THE EDI SERVICES AND SOFTWARE MARKETS

Victor S. Wheatman
Manager - EDI Planning Services
INPUT

INPUT EDI Planning Service (EDIPS)

- EDI Newsletter
- Market Studies
- Custom Research
- Conferences, Seminars

INPUT

NOTES:

ETOK-1

EDIPS
Study Topics

- North American Network Services
- European Market
- U.S. Government EDI
- EDI Software

INPUT

NOTES:

ETOK-2

EDIPS
Study Topics

- Vertical Market Potentials
- EDI and Professional Services
- International EDI
- Case Studies

INPUT

NOTES:

ETOK-3

EDIPS

The Only Full-Service
EDI Research Program

INPUT

NOTES:

ETOK-4

VAN (U.S.)

- Communications Related "Value Added":
  - Protocol, Speed Conversions
  - Buffering, Store & Forward
- A Link to Applications, Services, Data Bases, Other Companies

INPUT

NOTES:

ETOK-5

Remote Computer Service (Service Bureau)

- Data Entry, Processing
- May Use Tapes, Diskettes
- VANs Communicate to RCS

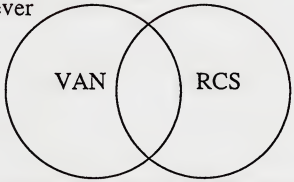
INPUT

NOTES:

ETOK-6

VAN & RCS

However



The Difference is the Network

INPUT

NOTES:

ETOK-7

ELECTRONIC DATA INTERCHANGE

The Computer-to Computer Exchange of
Intercompany Business Documents
and Information

- Overcomes Incompatabilities
- Standard Formats

INPUT

NOTES:

ETOK-8

EDI TRANSMITS ELECTRONIC BUSINESS DOCUMENTS

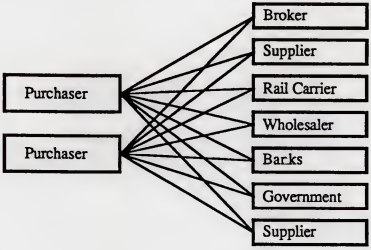
- Machine Readable
- PO's, Invoices, etc.
- Also Health Care Claims, Others
- Not ATM, POS, or E-Mail

INPUT

NOTES:

ETOK-9

EDI LINKS CAN GET COMPLICATED



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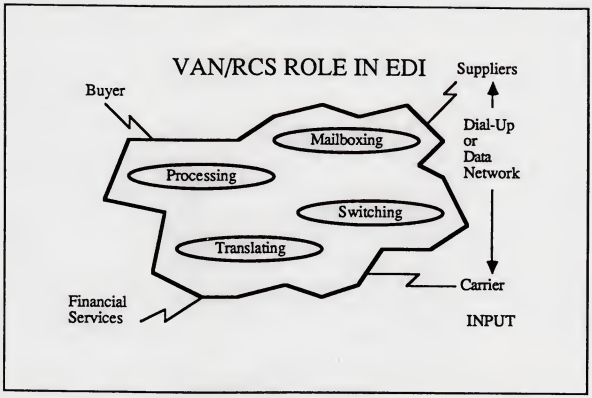


NOTES:

ETOK-11

VARIETIES OF EDI

Mainline EDI	-	Purchasing
LDI	-	Logistics
EMCS	-	Medical Claims
Interface	-	Insurance
EFT with Addendum	-	Value and Data

INPUT

NOTES:

ETOK-12

EDI BENEFITS

Reduced Expenses
Fewer Errors
Improved Turnaround
Better Customer Service
Enhanced Management Control

MAJOR EDI SERVICES

GE INFORMATION SERVICES U.S.A.	the EDI*Express
McDonnell Douglas Electronic Data Interchange Systems Company	edi•net
STERLING SOFTWARE	Ordernet
IBM	Information Exchange
CONTROL DATA	REDINET

ETOK-14

MAJOR VAN EDI SERVICES

VANS	SERVICE	PRINCIPAL USERS
McDonnell Douglas	EDI*Net	Cross-Industry
GEISCO	EDI*Express	Cross Industry: Transportation, Grocery, Retailers, Automotive, Health Care Insurance
Control Data	RediNet	Cross-Industry
IBM-Information Network	Information Exchange	Insurance (IVANS), Electronics, Chemicals, Textiles, Manufacturers

INPUT

NOTES:

ETOK-15

GEIS

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

INPUT

NOTES:

ETOK-16

IBM

- Information Network—SNA
- Intercontinental Services
- Internal Use
- Insurance, Health Care, Electronics, Retail, Etc.

INPUT

NOTES:

ETOK-17

AT&T

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

INPUT

NOTES:

ETOK-18

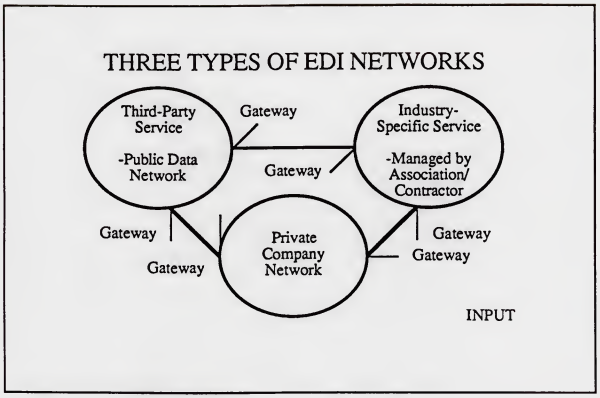
MAJOR RCS EDI SERVICES

RCS FIRMS		
Sterling Software	Ordernet	Cross-Industry Grocery, Pharmaceuticals, Medical/Surgical Supplies, Hardware
Kleinschmidt		Rail Transportation
RailInc		Rail Transportation
TranSettlements		Motor Transportation

