

Electronic Data Interchange

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

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JJ88-VW1-1



Varieties of EDI

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

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JJ88-VW1-2



EDI—The Year Past

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

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JJ88-VW1-3



EDI—The Year Past



Observations



EDI as Religion



"Missionary Sell"

Dedicated Volunteers

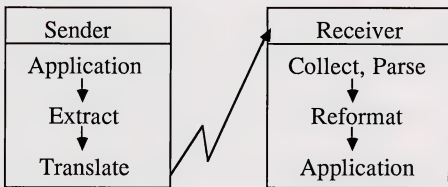
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JJ88-VW1-4



EDI/Application Integration



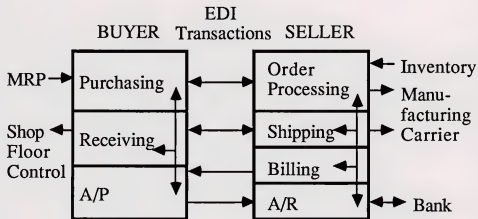
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JJ88-VW1-5



EDI/Application Integration



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JJ88-VW1-6



EDI Stimulated Development

\$ 44 K (\$3,000—\$250,000)

10 Months (2 Weeks—3 Years)

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JJ88-VW1-7



EDI/Application Integration

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

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JJ88-VW1-8

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice to ensure transparency and accountability. This is particularly crucial for businesses that handle large volumes of cash or credit sales.

2. The second section outlines the various methods used to collect and analyze financial data. It includes a detailed description of the accounting cycle, from identifying transactions to preparing financial statements. The text also covers the use of spreadsheets and specialized accounting software to streamline these processes and reduce the risk of human error.

3. The third part of the document focuses on the role of internal controls in preventing fraud and mismanagement. It provides a list of key control points, such as segregation of duties, regular audits, and secure storage of financial records. These measures are essential for protecting the organization's assets and maintaining the integrity of its financial reporting.

4. The final section discusses the impact of financial management on the overall success of a business. It highlights how sound financial practices can lead to better decision-making, improved cash flow, and long-term sustainability. The document concludes with a call to action, encouraging all stakeholders to take responsibility for the financial health of the organization.

5. The first part of this section introduces the concept of budgeting as a tool for financial planning. It explains how a well-defined budget can help a business anticipate future needs, allocate resources effectively, and track performance against targets. The text provides a step-by-step guide to developing a budget, from setting goals to monitoring progress.

6. The second part of this section explores the relationship between financial management and risk management. It discusses how financial data can be used to identify potential risks, such as market fluctuations or operational inefficiencies, and to develop strategies to mitigate them. This proactive approach is vital for ensuring the resilience of the business in a competitive environment.

7. The third part of this section addresses the importance of financial communication. It emphasizes the need for clear and concise reporting to management and other stakeholders. The text provides examples of effective financial statements and discusses the role of financial analysts in interpreting the data and providing strategic insights.

8. The final part of this section discusses the role of financial management in the overall business strategy. It highlights how financial goals should be aligned with the organization's long-term vision and mission. The document concludes with a summary of the key takeaways and a final call to action, urging all stakeholders to work together to achieve the organization's financial and operational objectives.

EDI/Application Integration

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

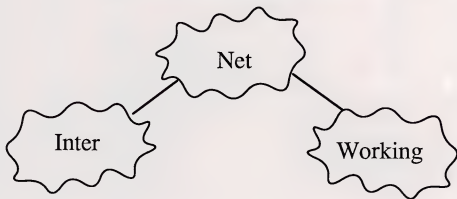
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EDI Intertrend #2



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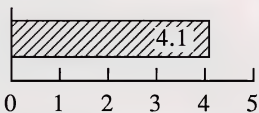
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JJ88-VW1-10



Internetworking

Importance



30% Use Multiple Nets

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JJ88-VW1-11



EDI Intertrends #3



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JJ88-VW1-12

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EDI Internationalization

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

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JJ88-VW1-13

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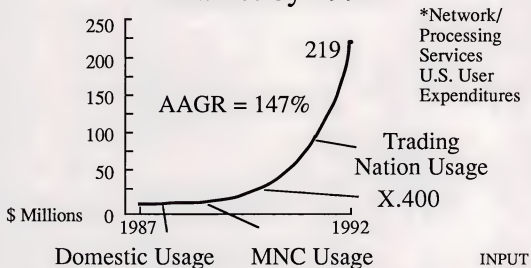
1947

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IEDI Services*—A \$219 Million Market by 1992

