EDI—The Next Generation

Victor S. Wheatman
Manager, EDI Program—U.S.
INPUT

EDI—The Year Past

Observations

EDI as Religion

"Missionary Sell"

Dedicated Volunteers

INPUT

Varieties of EDI

Mainline - Purchasing
Logistics
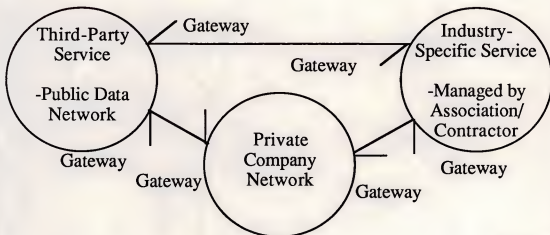EFT + Data

EMCS/ECS - Medical Claims

Interface - Insurance
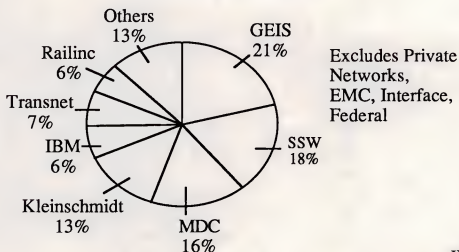
NOTES:

ECO4-VW1-2

Three Types of EDI Networks

Third-Party Service
-Public Data Network

Gateway

Industry-Specific Service
-Managed by Association/Contractor

Gateway

Private Company Network

Gateway

Gateway

Gateway

Gateway

INPUT

NOTES:

ECO4-VW1-3

INPUT

EDI Network/Processing Service Market Shares

Others 13%
Railinc 6%
Transnet 7%
IBM 6%
Kleinschmidt 13%
GEIS 21%
SSW 18%
MDC 16%

Excludes Private Networks, EMC, Interface, Federal

INPUT

NOTES:

ECO4-VW1-4

INPUT

GEIS

- Aggressive
- Worldwide Alliances, Agents
- EDI/PETROEX
- Design ✕ Express

NOTES:

ECO4-VW1-5

SSW Ordernet

- Grocery
- Hard Goods
- Logistics

- Drugs, Med/Surg
- Service Merchants
- Software

Telenet

NOTES:

ECO4-VW1-6

McDonnell Douglas EDI*Net

- Grocery
- Software Certification
- EDI II—Delayed
- "The Family Jewels"

- Logistics
- Cross Industry

NOTES:

INPUT

IBM

- Information Network—SNA

- Intercontinental Services

- Internal Use

- Insurance, Health Care,
  Electronics, Retail, Etc.

- ExpEDIte Family

NOTES:

ECO4-VW1-8

AT&T

- ~~Net 1000~~
- AT&T Mail—X.400 EDI
- CDC—RediAccess
- Turnkey Systems—RIVET

NOTES:

ECO4-VW1-9

<u>The Year Past</u>

Service Entries

- AT&T

- Compuserve

- Martin Marietta

- Western Union

- Sears

NOTES:

ECO4-VW1-10

INPUT

EDI—The Year(s) Ahead

Services—New Entrants
- ADP
- NDC
- BOCs
- EDS

"Secondary" Players Find Niches

NOTES:

ECO4-VW1-11

INPUT

Harbinger

- Low Cost PC Software

- Interconnect through Harbinger's Network

- Sold to Small Suppliers of Large Companies
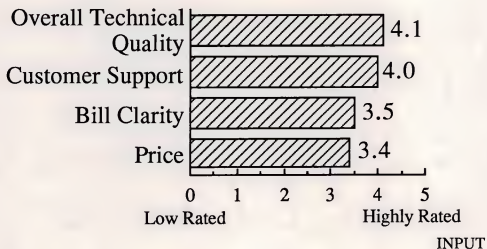
- Adding EDI/EFT Services

INPUT

NOTES:

ECO4-VW1-12
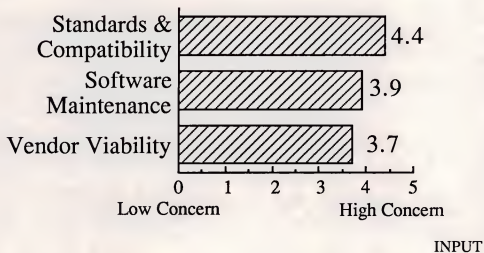
INPUT

User Rating—Third-Party Networks
Averages—All Networks

Category	Rating
Overall Technical Quality	4.1
Customer Support	4.0
Bill Clarity	3.5
Price	3.4

0   1   2   3   4   5

Low Rated   Highly Rated

INPUT

NOTES:

ECO4-VW1-13

INPUT

EDI User Issues and Concerns

Issue	Score
Standards & Compatibility	4.4
Software Maintenance	3.9
Vendor Viability	3.7

0 1 2 3 4 5
Low Concern — High Concern

INPUT

NOTES:

ECO4-VW1-14

INPUT

EDI User Issues and Concerns

Network/Data Security	3.6
Changing Business Practices	3.6
Entire System	3.4
Actions of Competitors	3.3

Low Concern 0 1 2 3 4 High Concern
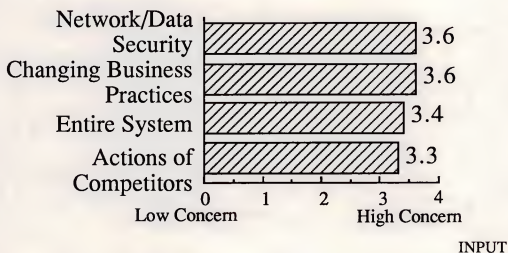
NOTES:

ECO4-VW1-15

Software Entries

The "Majors": ASK, Pansophic, M+D Join MSA

The "Minors": Too Many to Mention

Missing: ~~Apple Software~~

INPUT
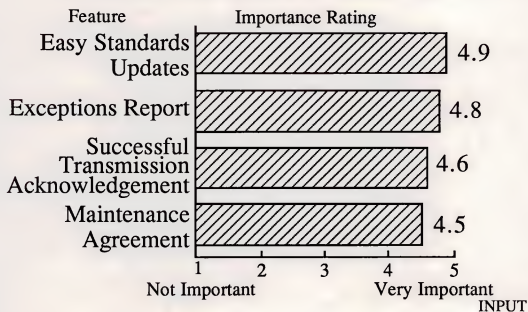
NOTES:

ECO4-VW1-16

INPUT

Software Features Importance

Feature	Importance Rating
Easy Standards Updates	4.9
Exceptions Report	4.8
Successful Transmission Acknowledgement	4.6
Maintenance Agreement	4.5

1 = Not Important 5 = Very Important

INPUT

NOTES:

ECO4-VW1-17

INPUT

Leading EDI Software

- GEIS
- TranSettlements
- MSA
- ACS

- SSW/Ordernet
- EDI, Inc.
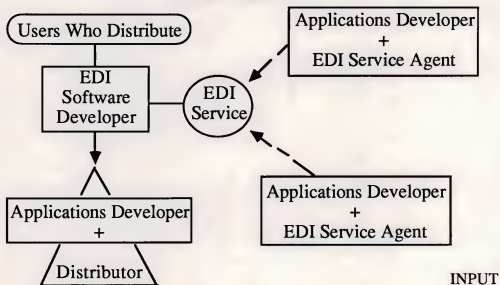- Metro-Mark
- Supply Tech

NOTES:

ECO4-VW1-18

Participants are Forming Alliances

- Users Who Distribute
- EDI Software Developer
- EDI Service
- Applications Developer + EDI Service Agent
- Applications Developer + Distributor
- Applications Developer + EDI Service Agent

INPUT

NOTES:

ECO4-VW1-19

INPUT

EDI In Discrete Manufacturing

Segment	Activity Summary
Auto	EDI Essential to Reduce Costs; "Big 3" Private Nets moving to Public Standards
Electronics	EDX Conforms to X12

INPUT

ECO4-VW1-20

INPUT

EDI In Discrete Manufacturing

Segment	Activity Summary
Telecommuni-cations Equipment	TCIF Just Starting - Promoting X12 and Bar Coding
Apparel	EDI Tied to "Crafted with Pride in the USA"

ECO4-VW1-21

EDI In Process Manufacturing

Segment	Activity Summary
Oil/Gas	COPAS Integrating EDI; Working on Unique Needs
Chemicals	CIDX Used by 30+ Companies

INPUT

ECO4-VW1-22

INPUT

EDI In Process Manufacturing

Segment	Activity Summary
Paper Products	EMLINK on GEISCO - Trade Association Product
Metals	Growing List of ANSI Product Code Descriptors

INPUT

ECO4-VW1-23

INPUT

EDI In Distribution

Segment	Activity Summary
Groceries	UCS Used by Most Large Firms
Office Products	Industry Association Project (ICOPS) Used by 40 Wholesalers, Large Dealers, and Manufacturers

ECO4-VW1-24

EDI In Distribution

Segment	Activity Summary
Warehousing	WINS Standard is Similar to UCS
General	Large Distributors and Mass Merchandisers (McKesson, K-Mart) Using Private Networks

INPUT

ECO4-VW1-25

INPUT

EDI In Transportation

Segment	Activity Summary
Rails	Large Companies Using Private Systems, Industry Association RCS, and Kleinschmidt
Trucking	60-200 Firms Using EDI
Ocean	U.S. Customs Promoting EDI to Cut Paperwork

INPUT

ECO4-VW1-26

INPUT

EDI In Medical
Products And Services

Segment	Activity Summary
Medical Supplies	Captive Systems Best Known: AHS
Optometry	TOP Network Helping Independents Compete Against Retail Chains

INPUT

ECO4-VW1-27

INPUT

EDI In Medical
Products And Services

Segment	Activity Summary
Pharmaceuticals	Wholesalers Active for 15 Years; Proprietary Standards Migrating to X12 for Entire Industry

INPUT

ECO4-VW1-28

INPUT

EDI In Services

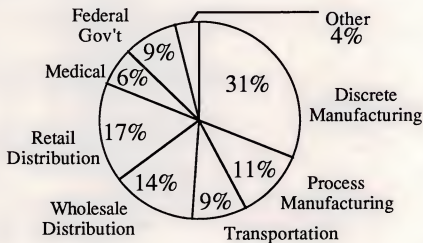| Segment	Activity Summary
Overnight Courier	EDI Used to Improve Customer Service to High-Volume Users
Banks	Growing Interest as Users, Uncertainty as Service Providers

INPUT

INPUT

EDI In Services

Segment	Activity Summary
Health Claims	UB 82 and HCFA Formats; Growing Usage
Insurance	Industry Association Improving Interface/ Methods between Independent Agents and Carriers

INPUT

ECO4-VW1-30

INPUT

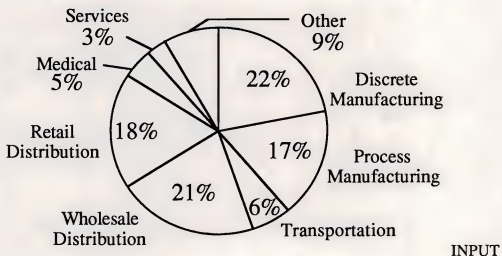# Vertical Market EDI End User Expenditures—1987 Network Services

Federal Gov't 9%

Other 4%

Medical 6%

Retail Distribution 17%

31%

Discrete Manufacturing

14%

11%

Wholesale Distribution

9%

Process Manufacturing

Transportation

INPUT

INPUT

Vertical Market EDI End User Expenditures—1993 Network Services

- Other 9%
- Discrete Manufacturing 22%
- Process Manufacturing 17%
- Transportation 6%
- Wholesale Distribution 21%
- Retail Distribution 18%
- Medical 5%
- Services 3%

INPUT

ECO4-VW1-32

INPUT

EDI CASE STUDY

LEVI-STRAUSS

ECO4-VW1-33

Levi-Strauss

- 17,000 Retailers—200,000 Stores

- Retail Electronic Services—
  a Marketing Group

- Also Responsible for Supplier EDI

ECO4-VW1-34

Levi-Strauss

Key Concept:
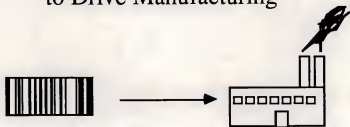
Capture POS Data
to Drive Manufacturing

INPUT

ECO4-VW1-35

INPUT

Levi-Strauss

Retail Services:

- Sell Through Analysis and Reporting System (STARS)

- Model Stock Management

- Retailer EDI (REDI)

- Purchase Order Reconciliation

ECO4-VW1-36

Levi-Strauss

Benefits:

- Improved Turns
- Fewer Stock Outs
- Enhanced Retailer Relations

ECO4-VW1-37

EDI CASE STUDY

HEWLETT PACKARD

ECO4-VW1-38

H-P

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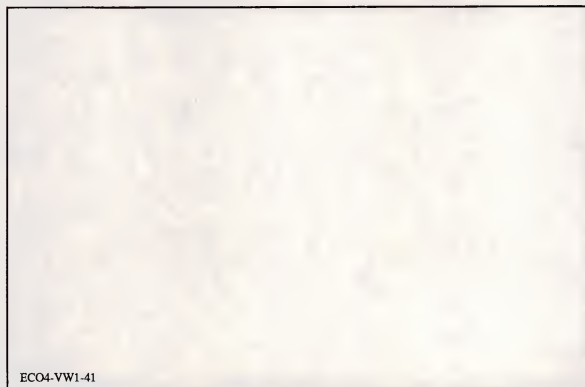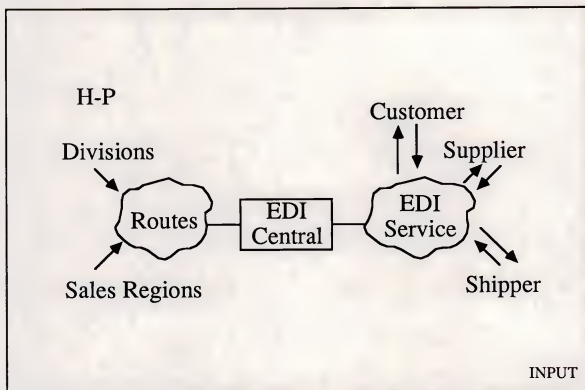- Decentralized ⟶ Integrated
- Entrepreneurial/Complex

ECO4-VW1-39

H-P

EDI Approach

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

ECO4-VW1-40

H-P

Divisions

Routes — EDI Central — EDI Service

Customer
Supplier
Shipper

Sales Regions

INPUT

ECO4-VW1-41

INPUT

H-P

EDI Goals

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

ECO4-VW1-42

H-P

Recommendations

- Centralize Approach through Steering Committee

- Participate in Standards Groups

- Watch Secondary and Third-Order Issues

- "Spread the Gospel"