INPUT

NOTES:

ETOK-19



NOTES:

ETOK-20

PRIVATE EDI NETWORKS

ROCKWELL	AUTO MAKERS
CATERPILLAR	HEWLETT-PACKARD
SEARS/PENNEYS	AMERICAN HOSPITAL SUPPLY
GENERAL FOODS	LEVI-STRAUS
MOTOROLA	OTHERS

INPUT

NOTES:

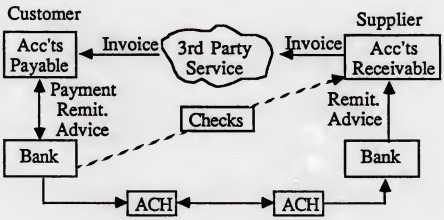
ETOK-21

PRIVATE NETWORK TRENDS

- Private Nets Larger than Public (1985-1986)
- Few, if Any More Private EDI Nets
- Conversions to Public/Open Nets?

ETOK-22

Banks in EDI



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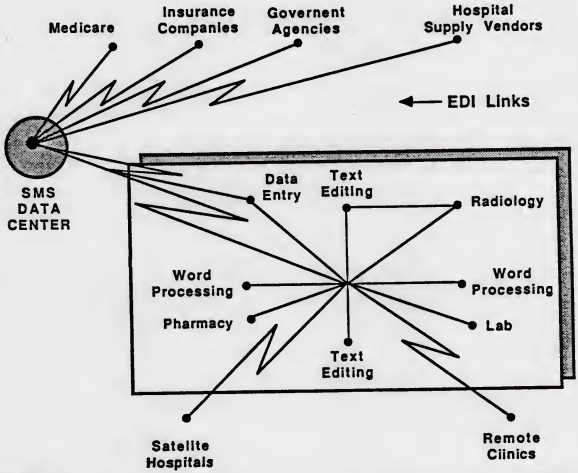
NOTES:

ETOK-23

SHARED MEDICAL EXTENDED NETWORK



ETOK-24

EDI SOFTWARE FUNCTIONS

Table Driven Translation - Hard Coded

Transaction Sets - Electronic Document Formats

Document Processor - Editor and Output

Optional Communications Module

INPUT

NOTES:

ETOK-25

SOFTWARE VENDOR CATEGORIES

CATEGORY	COMMENTS
Start-Ups	Entrepreneural, Some Spin-Offs of Consulting Firms
VAN/RCS	Goal is to Increase Network Traffic
Established Application Vendors	Adding EDI Functions to Existing Software

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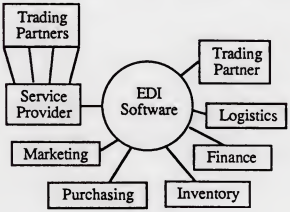
NOTES:

ETOK-26

EDI SOFTWARE IS THE CORE OF THE SYSTEM



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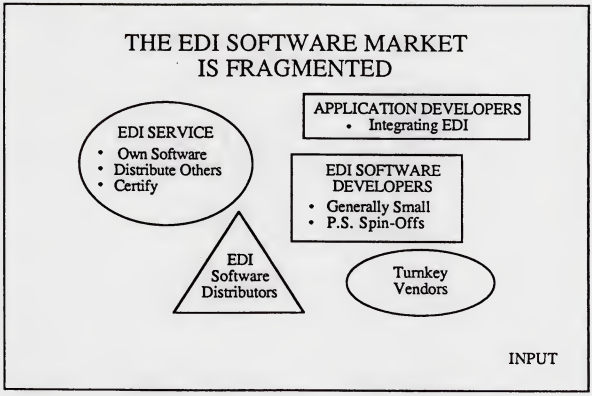
ETOK-27



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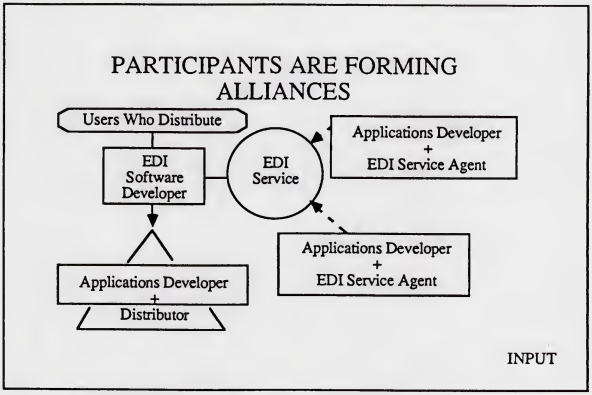

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ETOK-29

EDI SOFTWARE MARKET CONCLUSIONS

- A Fragmented Market
- Major Vendors Missing
- Alliance Formation - Experimental Relationships
- Missionary Selling Needed
- Integrated Solutions - The Wave of the Future