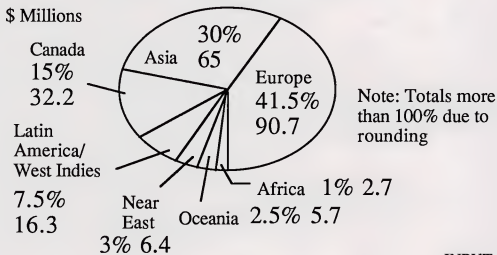


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JJ88-VW1-14



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



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JJ88-VW1-15



EDI Case Study

Levi-Strauss

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JJ88-VW1-16



Levi-Strauss

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

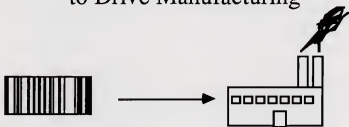
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JJ88-VW1-17



Levi-Strauss

Key Concept:
Capture POS Data
to Drive Manufacturing



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JJ88-VW1-18



Levi-Strauss

Retail Services:

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

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JJ88-VW1-19

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud. The text notes that without reliable records, it would be difficult to track the flow of funds and identify any irregularities.

2. The second part of the document outlines the specific procedures for recording transactions. It details the steps involved in entering data into the system, including the use of standardized codes and the requirement for double-checking entries. The text also discusses the importance of regular audits and reconciliations to ensure that the records are accurate and up-to-date. It concludes by stating that adherence to these procedures is crucial for the success of the financial management process.

Levi-Strauss

Benefits:

- Improved Turns
- Fewer Stock Outs
- Enhanced Retailer Relations

INPUT

JJ88-VW1-20

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent data collection procedures and the use of appropriate statistical techniques to interpret the results.

3. The third part of the document focuses on the role of management in overseeing the data collection and analysis process. It stresses the importance of providing clear instructions and support to the staff involved in these activities.

4. The fourth part of the document discusses the challenges and limitations of data collection and analysis. It identifies common issues such as data quality, sample bias, and the complexity of interpreting results, and offers strategies to address these challenges.

5. The fifth part of the document concludes by summarizing the key findings and recommendations. It reiterates the importance of a systematic and rigorous approach to data collection and analysis, and encourages ongoing evaluation and improvement of the process.

EDI Case Study

First National
Bank of Chicago

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JJ88-VW1-21



First Chicago

President's Mandate:

"We Will Do EDI"

- Purchasing
- Potential Service

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JJ88-VW1-22



First Chicago

1985: No Supplier Was Ready

So: Loaned Software
Underwrote Costs
Free Training & Installation

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JJ88-VW1-23



First Chicago

Cost Benefit Analysis (1985):

Would Cost More—Not Less

- Dual Systems
- But Costs have Moderated

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JJ88-VW1-24



First Chicago

Implementation

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

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JJ88-VW1-25



First Chicago

Transactions

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

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JJ88-VW1-26

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud. The text notes that without reliable records, it would be difficult to verify the accuracy of financial statements and to identify any irregularities.

2. The second part of the document outlines the specific requirements for record-keeping. It states that all transactions must be recorded in a clear and concise manner, using a standardized format. This includes recording the date, amount, and nature of the transaction, as well as the names of the parties involved. The document also stresses the importance of retaining records for a sufficient period of time to allow for future audits and investigations.

3. The third part of the document discusses the role of internal controls in ensuring the accuracy of records. It explains that internal controls are designed to prevent errors and fraud by establishing a system of checks and balances. This includes separating duties, requiring authorization for transactions, and conducting regular reconciliations. The document notes that strong internal controls are a key factor in the reliability of financial records.

4. The fourth part of the document addresses the issue of data security. It highlights the need to protect financial records from unauthorized access, loss, or destruction. This can be achieved through the use of secure storage methods, such as encrypted databases and firewalls, as well as strict access controls and regular backups. The document also emphasizes the importance of training employees on data security best practices.

5. The fifth and final part of the document concludes by reiterating the importance of accurate record-keeping and the role of internal controls and data security in ensuring the integrity of the financial system. It encourages all stakeholders to take a proactive approach to record-keeping and to continuously monitor and improve their internal controls and data security measures.

