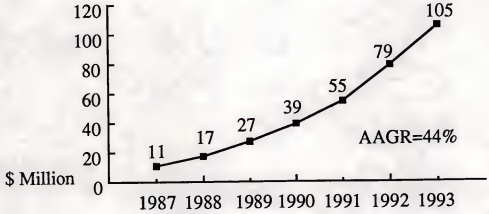
INPUT

NOTES:

ECON-VW-43

47

Commercial EDI Software Market



Excludes EMC, Interface

INPUT

NOTES:

ECON-VW-46

43

EDI Software Market

Market "Leadership" up for Grabs

Non IBM Platforms Being Addressed
- DEC, HP, OLTP

The Professional Services Opportunity

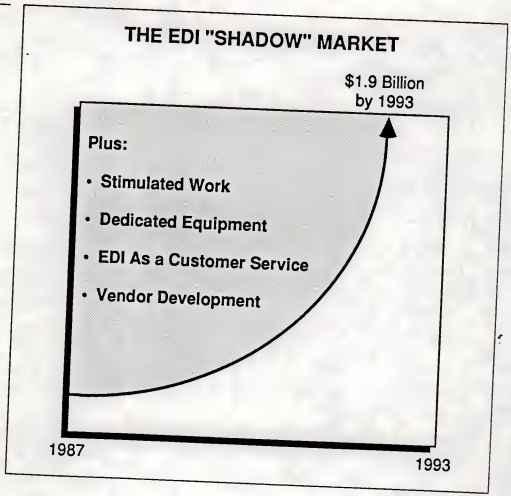
INPUT

NOTES:

ECON-VW-47

49

EXHIBIT VI-12



C

Forecast Reconciliation

Exhibit VI-13 shows the differences between the current forecast and INPUT's 1987 EDI forecast.

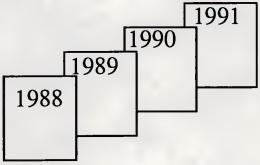
The current forecast shows a higher present market sizing and maintains a substantial average annual growth rate throughout the forecast period, but at a lower level than previously forecast. There are several reasons for this change:

- The current federal EDI market was previously undersized. However, based on INPUT's analysis of federal agency budget requests, the federal market will exhibit a lower growth rate than the commercial market. This suppresses the overall market's growth pattern.

- A preliminary examination of trends in the electronic medical claims and batch insurance interface varieties of EDI suggest an average annual growth rate of 30-40%. While respectable, this also suppresses the overall market's pattern. Note also that INPUT has not sized EMC or Interface software, nor professional service activities in this area.

50

EDI—The Years Ahead



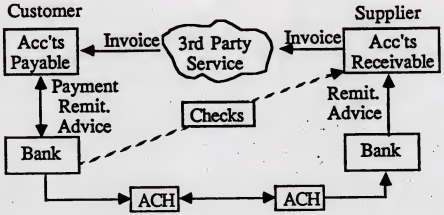
INPUT

NOTES:

ECON-VW-48

51

Banks in EDI



INPUT

NOTES:

EQAD-GE-15

52

EDI Intertrend #4

Standards

Interfusion

INPUT

NOTES:

ECON-VW-49

53

EDI—The Year(s) Ahead

Services—New Entrants

- ADP
- NDC
- BOCs
- EDS

"Secondary" Players Find Niches

INPUT

NOTES:

ECON-VW-55

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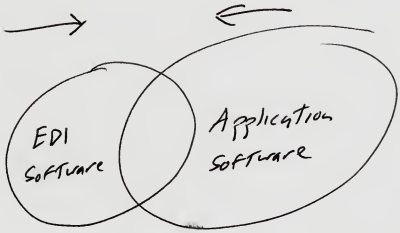
EDI OPPORTUNITIES

SOFTWARE

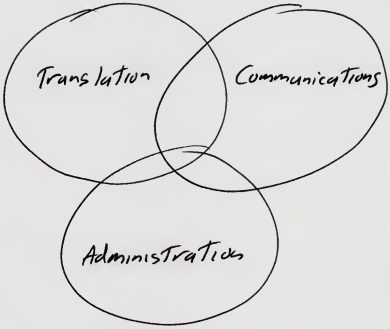


[even size]

TIGHTER INTEGRATION

EDI OPPORTUNITIES

SOFTWARE



TIGHTER INTEGRATION

EDI OPPORTUNITIES

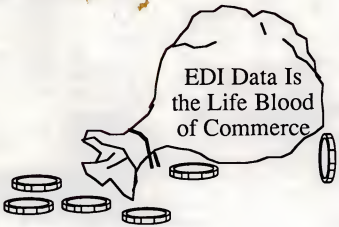
PROFESSIONAL SERVICES

- LARGE PROJECTS
- EDI STIMULATED DEVELOPMENT
- INTERNAL BRIDGING
- EDI as CUSTOMER SERVICE

EDI OPPORTUNITIES

Network SERVICES

- Untapped / Underdeveloped Markets
  - ~~Mortgage Banking~~
  - ~~Insurance~~
  - ~~Fresh Foods~~
  - ~~Localized Services~~
- Current Customer Development
- VALUE ADDED SERVICES



INPUT

NOTES:

ECON-VW-56

59