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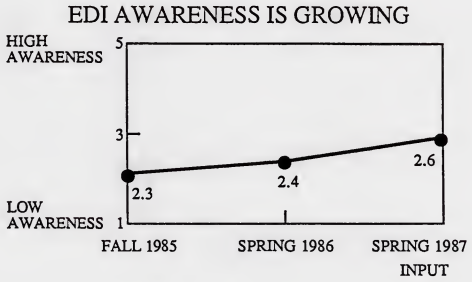
NOTES:

ETOK-30

SURVEY FINDINGS

NOTES:

ETOK-31



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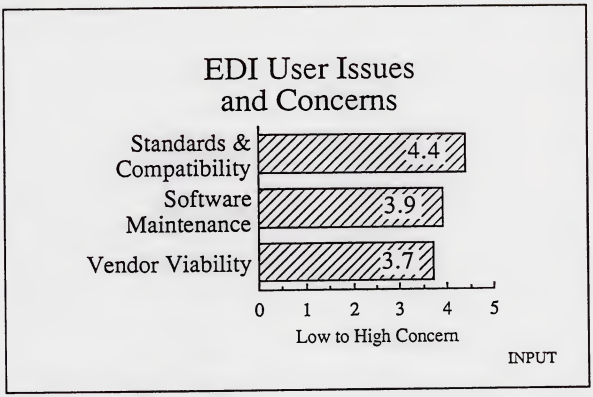

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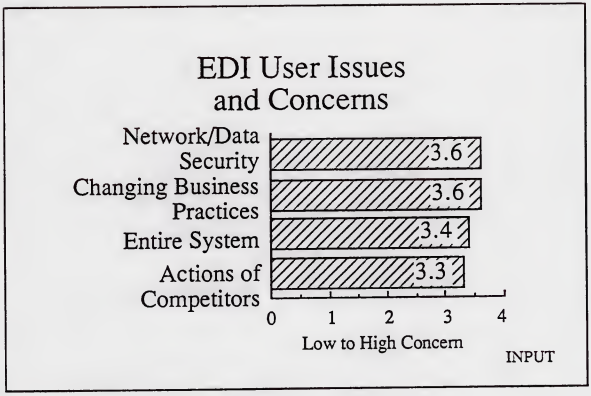

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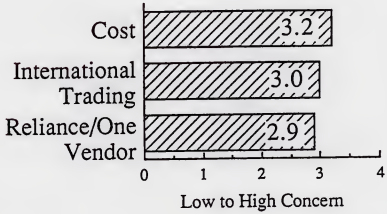

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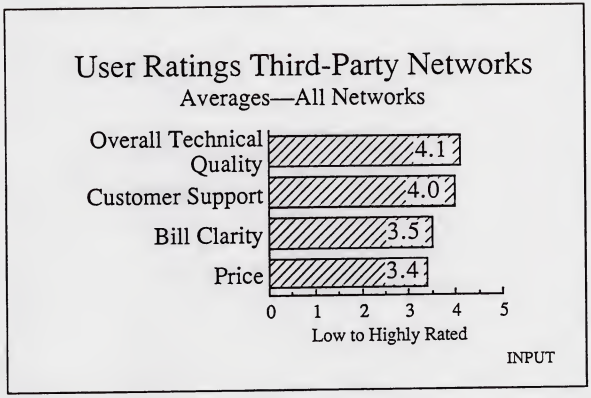

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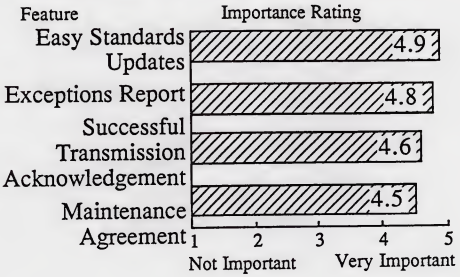
ETOK-36



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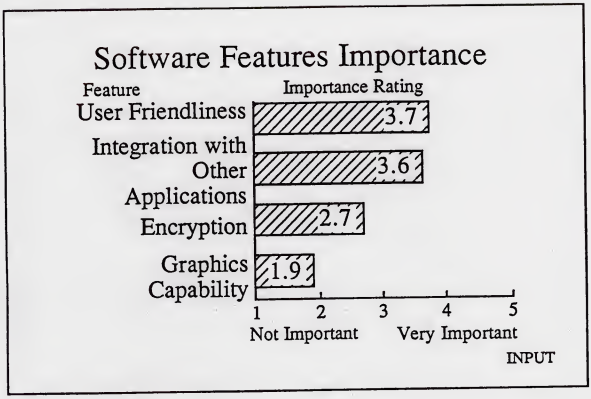
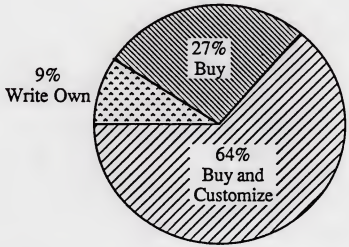


NOTES:

ETOK-38

Build Or Buy EDI Software
User Responses



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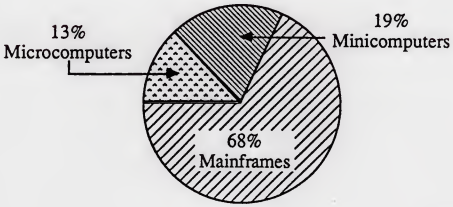
ETOK-39

Computers Planned Or Used For EDI User Responses



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ETOK-40

More Micros Will Be Used For EDI Than Suggested

- Functional Departments will Interface PCs to Mainframes
- PC Implementation - Easiest, Less Expensive
- Small Companies Do Not Have Larger Processors