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First Chicago

Benefits

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

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JJ88-VW1-27



EDI Case Study
Hewlett Packard

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JJ88-VW1-28



H-P

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

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JJ88-VW1-29

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H-P

EDI Approach

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

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JJ88-VW1-30



H-P

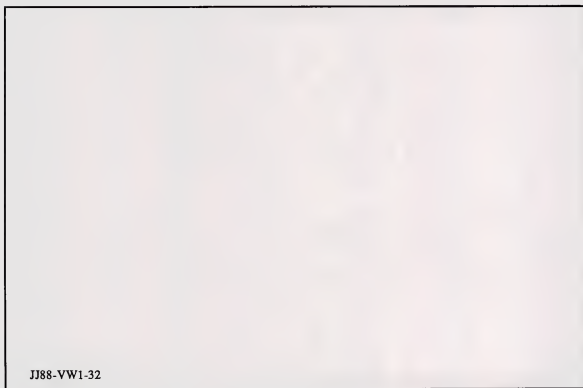
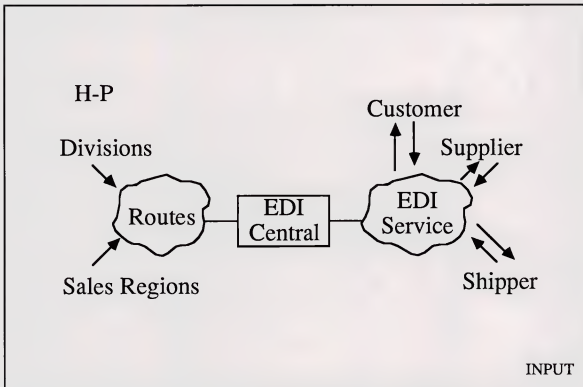
EDI Goals

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

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JJ88-VW1-31







H-P

Recommendations

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

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JJ88-VW1-33



EDI/Sales Side

Sales Staff Issues

- Fear of Change
- Compensation Issues

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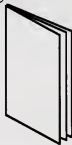
JJ88-VW1-34



EDI/Sales Side

Sales Staff Issues

Management Response:



EDI Sales Policy

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JJ88-VW1-35



EDI/Sales Side

EDI Sales Policy

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

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JJ88-VW1-36

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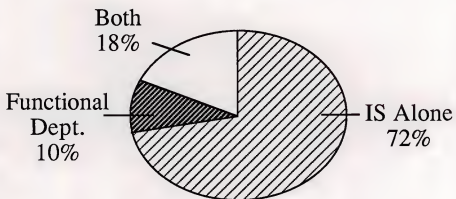
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Who Implements EDI (EDI Managers)



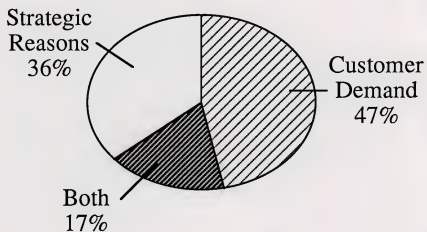
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Why Was EDI Implemented?



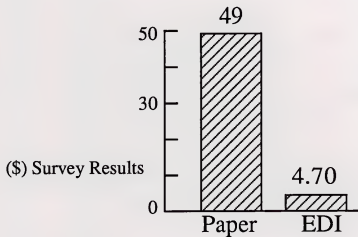
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Paper versus Electronic Transactions



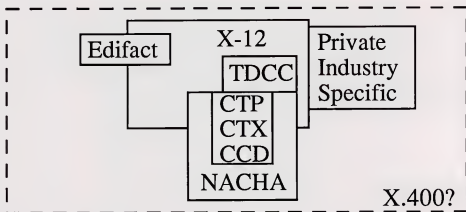
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EDI Standards Relationships



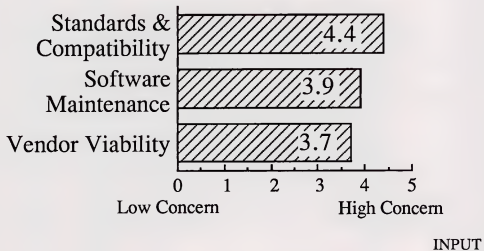
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NOTES:

JJ88-VW-40



EDI User Issues and Concerns

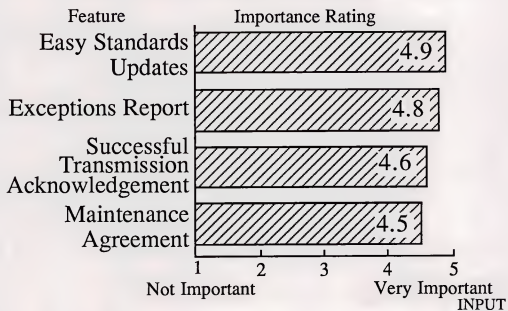


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JJ88-VW1-41



Software Features Importance



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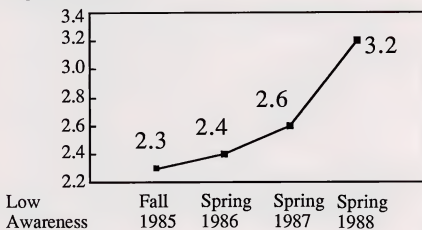
JJ88-VW1-42