ECO4-VW1-43

EDI CASE STUDY

FIRST NATIONAL
BANK OF CHICAGO

INPUT

ECO4-VW1-44

INPUT

First Chicago

President's Mandate:

"We Will Do EDI"

- Purchasing
- Potential Service

INPUT

INPUT

First Chicago

1985: No Supplier Was Ready

So: Loaned Software
Underwrote Costs
Free Training & Installation

ECO4-VW1-46

First Chicago

Cost Benefit
Analysis (1985):

Would Cost More—Not Less
- Dual Systems
- But Costs have Moderated

ECO4-VW1-47

First Chicago

Implementation

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

ECO4-VW1-48

First Chicago

Transactions

	<u>Electronic</u>	<u>Paper</u>
1986	1,200	1 million
1987	4,800	
1988	20,000	50,000

First Chicago

Benefits

- $2.5 Million in Annual Savings

- Enhanced Control/Monitoring—
  "Everything By Registered Mail"

- Experience Applied to EDI Services

ECO4-VW1-50

INPUT

Texas Instruments

- Centralized Worldwide

- T I's Own Network

- Provides "Free" Consulting

- Evaluating Graphics and Catalogs

NOTES:

ECO4-VW1-51

WESCO

- Survey Customer Inventory Levels
  → Automatic Replacement Orders

- Access Through Any Branch—
  Redistributes

- VAN or Direct

INPUT

NOTES:

ECO4-VW1-52

INPUT

IBM

- 1991 Goal—2,000 EDI Suppliers

- Save $60 Million Annually

DEC

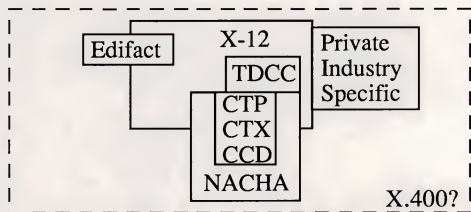- EDI Executive Committee

- Electronic Store

NOTES:

ECO4-VW1-53

EDI Standards Relationships

Edifact | X-12 | Private Industry Specific

TDCC
CTP
CTX
CCD
NACHA

X.400?

INPUT

NOTES:

ECO4-VW1-54

Standards Interfusion

Proprietary
Industry Specific $\longrightarrow$ X12

Pro: "Go with the Flow"

Con: Ease of Change

When: Now

NOTES:

ECO4-VW1-55

Standards Interfusion

UCS ◄─────► X12

Pro: Companies Now Using Both

Con: "Ain't Broke—Why Fix It?"

When: 2-5 Years

NOTES:

ECO4-VW1-56

Standards Interfusion

TDCC ◄───► X12

Pro: Would Solve Coordination
Problems

Con: Work Load Issues

When: 4-10 Years

NOTES:

Standards Interfusion

X12 ⟷ Insurance
(IIR/Acord)

Pro: Useful in Mortgage Banking,
Transportation, Others?

Con: Coordination Issues

When: 2 Years (Real Estate)

NOTES:

Standards Interfusion

X12 ⟶ Edifact 400

Pro: Edifact—"The True Faith"

Con: X.400 Cycle Is 4 Years
              Varieties of X.400?

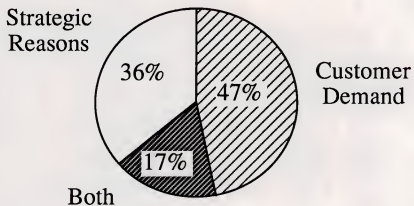When: 2-10 Years

INPUT
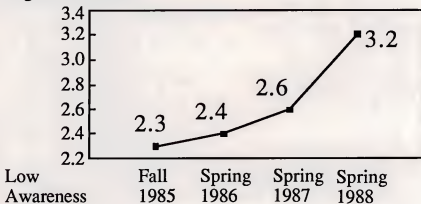
NOTES:

ECO4-VW1-59

INPUT

Why Was EDI Implemented?

- Strategic Reasons 36%
- Customer Demand 47%
- Both 17%

INPUT

NOTES:

ECO4-VW1-60

INPUT

EDI Awareness Is Growing

High Awareness

```
3.4
3.2                                              ■ 3.2
3.0
2.8                                      2.6
2.6                              ■
2.4      2.3      2.4      ■
2.2      ■        ■
```

Low   Fall   Spring   Spring   Spring
Awareness   1985   1986   1987   1988

INPUT

NOTES:

ECO4-VW1-61

INPUT

Forecast Factors

EDI Status
(IS Managers)

No Plans — 22%
Considering — 24%
Active Planning/Implementing — 20%
Now Using — 34%

INPUT

NOTES:

ECO4-VW1-62

INPUT

Transaction Growth
User's Average Response

1986-1987	1987-1988
181%	156%

INPUT

NOTES:

ECO4-VW1-63

INPUT

Transaction Type Growth
(Percent)

Bills of Lading — 43 — 73

Payments — 29 — 64

0   20   40   60   80

Now
1989

NOTES:

ECO4-VW1-64

INPUT

INPUT

Forecast Factors

Transaction Type Growth
(Percent)

POs from Customers	84 ▨ 95
Invoices	69 ▨ 85
POs to Suppliers	59 ▨ 74

0   20   40   60   80   100

▨ Now
▨ Added by 1989
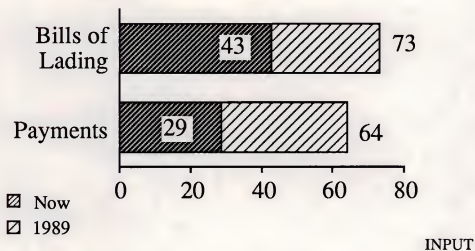
INPUT

NOTES:

ECO4-VW1-65

Number of EDI Trading Partners
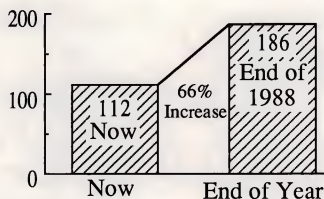
NOTES:

ECO4-VW1-66

The Cascade Effect
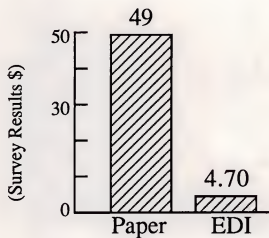
Forecast Release

Specifications

Request for Bid

Price Change

Purchase
Order
Billing
Advisory

Bid

Change Request

Order
Adjustment

INPUT

NOTES:

ECO4-VW1-67

INPUT

Paper versus Electronic Transactions

INPUT

NOTES:
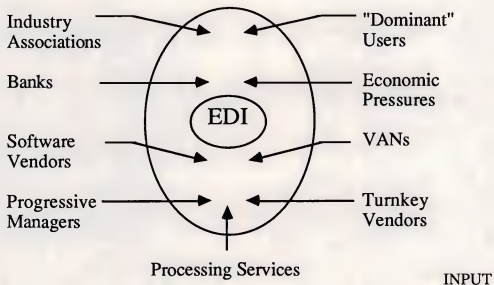
INPUT

Fertilizing the EDI Embryo

- Industry Associations
- Banks
- Software Vendors
- Progressive Managers
- "Dominant" Users
- Economic Pressures
- VANs
- Turnkey Vendors
- Processing Services

EDI

INPUT

NOTES:

ECO4-VW1-69

INPUT

EDI Network Services

$ Million

2,000

1,000

0

68   124   213   378   638   1,000   1,700

CAGR=69%

1987 1988 1989 1990 1991 1992 1993

Federal and Commercial - Includes EMC and Batch Interface

INPUT

NOTES:

ECO4-VW1-70

INPUT

Commercial EDI Software Market

$ Million

120 —
100 —
80 —
60 —
40 —
20 —
0 —

11   17   27   39   55   79   105

CAGR=44%

1987 1988 1989 1990 1991 1992 1993
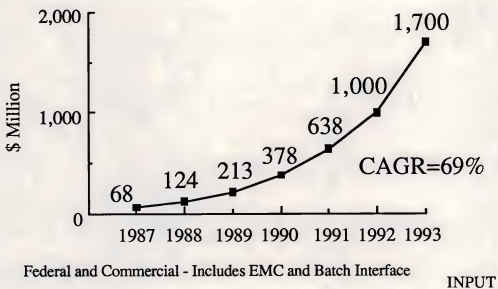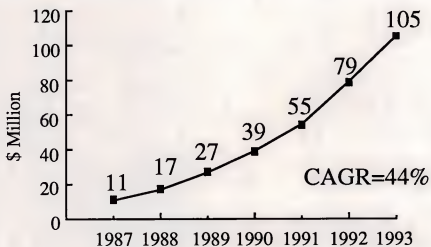
Excludes EMC, Interface

INPUT

NOTES:

ECO4-VW1-71

INPUT

EDI Professional Services Components

1988

Education & Training
$1.3
6%

Software
Development
$3.8

17%

77%

Consulting
$17.0
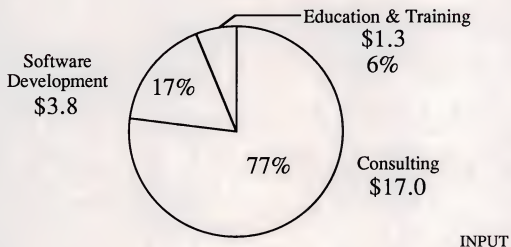
NOTES:

ECO4-VW1-72

EDI Professional Services Components

1993

Education & Training
$4
5%

Software
Development
$16

18%

76%

Consulting
$66
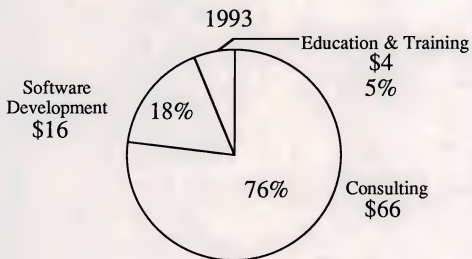
NOTES:

ECO4-VW1-73

EDI Market Forecast
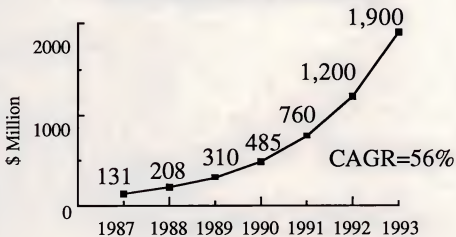
$ Million

Year	Value
1987	131
1988	208
1989	310
1990	485
1991	760
1992	1,200
1993	1,900

CAGR=56%

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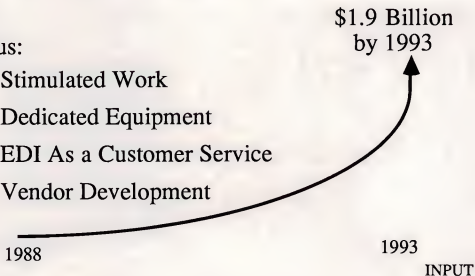Services, Federal and Commercial Markets

INPUT

NOTES:

ECO4-VW1-74

INPUT

The EDI "Shadow" Market

Plus:
- Stimulated Work
- Dedicated Equipment
- EDI As a Customer Service
- Vendor Development

$1.9 Billion by 1993

1988

1993

INPUT

NOTES:

ECO4-VW1-75

INPUT

Victor S. Wheatman
EDI Program Manager
INPUT

Victor S. Wheatman is responsible for managing INPUT's Electronic Data
Interchange Program. He specializes in research and analysis in the
telecommunications, electronic data interchange, and office systems markets.
Prior to joining INPUT, he held marketing and project management
positions with an independent market research firm and was an independent
telecommunications consultant to several U.S. corporations. His earlier
career included management positions in the broadcasting industry.

Mr. Wheatman has a B.A. from Fairleigh Dickinson University and an M.S.
in communications from Boston University, and holds graduate certificates
in management and telecommunications from Harvard and Golden Gate
University.

QUALITY CONTROL
PROOFREADING SIGNOFF

DESCRIPTION _EOE Presentation U.K._

PROJECT CODE _ELO4 - VW1_

AUTHOR _Urctor Wheatman_

DATE TO PROOFREADER	TO BE PROOFED BY	INITIAL	DATE
4/25	_Mic_	_RU_	4/28
FINAL Q.C. 4/25		_RU_	4/25

☑ **READY FOR PRINTER** _with changes_

INPUT PRODUCTION WORK ORDER (Please fill out both sides)

DATE IN: _4/21/89_ DATE DUE: _5/5/89_ PROJECT CODE: _ECO 4_

AUTHORIZED BY: _N/C_ ☐ NEW ☐ REPEAT ☑ REPEAT W/CHANGE

WORK SPECIFICATIONS

DATE OF PRESENTATION: _5/10/89 LONDON_
Additional Information

☑ 35mm Slides _____
☐ Foils _____
☐ Exhibits _____
☐ Questionnaire _____
☐ Letter _____
☐ Business Card _____
☐ Note Paper _____
☐ Newsletter _____
☐ News Release _____
☐ Form _____
☐ Brochure _____
☐ Cover Design _____
☐ Other _____
Number of pages submitted _____ Text
_____ Graphics

SPECIAL INSTRUCTIONS

Some changes to existing
H/c + Slides
A few New Slides

PRINTING SPECIFICATIONS

Quantity/Slides/Foils _____
Quantity/Hard Copy _____
Paper Size _____ X _____
Finished Size _____ X _____
Number of Pages _____
☐ Outside Printer _____
☐ Photocopy
☐ Single side
☐ Double side
☐ Three hole punch
☐ Velobind punch
☐ Trim to _____ X _____
☐ Binding _____
☐ Cover _____
☐ Paper Color _____
☐ Ink Color _____
☐ Copyright Paper
☐ Fold ☐ 1/2 fold ☐ 1/3 fold
☐ Pad
☐ Saddle Stitch
☐ Box
☐ Shrink Wrap
☐ Staple ☐ Corner ☐ 2 on side

MAILING SPECIFICATIONS

Envelope: ☐ No. 10 ☐ 9 x 12 ☐ 10 x 13 ☐ Reply Envelope Quantity _____
☐ First Class ☐ Bulk ☐ Address Labels (Zip Code Order)

Enclosures:
☐ Letter _____
☐ Questionnaire _____
☐ Newsletter _____
☐ News Release _____
☐ Form _____
☐ Brochure _____
☐ Business Reply Envelope _____
☐ Other _____
_____

Distribution: Quantity
☐ Initial Mailing _____
☐ Shelf Stock _____
☐ NJ _____
☐ DC _____
☐ London _____
☐ Paris _____
☐ Japan _____

TOTAL _____

MAIL _____ COPIES DIRECTLY TO:

_____
_____
_____
_____

ADM 400/03 7/88

Electronic Data Intertrends

NORTH AMERICA

Victor S. Wheatman
EDI Program Manager
INPUT

INPUT

NOTES:

ELON-VW

0

EDI—The Year Past

Observations
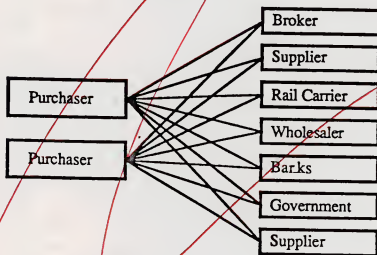
EDI as Religion

"Missionary Sell"

Dedicated Volunteers

INPUT

NOTES:

ECON-VW-4

INPUT

EDI LINKS CAN GET COMPLICATED

| Purchaser |
| Purchaser |

| Broker |
| Supplier |
| Rail Carrier |
| Wholesaler |
| Banks |
| Government |
| Supplier |

INPUT

NOTES:

JJJJ-VW-4

INPUT

Varieties of EDI

Mainline -   Purchasing
                     Logistics
                     EFT + Data

EMCS/ECS -   Medical Claims

Interface -   Insurance

NOTES:

ECON-VW-7

2

EDI TRANSMITS ELECTRONIC
BUSINESS DOCUMENTS

- Machine Readable
- PO's, Invoices, etc.
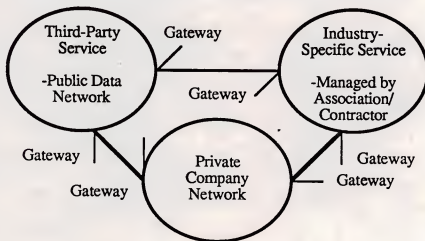- Also Health Care Claims, Others
- Not ATM, POS, or E-Mail

INPUT

NOTES:

ECON-1-3

THREE TYPES OF EDI NETWORKS

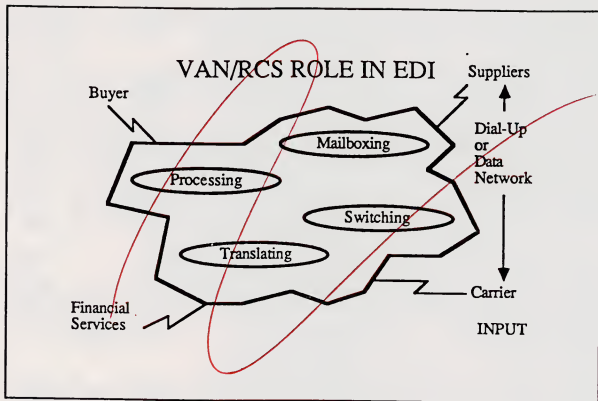Third-Party Service — Public Data Network

Industry-Specific Service — Managed by Association/Contractor

Private Company Network

Gateway

INPUT

NOTES:

Recreate

JJJJ-VW-31

INPUT

3

VAN/RCS ROLE IN EDI

Buyer

Suppliers

Dial-Up
or
Data
Network

Mailboxing

Processing

Switching

Translating

Carrier

Financial
Services

INPUT

NOTES:

JJJJ-VW-5

GEIS

- Aggressive
- Worldwide Alliances, Agents
- EDI/EMC/PETROEX
- Design~~X~~Express

INPUT

NOTES:

Recreate

ETOK-16

5

INPUT

EDI Network/Processing Service Market Shares

Pie chart with the following segments:
- GEIS 21%
- SSW 18%
- MDC 16%
- Kleinschmidt 13%
- IBM 6%
- Transnet 7%
- Railinc 6%
- Others 13%

Excludes Private Networks, EMC, Interface, Federal

INPUT
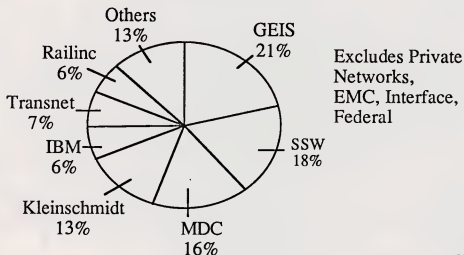
NOTES:

BoTh Sides

SSW ordernet

- Grocery

- Hard Goods

- Logistics

- Drugs, Med/Surg

- Service Merchants

- Software

Telenet

reshoot

(SSPE —UW—)

(cant find hard copy)

6

McDonnell Douglas EDI*Net

- Grocery
- Logistics
- Cross Industry
- Software   Certification

- EDI Version 2.0 — delayed

- "The Family Jewels"

  reshoot

(SSPE-VW-2)

7

IBM

- Information Network—SNA

- Intercontinental Services

- Internal Use

- Insurance, Health Care,
  Electronics, Retail, Etc.

○ *ExpEDITE Family*

INPUT

NOTES:

Recreate

BoTh Sides

ETOK-17

8

INPUT

AT&T

- ~~Net 1000~~
- AT&T Mail—X.400 EDI
- CDC—RediAccess
- Turnkey Systems—RIVET

NOTES:

Recreate

$EQAN \cdot 22$

ETOK-18

9

Service Entries

- AT & T
- Compuserve
- Martin Marietta
- Western Union
- *SEARS*

INPUT

NOTES:

BothSides

ECON-VW-2

EDI—The Year(s) Ahead

Services—New Entrants

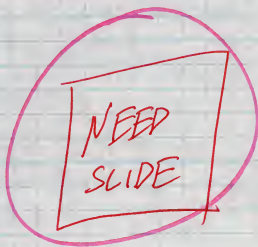- ADP
- NDC
- BOCs
- EDS

"Secondary" Players Find Niches

NOTES:

ECON-VW-55

HARBINGER

- Low Cost PC Software

- Interconnect Through Harbinger's Network

- Sold to Small Suppliers of Large Companies

- Adding EDI/EFT Services

NEED SLIDE

(new)

User Rating—Third-Party Networks
Averages—All Networks

Overall Technical Quality — 4.1
Customer Support — 4.0
Bill Clarity — 3.5
Price — 3.4

(scale: 0 1 2 3 4 5, Low Rated to Highly Rated)

INPUT

NOTES:

ECON-VW-33

13

INPUT

EDI User Issues and Concerns

Standards & Compatibility — 4.4
Software Maintenance — 3.9
Vendor Viability — 3.7

Low Concern — High Concern

INPUT
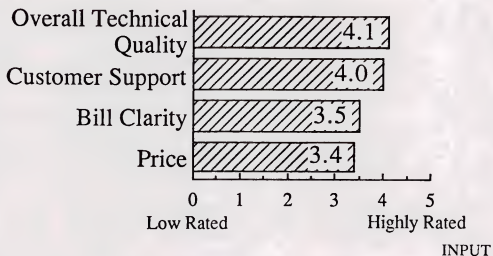
NOTES:

Both Sides

JJ88-VW1-41

14

INPUT

EDI User Issues and Concerns

Network/Data Security	3.6
Changing Business Practices	3.6
Entire System	3.4
Actions of Competitors	3.3

0   1   2   3   4
Low Concern   High Concern

INPUT

NOTES:

ECON-VW-31

15
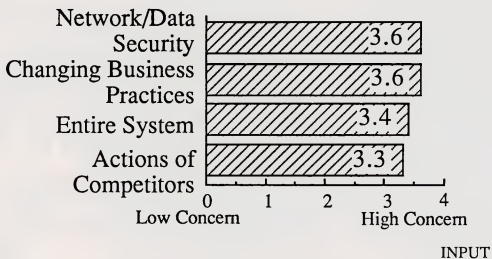
INPUT

Software Entries

The "Majors": ASK, Pansophic, M+D Join MSA

The "Minors": Too Many to Mention

Missing: Apple Software

Cross it off

INPUT
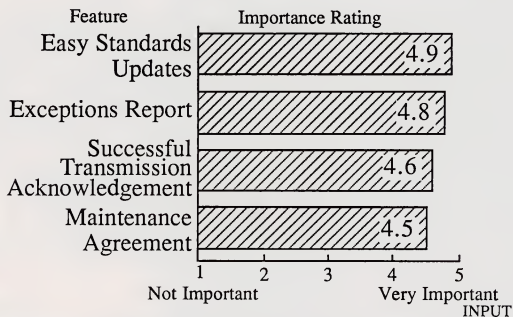
NOTES:

Both sides

ECON-VW-3

16

Software Features Importance

Feature	Importance Rating
Easy Standards Updates	4.9
Exceptions Report	4.8
Successful Transmission Acknowledgement	4.6
Maintenance Agreement	4.5

1 — Not Important   5 — Very Important

INPUT

NOTES:

JJ88-VW1-42

17

INPUT

Leading EDI Software

- GEIS
- TranSettlements
- MSA
- ACS

- SSW/ordernet
- EDI, Inc.
- Metro-Mark
- Supply Tech

PARTICIPANTS ARE FORMING ALLIANCES

- Users Who Distribute
- EDI Software Developer
- EDI Service
- Applications Developer + EDI Service Agent
- Applications Developer + Distributor
- Applications Developer + EDI Service Agent
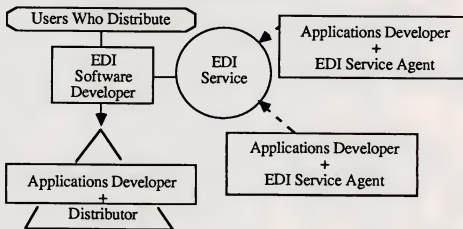
INPUT

NOTES: _Recreate_

EPAD-3

19

INPUT

EDI In Discrete Manufacturing

Segment	Activity Summary
Auto	EDI Essential to Reduce Costs; "Big 3" Private Nets moving to Public Standards
Electronics	EDX Conforms to X12

INPUT

ESMI-VW-39

20

INPUT

EDI In Discrete Manufacturing

Segment	Activity Summary
Telecommuni-cations Equipment	TCIF Just Starting - Promoting X12 and Bar Coding
Apparel	EDI Tied to "Crafted with Pride in the USA"

USm1-Jw-39a

21

EDI In Process Manufacturing

Segment	Activity Summary
Oil/Gas	COPAS Integrating EDI; Working on Unique Needs
Chemicals	CIDX Used by 30+ Companies

USMI-VW-40a

22

EDI In Process Manufacturing

Segment	Activity Summary
Paper Products	EMLINK on GEISCO - Trade Association Product
Metals	Growing List of ANSI Product Code Descriptors

40

23

EDI In Distribution

Segment	Activity Summary
Groceries	UCS Used by Most Large Firms
Office Products	Industry Association Project (ICOPS) Used by 40 Wholesalers, Large Dealers, and Manufacturers

INPUT

24

INPUT

EDI In Distribution

Segment	Activity Summary
Warehousing	WINS Standard is Similar to UCS
General	Large Distributors and Mass Merchandisers (McKesson, K-Mart) Using Private Networks

INPUT

25

INPUT

EDI In Transportation

Segment	Activity Summary
Rails	Large Companies Using Private Systems, Industry Association RCS, and Kleinschmidt
Trucking	60-200 Firms Using EDI
Ocean	U.S. Customs Promoting EDI to Cut Paperwork

INPUT

26

INPUT

EDI In Medical
Products And Services

Segment	Activity Summary
Medical Supplies	Captive Systems Best Known: AHS
Optometry	TOP Network Helping Independents Compete Against Retail Chains

INPUT

27

INPUT

EDI In Medical Products And Services

Segment	Activity Summary
Pharmaceuticals	Wholesalers Active for 15 Years; Proprietary Standards Migrating to X12 for Entire Industry

28

EDI In Services

Segment	Activity Summary
Overnight Courier	EDI Used to Improve Customer Service to High-Volume Users
Banks	Growing Interest as Users, Uncertainty as Service Providers

INPUT

29

INPUT

EDI In Services

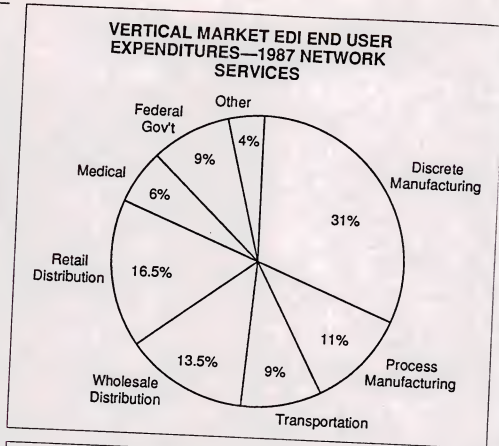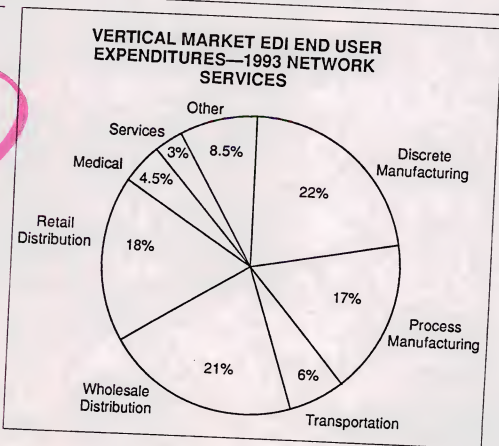| Segment	Activity Summary
Health Claims	UB 82 and HCFA Formats; Growing Usage
Insurance	Industry Association Improving Interface/ Methods between Independent Agents and Carriers

INPUT

30

INPUT

EXHIBIT III-23

#1

31

VERTICAL MARKET EDI END USER EXPENDITURES—1987 NETWORK SERVICES

- Discrete Manufacturing 31%
- Process Manufacturing 11%
- Transportation 9%
- Wholesale Distribution 13.5%
- Retail Distribution 16.5%
- Medical 6%
- Federal Gov't 9%
- Other 4%

EXHIBIT III-24

32

#2

VERTICAL MARKET EDI END USER EXPENDITURES—1993 NETWORK SERVICES

- Discrete Manufacturing 22%
- Process Manufacturing 17%
- Transportation 6%
- Wholesale Distribution 21%
- Retail Distribution 18%
- Medical 4.5%
- Services 3%
- Other 8.5%

42

EVER

EDI CASE STUDY

LEVI-STRAUSS

INPUT

USMI-ルー21

33

INPUT

Levi-Strauss

- 17,000 Retailers—200,000 Stores

- Retail Electronic Services—
  a Marketing Group

- Also Responsible for Supplier EDI

USM1 - 22

34

Levi-Strauss

Key Concept:

Capture POS Data
to Drive Manufacturing

INPUT

35

INPUT

Levi-Strauss

Retail Services:

- Sell Through Analysis and Reporting System (STARS)

- Model Stock Management

- Retailer EDI (REDI)

- Purchase Order Reconciliation

INPUT

36

INPUT

Levi-Strauss

Benefits:

- Improved Turns
- Fewer Stock Outs
- Enhanced Retailer Relations

37

EDI CASE STUDY

HEWLETT PACKARD

USM1-VV-33

√1

38

H-P

- 56 Plants in 15 Countries
- Decentralized $\longrightarrow$ Integrated
- Entrepreneurial/Complex

M

39

H-P

EDI Approach

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

INPUT

40

INPUT

H-P

Divisions → Routes — EDI Central — EDI Service

Customer

Supplier

Shipper

Sales Regions →

INPUT

41

H-P

EDI Goals

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

42

H-P

Recommendations

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

43

EDI CASE STUDY

FIRST NATIONAL
BANK OF CHICAGO

INPUT

44

INPUT

First Chicago

President's Mandate:

"We Will Do EDI"

- Purchasing
- Potential Service

45

First Chicago

1985: No Supplier Was Ready

So: Loaned Software
     Underwrote Costs
     Free Training & Installation

46

First Chicago

Cost Benefit
Analysis (1985):

Would Cost More—Not Less
- Dual Systems
- But Costs have Moderated

47

First Chicago

Implementation

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

48

First Chicago

Transactions

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

49

First Chicago

Benefits

- $2.5 Million in Annual Savings

- Enhanced Control/Monitoring—
  "Everything By Registered Mail"

- Experience Applied to EDI Services

50

Texas Instruments

- Centralized Worldwide

- T I's Own Network

- Provides "Free" Consulting

- Evaluating Graphics and Catalogs

NOTES:

$EQ40 - 6E - 12$

51

WESCO

- Survey Customer Inventory Levels
  → Automatic Replacement Orders

- Access Through Any Branch—
  Redistributes

- VAN or Direct

NOTES:

EQAO-GE-13

52

IBM

- 1991 Goal—2,000 EDI Suppliers

- Save $60 Million Annually
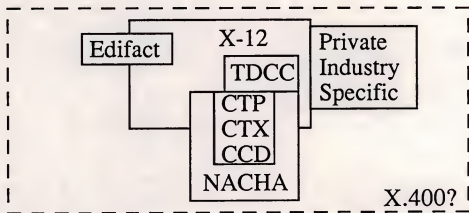
DEC

- EDI Executive Committee

- Electronic Store

NOTES:

EARA GE - 14

53

EDI Standards Relationships

Edifact

X-12

TDCC

CTP
CTX
CCD

NACHA

Private Industry Specific

X.400?

INPUT

NOTES:

EQAD-GE

54

Standards Interfusion

Proprietary
Industry Specific ────────▶ X12

    Pro: "Go with the Flow"

    Con: Ease of Change

    When: Now

NOTES:

55

Standards Interfusion

UCS ◄──────► X12

Pro: Companies Now Using Both

Con: "Ain't Broke—Why Fix It?"

When: 2-5 Years

NOTES:

56

Standards Interfusion

TDCC ←——→ X12

Pro: Would Solve Coordination
     Problems

Con: Work Load Issues

When: 4-10 Years

NOTES:

EQAD-GE-9

51

Standards Interfusion

X12 $\longleftrightarrow$ Insurance (IIR/Acord)

Pro: Useful in Mortgage Banking, Transportation, Others?

Con: Coordination Issues

When: 2 Years (Real Estate)

INPUT

NOTES:

58

INPUT

Standards Interfusion

X12 ⟶ Edifact 400

Pro: Edifact—"The True Faith"

Con: X.400 Cycle Is 4 Years
        Varieties of X.400?

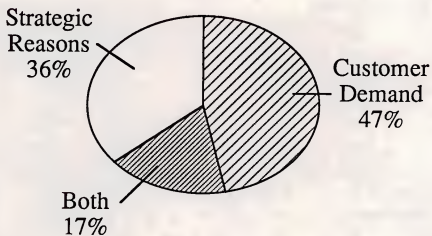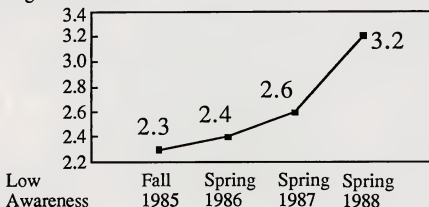When: 2-10 Years

NOTES:

59

Why Was EDI Implemented?

Strategic
Reasons
36%

Customer
Demand
47%

Both
17%

INPUT

NOTES:

Both sides

ECON-VW-26

S4 60

INPUT

EDI Awareness Is Growing

High Awareness

Value	Fall 1985	Spring 1986	Spring 1987	Spring 1988
	2.3	2.4	2.6	3.2

Low Awareness

INPUT

NOTES:

ECON-VW-36
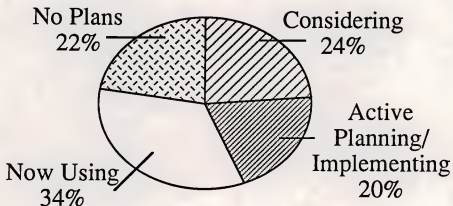
INPUT

Forecast Factors

EDI Status
(IS Managers)

No Plans 22%

Considering 24%

Active Planning/ Implementing 20%

Now Using 34%

INPUT

NOTES:

INPUT

Transaction Growth
User's Average Response

1986-1987	1987-1988
181%	156%

INPUT

NOTES:

ECON-VW-38

$5/$ 63

INPUT

Forecast Factors

Transaction Type Growth
(Percent)

Bills of Lading: 43 (Now), 73 (1989)
Payments: 29 (Now), 64 (1989)

☒ Now
☒ 1989

INPUT

NOTES:

ECON-VW-40

88 64

INPUT

Transaction Type Growth
(Percent)

Forecast Factors

POs from Customers: 84 / 95
Invoices: 69 / 85
POs to Suppliers: 59 / 74

Now
Added by 1989

INPUT

NOTES:

ECON-VW-39

© 1988 by INPUT. Reproduction Prohibited.

INPUT

Number of EDI Trading Partners
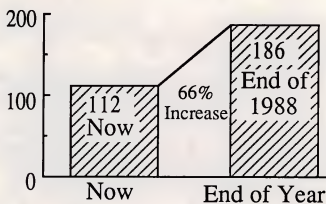
INPUT

NOTES:

Both sides

ECON-VW-42

60 66
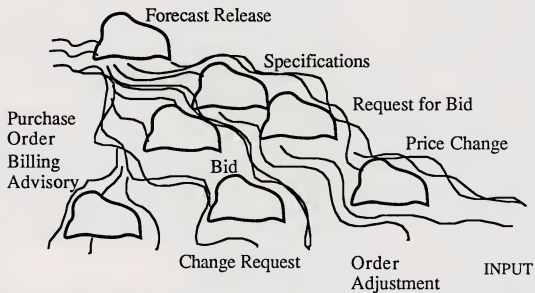
INPUT

The Cascade Effect

Forecast Release

Specifications

Request for Bid

Price Change

Purchase
Order
Billing
Advisory

Bid

Change Request

Order
Adjustment

INPUT

INPUT

Paper versus Electronic Transactions

(Survey Results)
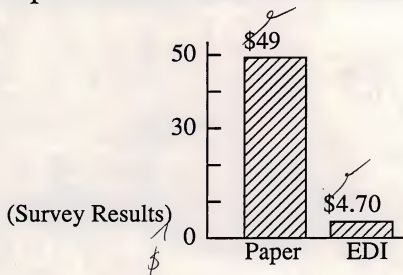
INPUT

Who Implements EDI
(EDI Managers)

Both
18%

Functional
Dept.
10%

IS Alone
72%

INPUT

NOTES:

INPUT

FERTILIZING THE EDI EMBRYO

Industry Associations → ← "Dominant" Users

Banks → ← Economic Pressures

Software Vendors → (EDI) → VANs

Progressive Managers → ← Turnkey Vendors

Processing Services
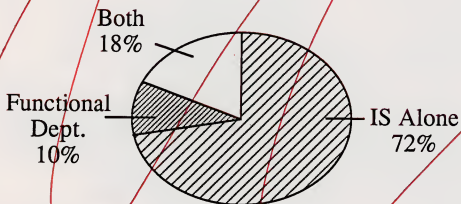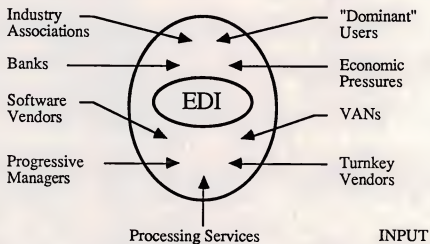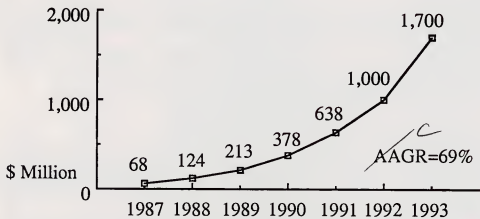
INPUT

NOTES: *Recreate*

Both Sides

ECON-1-4

63 69

EDI Network Services

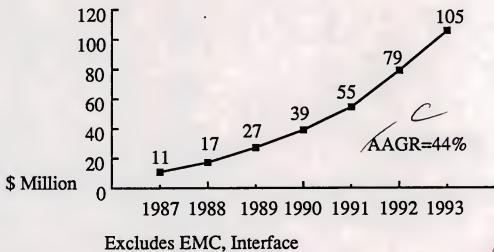Federal and Commercial - Includes EMC and Batch Interface

INPUT

NOTES:

JJ88-VW2-10

INPUT

Commercial EDI Software Market

NOTES:

ECON-VW-46

INPUT

EXHIBIT VI-6

EDI PROFESSIONAL SERVICES—
COMPONENT PROPORTIONS

1987

Software
Development
$1.0
19%

$.6
11%

Consulting
$3.7
70%

Education
& Training

1988

Software
Development
$3.8
17%

Education
& Training
$1.3
6%

Consulting
$17.0
77%

1993

Software
Development
$16.0
18%

$4

Education
and
Training
5%

Consulting
$66.0
76%

CAGR	
All Professional Services = 31%	
Software Development = 33%	
Consulting = 31%	
Education and Training = 22%	
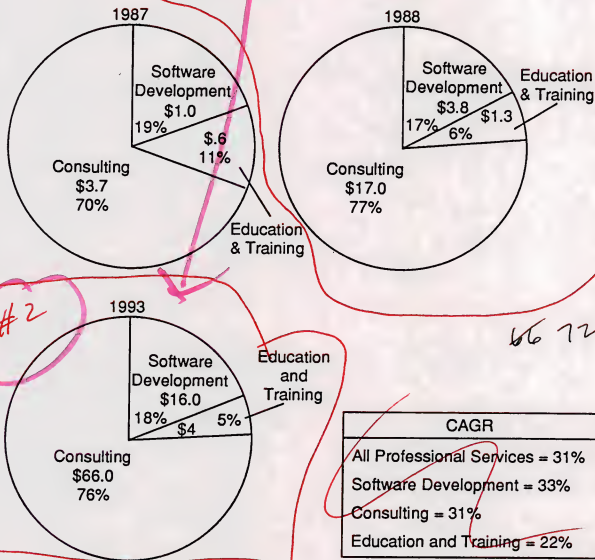
Note: EDI Systems Operation Market—Negligible.
Dollar figures are in millions of dollars.

EDI Market Forecast

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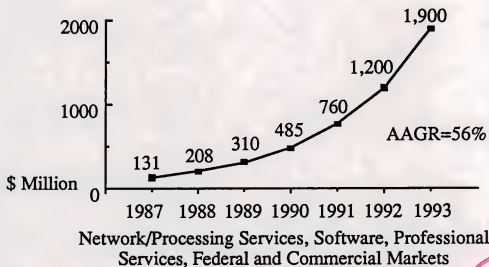
INPUT

NOTES:

ECON-VW-43
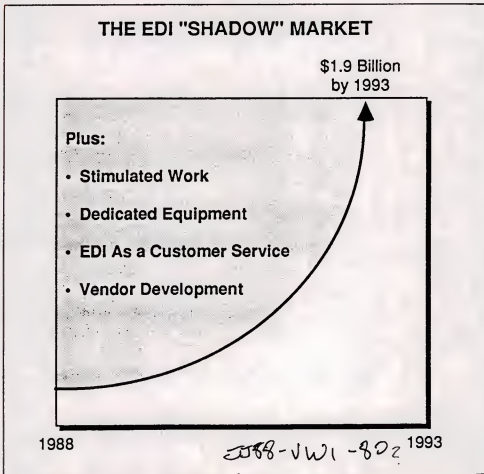
$\sqrt{}$ 74

INPUT

D

EDI-Driven User Expenditures—The "Shadow" Market

As reported in Chapter III of this report, users surveyed by INPUT were asked to provide information on their internal activities and expenses in support of EDI systems and on their expenditures for "EDI-stimulated" development. In many cases, costs of EDI-stimulated work surpassed actual EDI project costs.

- The professional services component of the total market forecast is an estimate of EDI-development-related end-user expenditures, but excludes EDI-stimulated development.

- Also excluded from the market forecast are professional service and other expenditures by EDI service and software providers in developing their own offerings. Such activities do, however, represent market opportunities.

Exhibit VI-7 illustrates the "shadow" EDI market, representing internal development costs for both EDI and EDI-stimulated end-user developments and the other expenditures described.

EXHIBIT VI-7

THE EDI "SHADOW" MARKET

$1.9 Billion by 1993

Plus:

- Stimulated Work

- Dedicated Equipment

- EDI As a Customer Service

- Vendor Development

1988   1993

ECOY-VW1

Record of Slide origination

ECOY-VW1 #	Original code	ECOY-VW1 #	Original code
1	ECON-VW-4	2	USM1-VW-41a
2	" -7	26	" -42
4	JJ88-VW2-4	27	" 43a
9	EQAD -22	28	" 43
11	ECON-VW-55	29	" 44a
13	" -33	30	" 44
14	JJ588-VW1-41	33	" 21
15	ECON-VW-31	34	" 22
17	JJ588-VW1-42	35	" 23
20	USM1-VW-39	36	" 24
21	" 39a	37	" 25
22	" 40a	38	" 33
23	" 40	39	" 34
24	" 41	40	" 35
		41	" 37

Record of Slide Origination

ECO4-UW1 #	Original code		ECO4-UW1 #	Original code
42	USM1-UW - 36		56	EQAD-GE-8
43	" - 38		57	" 9
44	" 26		58	" 11
45	" 27		59	" 7
46	" 28		~~60~~	~~ECON-UW 26~~
47	" 29		~~61~~	~~" 36~~ stet #61
48	" 30		~~62~~	~~ECON-4-UW 37~~
49	" 31		63	" 38
50	" 32		64	" 40
51	EQAD-GE-12		65	" 39
52	" 13		66	" 42
53	" 14		67	" 41
54	" 1		~~68~~	~~" 28~~
55	" 10			