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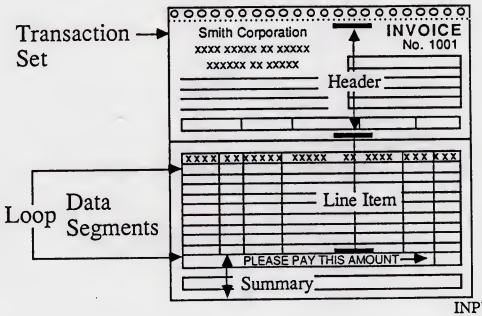
ETOK-41

X12 Terminology



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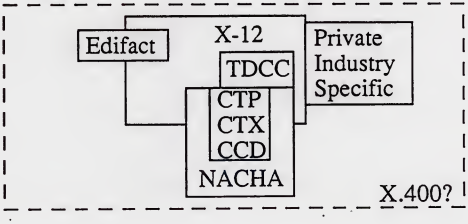
NOTES:

ETOK-42

EDI Standards Relationships



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NOTES:

ETOK-43

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:

ETOK-44

Standards Interfusion

UCS ◄——► X12

Pro: Companies Now Using Both

Con: "Ain't Broke—Why Fix It?"

When: 2-5 Years

INPUT

NOTES:

ETOK-45

Standards Interfusion

TDCC ◄——► X12

Pro: Would Solve Coordination Problems

Con: Work Load Issues

When: 4-10 Years

INPUT

NOTES:

ETOK-46

Standards Interfusion

Proprietary
Industry Specific → X12

Pro: "Go with the Flow"

Con: Ease of Change

When: Now

INPUT

NOTES:

ETOK-47

Standards Interfusion

X12 ⟷ Insurance (IIR/Acord)

Pro: Useful in Mortgage Banking, Transportation, Others?

Con: Coordination Issues

When: 2 Years (Real Estate)

INPUT

NOTES:

ETOK-48

EDI CASE STUDY

LEVI-STRAUSS

INPUT

ETOK-49

Levi-Strauss

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

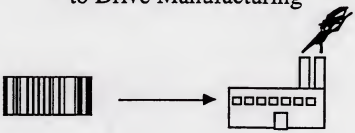
INPUT

ETOK-50

Levi-Strauss

Key Concept:

Capture POS Data to Drive Manufacturing



INPUT

ETOK- 51

Levi-Strauss

Retail Services:

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

INPUT

ETOK-52

Levi-Strauss

Benefits:

- Improved Turns
- Fewer Stock Outs
- Enhanced Retailer Relations

INPUT

ETOK-53

EDI CASE STUDY

FIRST NATIONAL BANK OF CHICAGO

INPUT

ETOK-54

First Chicago

President's Mandate:

"We Will Do EDI"

- Purchasing
- Potential Service

INPUT

ETOK-55

First Chicago

1985: No Supplier Was Ready

So: Loaned Software
Underwrote Costs
Free Training & Installation

INPUT

ETOK-56

First Chicago

Cost Benefit Analysis (1985):

Would Cost More—Not Less

- Dual Systems
- But Costs have Moderated

INPUT

ETOK-57

First Chicago

Implementation

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

INPUT

ETOK-58

First Chicago

Transactions

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

INPUT

ETOK-59

First Chicago

Benefits

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

INPUT

ETOK-60

EDI CASE STUDY

HEWLETT PACKARD

INPUT

ETOK-61

H-P

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

INPUT

ETOK-62

H-P

EDI Approach

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

INPUT

ETOK-63

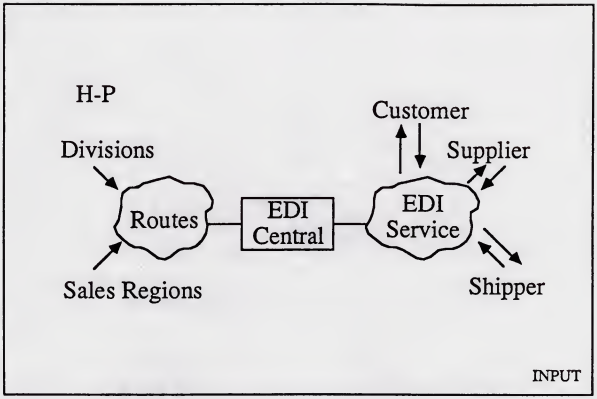
H-P

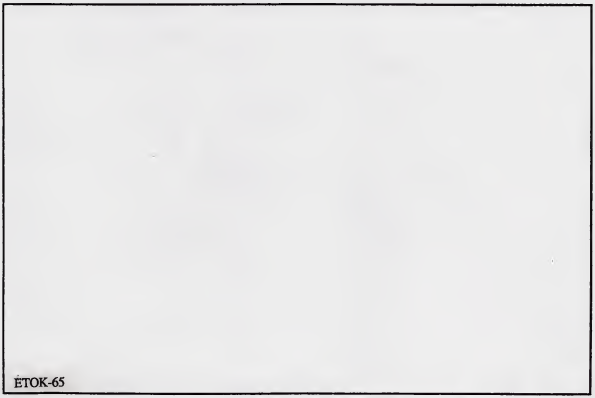
EDI Goals

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

INPUT

ETOK-64





H-P

Recommendations

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

INPUT

ETOK-66

Texas Instruments

- Centralized Worldwide
- T I's Own Network
- Provides "Free" Consulting
- Evaluating Graphics and Catalogs