Forecast Factors

EDI Awareness Is Growing

High Awareness



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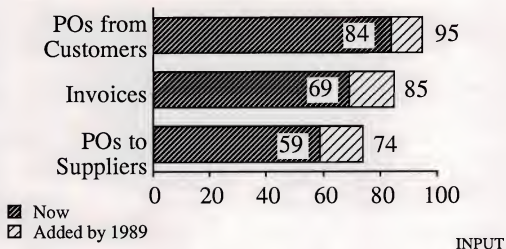
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JJ88-VW1-43



Forecast Factors

Transaction Type Growth (Percent)



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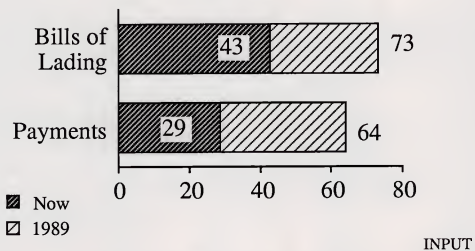
JJ88-VW1-44

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
5800 S. UNIVERSITY AVENUE
CHICAGO, ILLINOIS 60637
TEL: 773-936-3700
FAX: 773-936-3701
WWW: WWW.CHEM.UCHICAGO.EDU

1. Name of the donor: _____
2. Address: _____
3. City: _____ State: _____ Zip: _____
4. Telephone: _____
5. Date of gift: _____
6. Description of gift: _____
7. Value of gift: _____
8. Name of the recipient: _____
9. Address of recipient: _____
10. City: _____ State: _____ Zip: _____
11. Telephone: _____
12. Date of receipt: _____
13. Name of the recipient's institution: _____
14. Address of recipient's institution: _____
15. City: _____ State: _____ Zip: _____
16. Telephone: _____
17. Name of the recipient's department: _____
18. Address of recipient's department: _____
19. City: _____ State: _____ Zip: _____
20. Telephone: _____

Forecast Factors

Transaction Type Growth (Percent)

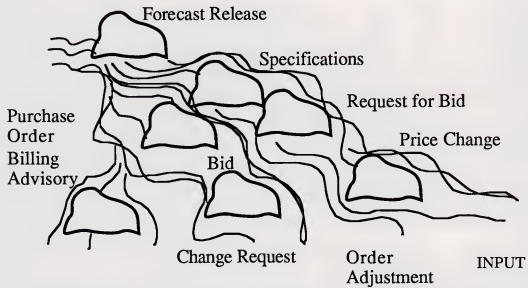


NOTES:

JJ88-VW1-45



The Cascade Effect

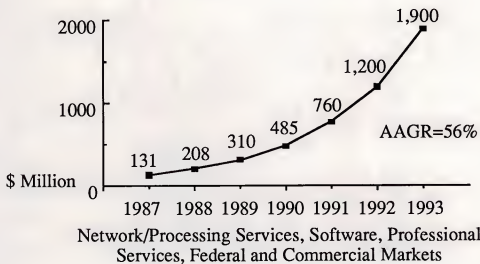


NOTES:

JJ88-VW1-46



EDI Market Forecast



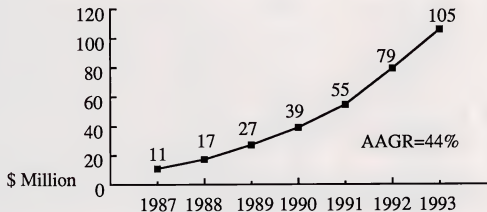
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JJ88-VW1-47



Commercial EDI Software Market



Excludes EMC, Interface

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JJ88-VW1-48



EDI Software Market

Market "Leadership" up for Grabs

Non IBM Platforms Being Addressed
- DEC, HP, OLTP

The Professional Services Opportunity

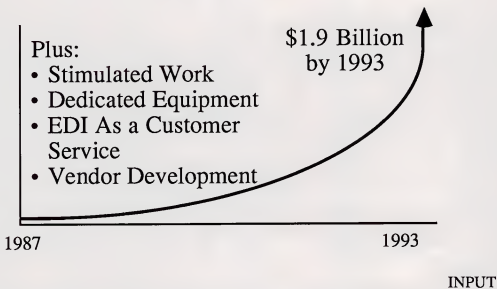
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JJ88-VW1-49