INPUT

NOTES:

ETOK-67

WESCO

- Survey Customer Inventory Levels
  → Automatic Replacement Orders
- Access Through Any Branch—
  Redistributes
- VAN or Direct

INPUT

NOTES:

ETOK-68

IBM

- 1991 Goal—2,000 EDI Suppliers
- Save $60 Million Annually

DEC

- EDI Executive Committee
- Electronic Store

INPUT

NOTES:

ETOK-69

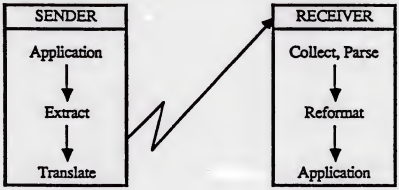
EDI/ APPLICATION INTEGRATION

INPUT

NOTES:

ETOK-70

EDI/APPLICATION INTEGRATION



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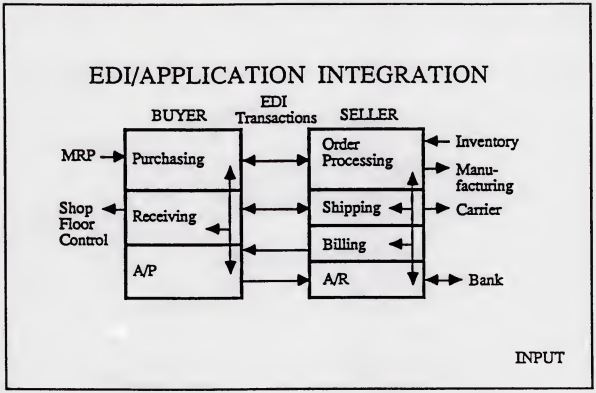
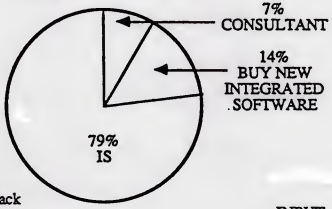
ETOK-71



NOTES:

ETOK-72

EDI INTEGRATION METHOD USER RESPONSES



Comment: Reflects a Lack of Integrated Solutions

INPUT

ETOK-73

EDI/APPLICATION INTEGRATION

- Effects many departments
- Top management needs to set corporate goals
- Task force approach required

INPUT

NOTES:

ETOK-74

EDI/APPLICATION INTEGRATION
(Continued)

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

INPUT

NOTES:

ETOK 75

EDI AS PART OF CSI PROJECTS

- Multiple interfaces
- Multi-vendor environments
- Organizational/Management issues
- Strategic importance

INPUT

Notes:

EDI AS PART OF CSI PROJECTS

MULTIPLE INTERFACES

- **Integrating existing systems/software**
  - Marketing, purchasing, inventory, manufacturing finance, logistics
- **Networks**
  - LANs
  - Corporate WANs
  - Private nets
  - Public nets

INPUT

Notes:

EDI AS PART OF CSI PROJECTS
ORGANIZATIONAL/MANAGEMENT ISSUES

- Development transcends individual department responsibilities
- New ways of doing business
  - Impact on organizational structure/methodology
- Internal and external marketing
- Training, documentation

INPUT

Notes:

EDI AS PART OF CSI PROJECTS

STRATEGIC IMPORTANCE

- **Speed**
- **Competitiveness**
- **Reduce risk "end to end"**

INPUT

Notes:

ENHANCED EDI SERVICES/ SYSTEMS

INPUT

NOTES:

ETOK-80

EDI SERVICE COMPONENTS/PROFITABILITY

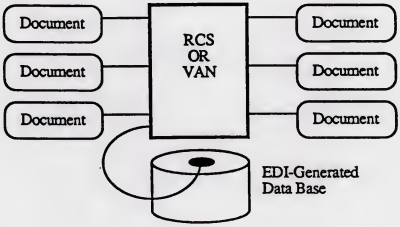
- COMMUNICATIONS - LOW
- PROCESSING - MEDIUM
- "VALUE ADDED" - HIGH
  - REPORTS
  - DATA BASE
  - GRAPHICS
  - ETC.

INPUT

NOTES:

ETOK-81

EDI TRAFFIC BECOMES A DATA BASE



INPUT

NOTES:

ETOK-82

EDI TRAFFIC BECOMES A DATA BASE

Only Example: SSW's Medimetrik

-Aggregate Pharmaceutical Information

Others Can Benefit

Applications:

-Market Research
-Sales/Distribution Analysis

INPUT

NOTES:

ETOK-83

EDI DATA BASE ISSUES

- Trading Partner Participation
- Who Can Access
- Security/Privacy
- Software Design

INPUT

NOTES:

ETOK-84

DATA BASES CAN FACILITATE TRADING

Example: Schweber Net

- Exclusive Use of Video Log
  - -Electronic Components
  - -NAPLPS Graphics
- On-Line Order Entry

  → Ordering System → Pick List
- Competitive Advantage

INPUT

NOTES:

ETOK-85

GRAPHICS/EDI INTEGRATION

Examples:
- Schweber Net
- Design * Express (Geis)
- WSSDOM (AT & T/CAD CAM Inc.)

Premise: Graphics needed in buying decisions- aerospace, electronics, speciality manufacturing, others

INPUT

NOTES:

ETOK-86

GRAPHICS/EDI INTEGRATION

WSSDOM

Wide Scale Shared Data Operations Management
IGES CAD/CAM GRAPHICS + TEXT

- Supplier link
- Maintenance link

INPUT

NOTES:

ETOK-87

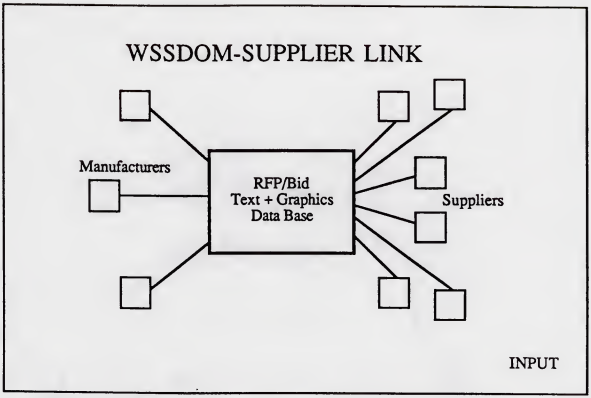
WSSDOM - SUPPLIER LINK

- Bid opportunities for small-medium size speciality parts/components manufacturers
- Listing fees-usage fees
- Mailboxes receive bid/bid opportunities
  -Flexible formats

INPUT

NOTES:

ETOK-88



NOTES:

ETOK-89

EDI/E-MAIL INTEGRATION

- GEIS EDI * EXPRESS → QUIK-COMM
- ORDER NET → EDI/Laser mail (Hard Copy Conversion)
- ORDER NET → FAX

Opportunity: E-MAIL FORMS/SCRIPTS → EDI

INPUT

NOTES:

ETOK-90

EDI INTER-NETWORKING

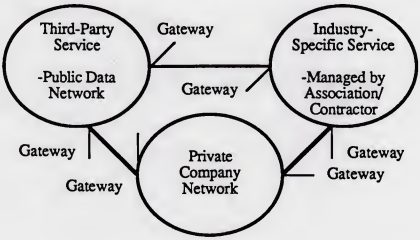
("INTERWORKING")

INPUT

NOTES:

ETOK-91

THREE TYPES OF EDI NETWORKS



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NOTES:

ETOK-92

EDI INTERNETWORKING

REASONS

- Trading Partners On Other Services/Networks
- Cross-Industry Trading
  - -Cross-Industry Translations
- "Universal" Data Services
- Goal: Transparency

INPUT

NOTES:

ETOK-93

EDI INTERWORKING EXAMPLES

GEIS' EDI * Express → Others (On Request)

SSW's Ordernet ↔ MDC's EDI * Net (Grocery)

RaiLinc ↔ TranSettlements, Kleinschmidt

CDC's RediNet ↔ Private Networks (RediAgent)

INPUT

NOTES:

ETOK-94

INTERWORKING: THE FUTURE
X.400

- E-mail (Messaging) Connectivity
- EDI Documents Within X.400 Envelopes
- International Implications
- Mixed Media (Voice, Video, Graphics, Data)

INPUT

NOTES:

ETOK-95

EDI INTEGRATION
"The Wave of the Future"

- Applications
- Enhanced Services: E-mail, E-forms,Data Bases
- Interworking
- Media (Data, Graphics, Voice, Video)

INPUT

NOTES:

ETOK-96

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

ETOK-97

EDI In Discrete Manufacturing

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

INPUT

ETOK-98

EDI In Process Manufacturing

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

INPUT

ETOK -99

EDI In Process Manufacturing

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

INPUT

ETOK-100

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

ETOK-101

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

ETOK-102

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

ETOK-103

EDI In Medical Products And Services

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

INPUT

ETOK-104

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

ETOK-105

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

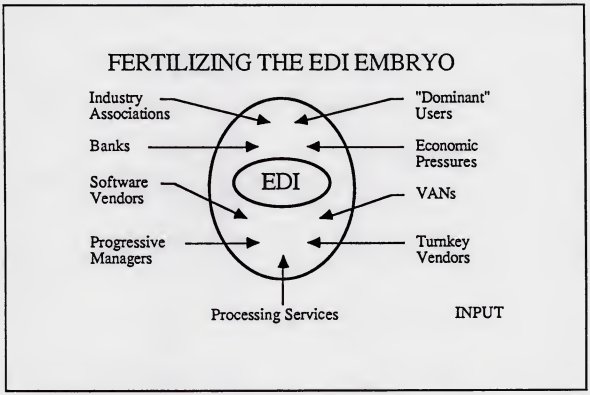
ETOK-106

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

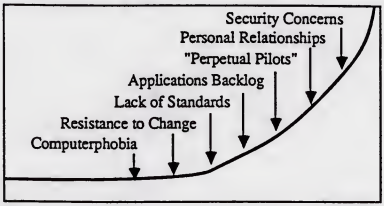
ETOK-107



NOTES:

ETOK-108

NEGATIVE FACTORS IMPACTING EDI



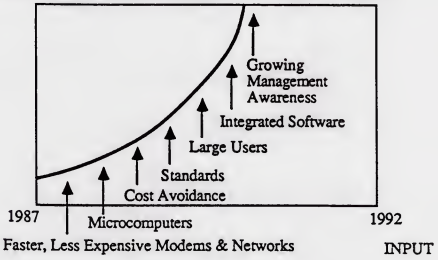
1987 1992

INPUT

NOTES:

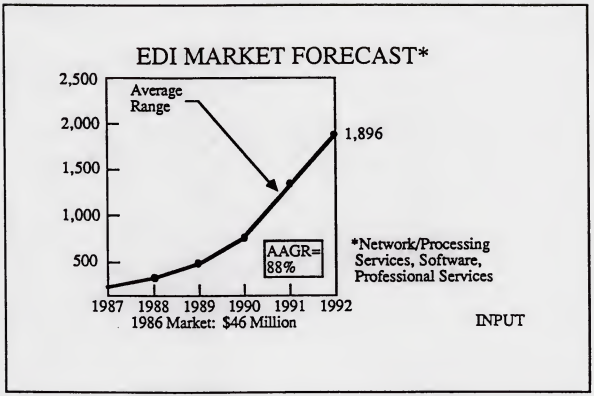
ETOK-109

POSITIVE FACTORS IMPACTING EDI



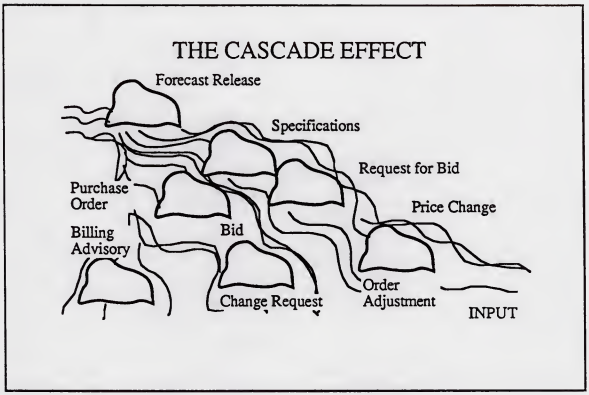
NOTES:

ETOK-110



NOTES:

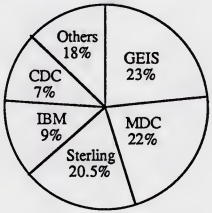
ETOK-111



NOTES:

ETOK-112

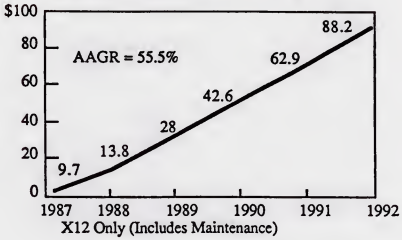
MARKET SHARE-SERVICES BY REVENUES 1986



INPUT

NOTES:

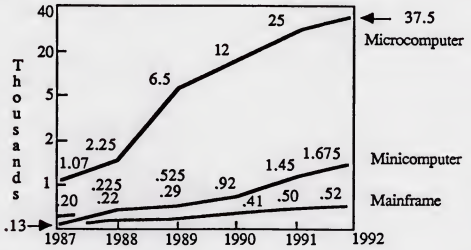
ETOK-113



INPUT

NOTES:

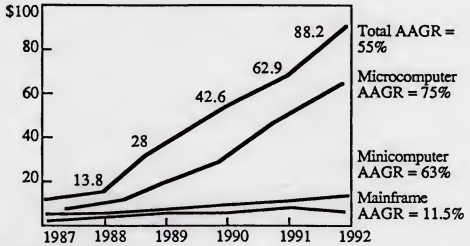
ETOK-114



NOTES:

ETOK-115

EDI SOFTWARE FORECAST - USER EXPENDITURES X12 ONLY



Includes Maintenance.

INPUT

NOTES:

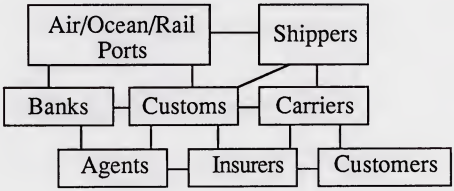
ETOK-116

INTERNATIONAL EDI - A FIRST LOOK

Victor S. Wheatman
Manager - EDI Planning Services
INPUT

ETOK-117

COMPLICATED TRADE INTERFACES



INPUT

NOTES:

ETOK-118

INTERNATIONAL TRADE DOCUMENTATION

- $6-8 billion per year (U.S.)
- $40 billion (world wide)
- 7 billion documents + copies
- .5 billion U.S. Customs documents/year
- Document fraud
  - $100 million/year (ICC)

INPUT

Notes:

ETOK-119

IMPORTANCE OF INTERNATIONAL TRADE

- Off shore sourcing
- Local content laws
- Expanding markets
- Global price, quality competition

INPUT

Notes:

THIRD-PARTY SERVICES' IEDI STRATEGIES

- Partnering, Agents
- Linking International Facilities
- Technology Licensing

INPUT

NOTES:

ETOK-121

POSITIONING FOR INTERNATIONAL EDI

- GEIS
  - Trade*Express
  - International Network Services Ltd. (with ICL)
- McDonnell Douglas
  - EDI II plan: licensing to PTTs, others
  - BT joint venture cancelled

INPUT

Notes:

ETOK-122

POSITIONING FOR INTERNATIONAL EDI

(continued)

- IBM
  - IN
  - Intercontinental Information Services
  - Greater European success than U.S.
- Western Union
  - 3rd Q EDI service expected
  - Leverage international capabilities
- Others
  - AT&T, Telenet, CSC, British Telecom

INPUT

Notes:

EDI RELATED ACTIVITIES

- Trade facilitation bodies
  - NCITD, others
- Automated Commercial System
  - Advanced clearance of most shipments
  - Automated Broker Interface (ABI)
  - Automated Manifest System (AMS)
- Harmonized System (HS)
  - Implementation 1/1/88
  - U.S. has yet to ratify

INPUT

Notes:

ETOK-124

EDI RELATED ACTIVITIES

(continued)

- EDIFACT
  - **Electronic invoice in testing**
  - **Other documents to follow**
- CARDIS
  - **U.S. Department of Transportation and NCITD**
- Electronic bills of lading
- Electronic letters of credit
  - **Chase, First Chicago, Irving, others**

INPUT

Notes:

ETOK-125

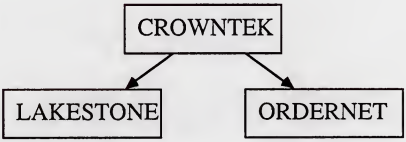
TELECOM CANADA

- Trade Route on Envoy 100
- Envoy 100 Links to TELENET, AT&T
- X.400 - Based
- No Network Translation

INPUT

NOTES:

ETOK -126



Software,
Professional
Services

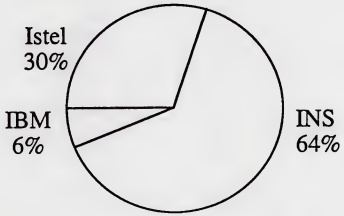
Network
Customers
Agent:
Management Horizons

INPUT

NOTES:

ETOK-127

1987 U.K. EDI MARKET
(Service/Revenues)



INPUT

NOTES:

ETOK-128

Korea

- DACOM
  - International Pilot
  - Sears (Canada), Others
- X12 Formats
- Intent: Link with All N. American EDI Services

INPUT

NOTES:

ETOK-129

Korea

- Steel VAN (POSCO)
- Auto (Establishing Industry Group)
- X.400 Pilot—Olympics
- Customs → EDIFACT

INPUT

NOTES:

ETOK-130

Singapore

TRADENET

- In Country Trade Community
- Proprietary Formats
- Government Projects

INPUT

NOTES:

ETOK-131

Hong Kong

HOTLINE

- Trade Council Initiative
- Also Banks, Air Carriers, Cable and Wireless, Ltd.
- Government Reluctant Participant in Study—Due Spring 1989

INPUT

NOTES:

ETOK-132

Hong Kong

HOTLINE

- Trade Council Initiative
- Also Banks, Air Carriers, Cable and Wireless, Ltd.
- Government Reluctant Participant in Study—Due Spring 1989

INPUT

NOTES:

ETOK-133

JAPAN'S EDI ENVIRONMENT

- Telecommunications Liberalizing
- Increasing Intercompany Networking
- No EDI Standards
- Heavy International FAX Use

INPUT

NOTES:

ETOK-134

Many VANs

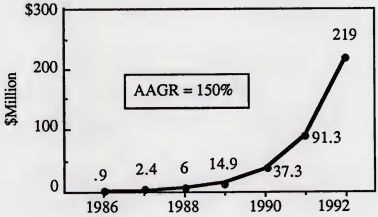
- Half with EDI-Type Services
- Leading EDI Service: NTT's Dress
- Some U.S. VANs Involved

INPUT

NOTES:

ETOK-135

U.S. USERS' EXPENDITURES FOR IEDI
(Network Processing Services Only)



INPUT

NOTES:

ETOK-136

IEDI: OPPORTUNITIES AND DIFFICULTIES

Opportunities

- U.S., Others "EDI Ready"
- Third-Party Providers Available
- Standards Evolving

INPUT

NOTES:

ETOK-137

Difficulties

- Transborder Data Flow Issues
- Business/Cultural Issues
- Incompatible Systems

Third Parties Can Bridge the Gap

INPUT

NOTES:

ETOK-138

CENTRAL RECOMMENDATIONS CREATE AWARENESS

- Promote the EDI Solution
- Adopt an EDI Symbol

INPUT

NOTES:

ETOK-139

USER RECOMMENDATIONS

- Sell EDI Internally and to Trading Partners
- Build EDI onto On-Line Order Entry or Other Information Systems
- Use Development Assistance From Third Parties and Industry Associations to Minimize Risks

INPUT

NOTES:

ETOK-140

EDI RECOMMENDATIONS: THIRD-PARTY SERVICES

- Use EDI to Keep Customers
- Investigate Trade Association EDI Initiative in Unserved Segments
- Integrate EDI with E-mail Hardcopy Output
- Integrate EDI with Internal Forms Processing
- Create New Data Bases From EDI Transactions

INPUT

NOTES:

ETOK-141

SOFTWARE VENDOR RECOMMENDATIONS

- Offer a Full Line of Solutions
- Develop Alliances
- Enhance Products
  - Data Bases
  - EFT
  - Electronic Forms
  - Integrated Applications

INPUT

NOTES:

ETOK-142

SOFTWARE VENDOR RECOMMENDATIONS

(Cont.)

- Investigating Non-IBM Solutions
  - e.g., Macintosh
- Develop Professional Services Capability

INPUT

NOTES:

ETOK-143

Victor S. Wheatman
Manager, EDI Planning Service
INPUT

Victor Wheatman 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. degree from Fairleigh Dickinson University, an M.S. degree in Communications from Boston University, and a Graduate Certificate in Telecommunications Management from Golden Gate University.