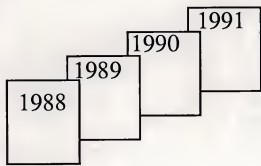
The EDI "Shadow" Market



JJ88-VW1-50



EDI—The Years Ahead



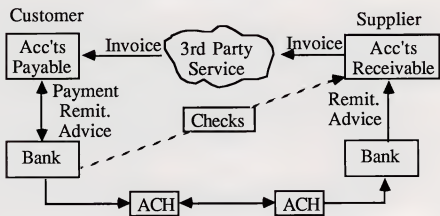
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JJ88-VW1-51



Banks in EDI



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JJ88-VW1-52



EDI Intertrend #4

Standards



Interfusion

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NOTES:

JJ88-VW1-53



EDI—The Year(s) Ahead

Services—New Entrants

- ADP
- BOCs
- NDC
- EDS

"Secondary" Players Find Niches

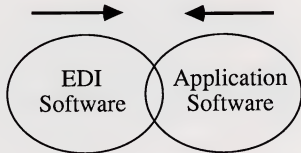
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JJ88-VW1-54



EDI Opportunities Software



Tighter Integration

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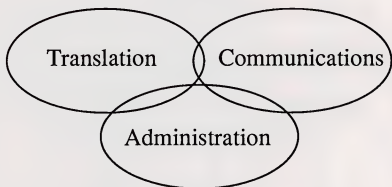
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JJ88-VW1-55



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

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JJ88-VW1-57



EDI Opportunities

Network Services

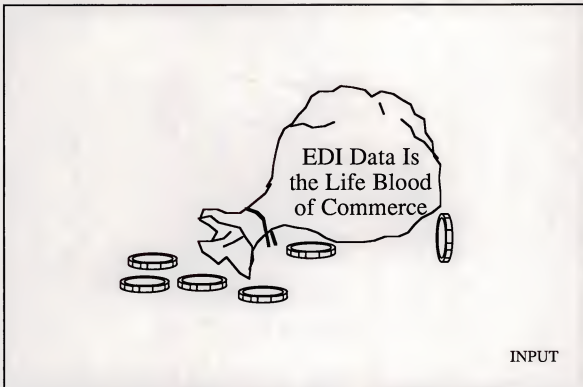
- Untapped/Underdeveloped Markets
- Current Customer Development
- Value-Added Services

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NOTES:

JJ88-VW1-58





NOTES:

JJ88-VW1-59



INPUT

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

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NOTES:

ECON-VW-7



EDI—The Year Past

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

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ECON-VW-1a



EDI—The Year Past



Observations



EDI as Religion



"Missionary Sell"

Dedicated Volunteers

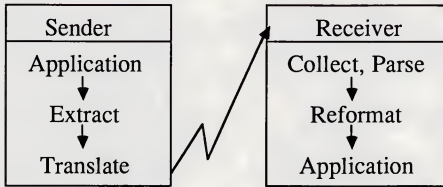
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ECON-VW-4



EDI/Application Integration



INPUT

NOTES:

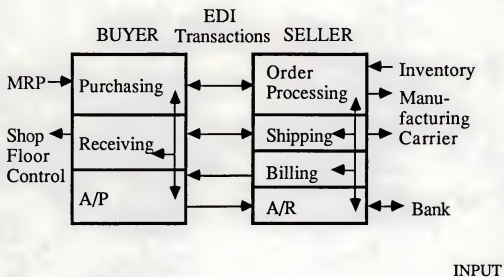
ECON-VW-9

5

9



EDI/Application Integration



NOTES:

ECON-VW-10



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

3

12



EDI/Application Integration

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

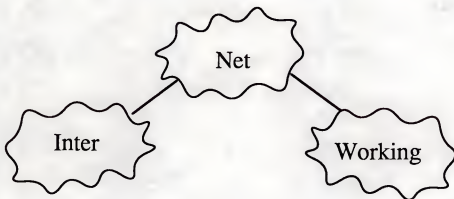
INPUT

NOTES:

ECON-VW-12a



EDI Intertrend #2



INPUT

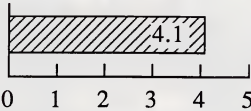
NOTES:

ECON-VW-16



Internetworking

Importance



30% Use Multiple Nets

INPUT

NOTES:

ECON-VW-18



EDI Intertrends #3



INPUT

NOTES:

ECON-VW-23

12



EDI Internationalization

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

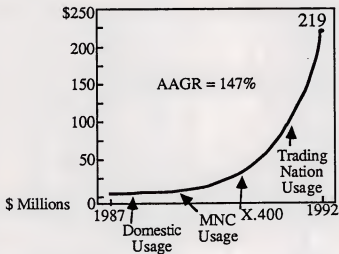
INPUT

NOTES:

ECON-VW-24



IEDI Services*—A \$219 Million Market by 1992



*Network/
Processing
Services

*U.S. User
Expenditures*

INPUT

NOTES:

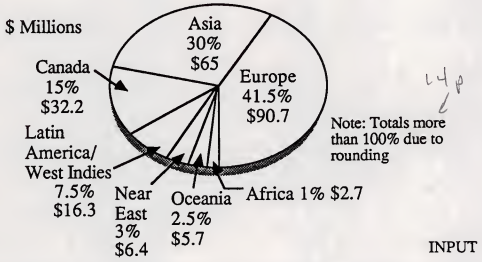
ECON-AG-10

14



remove \$
make → = -

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



NOTES:

ECON-AG-28

15



EDI CASE STUDY
LEVI-STRAUSS

INPUT

USM1-VW-21



Levi-Strauss

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

INPUT

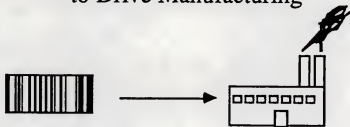
USM1-VW-22

17



Levi-Strauss

Key Concept:
Capture POS Data
to Drive Manufacturing



INPUT

USM1-VW-23



Levi-Strauss

Retail Services:

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

INPUT

USM1-VW-24



Levi-Strauss

Benefits:

- Improved Turns
- Fewer Stock Outs
- Enhanced Retailer Relations

INPUT

USM1-VW-25



EDI CASE STUDY

**FIRST NATIONAL
BANK OF CHICAGO**

INPUT

USM1-VW-26



First Chicago

President's Mandate:

"We Will Do EDI"

- Purchasing
- Potential Service

INPUT

USM1-VW-27



First Chicago

1985: No Supplier Was Ready

So: Loaned Software
Underwrote Costs
Free Training & Installation

INPUT

USM1-VW-28



First Chicago

Cost Benefit Analysis (1985):

Would Cost More—Not Less

- Dual Systems
- But Costs have Moderated

INPUT

USM1-VW-29



First Chicago

Implementation

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

INPUT

USM1-VW-30



First Chicago

Transactions

	<u>Electronic</u>	<u>Paper</u>
1986	1,200	1 million
1987	4,800	
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



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

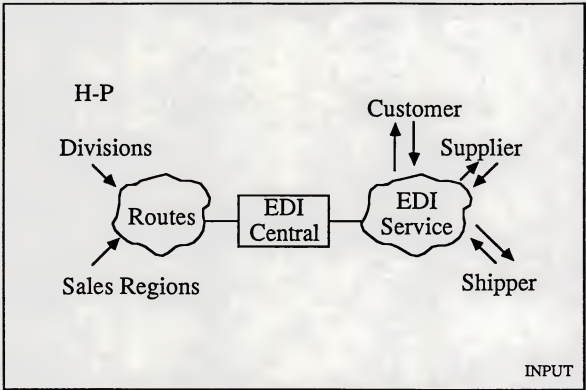
EDI Goals

- Industry Leader
- Improve Customer ^{satisfaction} Satisfaction
- "One Company" Image
- Eliminate Duplication

INPUT

USM1-VW-36





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



EDI/Sales Side
Sales Staff Issues
Management Response:



EDI Sales Policy

INPUT

NOTES:

EQAD-GE-4

35



EDI/Sales Side

EDI Sales Policy

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

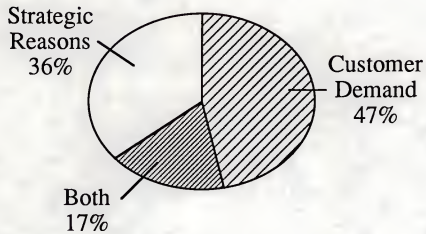
INPUT

NOTES:

EQAD-GE-5



Why Was EDI Implemented?



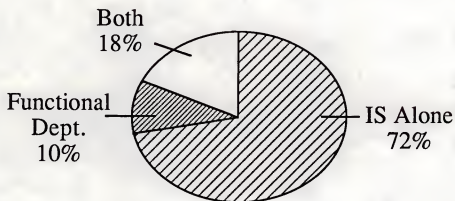
INPUT

NOTES:

ECON-VW-26



Who Implements EDI (EDI Managers)



INPUT

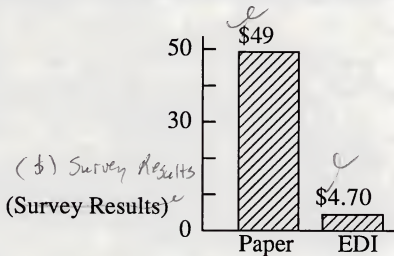
NOTES:

ECON-VW-27

38



Paper versus Electronic Transactions



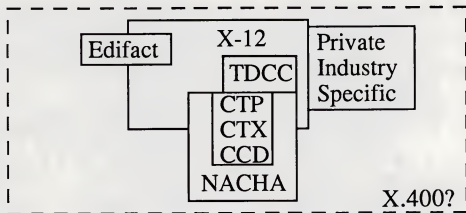
INPUT

NOTES:

ECON-VW-28



EDI Standards Relationships



INPUT

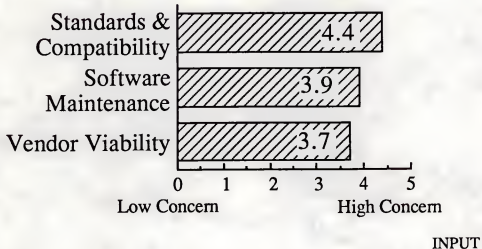
NOTES:

ECON-VW-29

40



EDI User Issues and Concerns

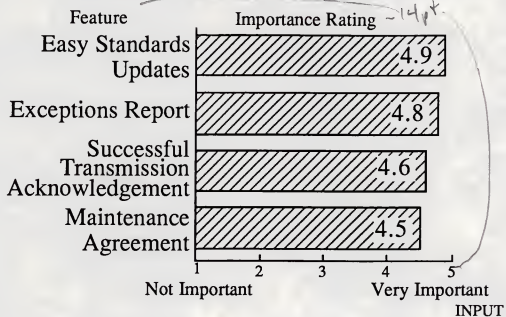


NOTES:

ECON-VW-30



Software Features Importance



NOTES:

ECON-VW-34

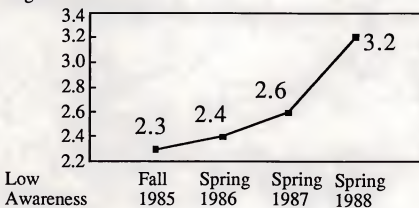
42



Forecast Factors

EDI Awareness Is Growing

High Awareness



Low
Awareness

Fall
1985

Spring
1986

Spring
1987

Spring
1988

INPUT

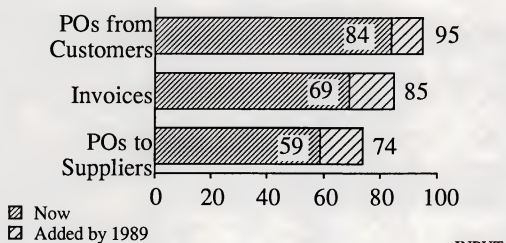
NOTES:

ECON-VW-36



Forecast Factors

Transaction Type Growth (Percent)



NOTES:

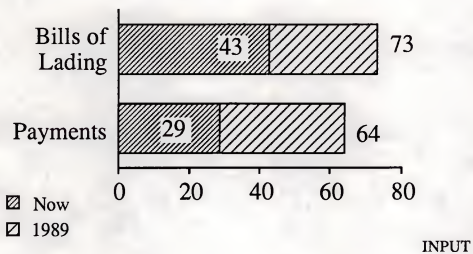
ECON-VW-39

44



Forecast Factors

Transaction Type Growth (Percent)

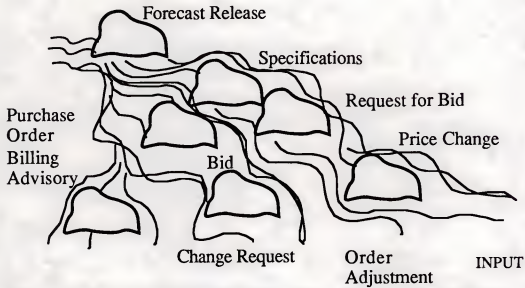


NOTES:

ECON-VW-40



The Cascade Effect



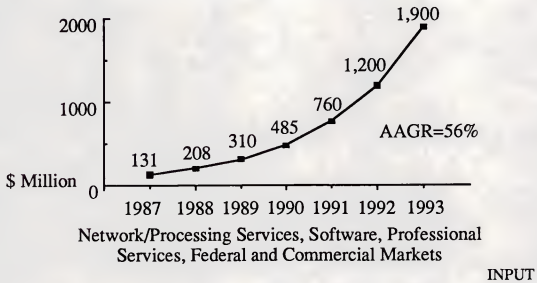
NOTES:

ECON-VW-41

46



EDI Market Forecast

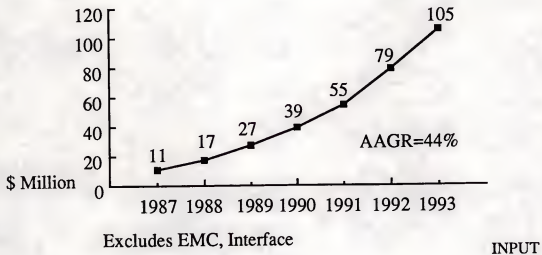


NOTES:

ECON-VW-43



Commercial EDI Software Market



NOTES:

ECON-VW-46



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



EXHIBIT VI-12

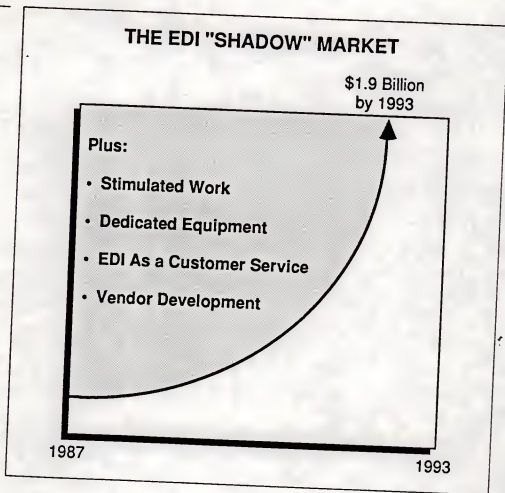
**C****Forecast
Reconciliation**

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

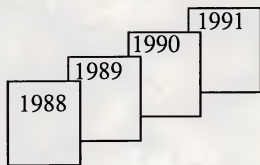
The current forecast shows a higher present market sizing and maintains a substantial average annual growth rate throughout the forecast period, but at a lower level than previously forecast. There are several reasons for this change:

- 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

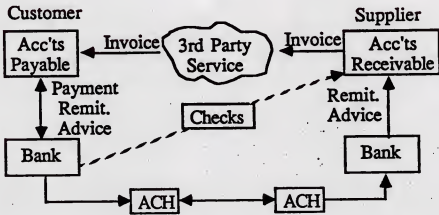
NOTES:

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
- BOCs
- NDC
- EDS

"Secondary" Players Find Niches

INPUT

NOTES:

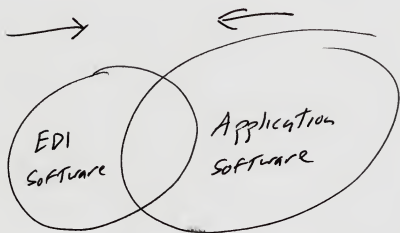
ECON-VW-55

54



EDI OPPORTUNITIES

SOFTWARE

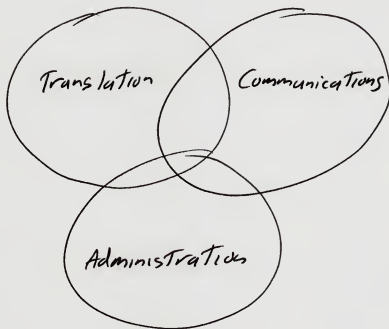


[even size]

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

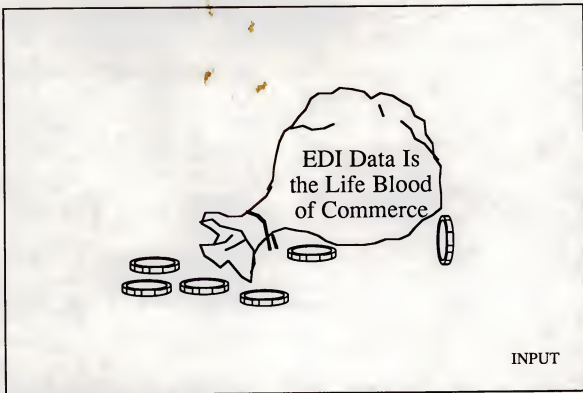
- o Un Tagged / Under developed Markets

~~Mortgage Banking~~ - Insurance
~~Fresh Foods~~
~~Localized Services~~

- o Current Customer Development

o VALUE ADDED SERVICES





NOTES:

ECON-VW-56

59

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