



Electronic Data Interchange (EDI)

Atul Kahate

akahate@gmail.com



EDI and XML

- XML is a data description language
- It has its roots in EDI
- EDI technology is still in use, but is being replaced with XML



What is EDI?

- Electronic Data Interchange (EDI)
 - Related to the history of XML
 - Document exchange standard
 - e.g. Purchase Order (PO), Sales Order (SO)
 - Documents are inter-related
 - But their formats differ!
 - Aims at:
 - Making formats uniform
 - Document exchanges easier



EDI Example

- Company A wants to buy spare parts from company B
 - Company A prepares a Purchase Order (PO)
 - Sends it to company B
 - Company B sends the goods, and a Sales Order (SO) to B
 - *Formats of the SO and the PO differ*



EDI's Role

- Take care of all such mismatches
- Make document exchange easier
- Make it electronic
 - Hence the name *Electronic* Data Interchange (EDI)



EDI Definition

- Exchange of business documents such as Purchase Orders (PO), Invoices, etc in an electronic format



EDI Characteristics

- Happens electronically (like emails)
- Little or no manual intervention
- Very fast and accurate
- Little or no clumsy paperwork



EDI Usage

- Started in the 1960s
- Used mainly by very large organizations
 - Doing business with suppliers/customers
- Slowly getting replaced by transactions over the Internet



EDI History

- Has roots in another innovation
- 1964, Sales Manager at American Hospital Supply Company (AHSC)
 - Developed a system for its customers (i.e. hospitals)
 - Use of punched cards for placing orders



Value Added Network (VAN)

- Private Networks
- Communications layer over the basic network infrastructure
- Similar to how all parties communicating using emails would need SMTP

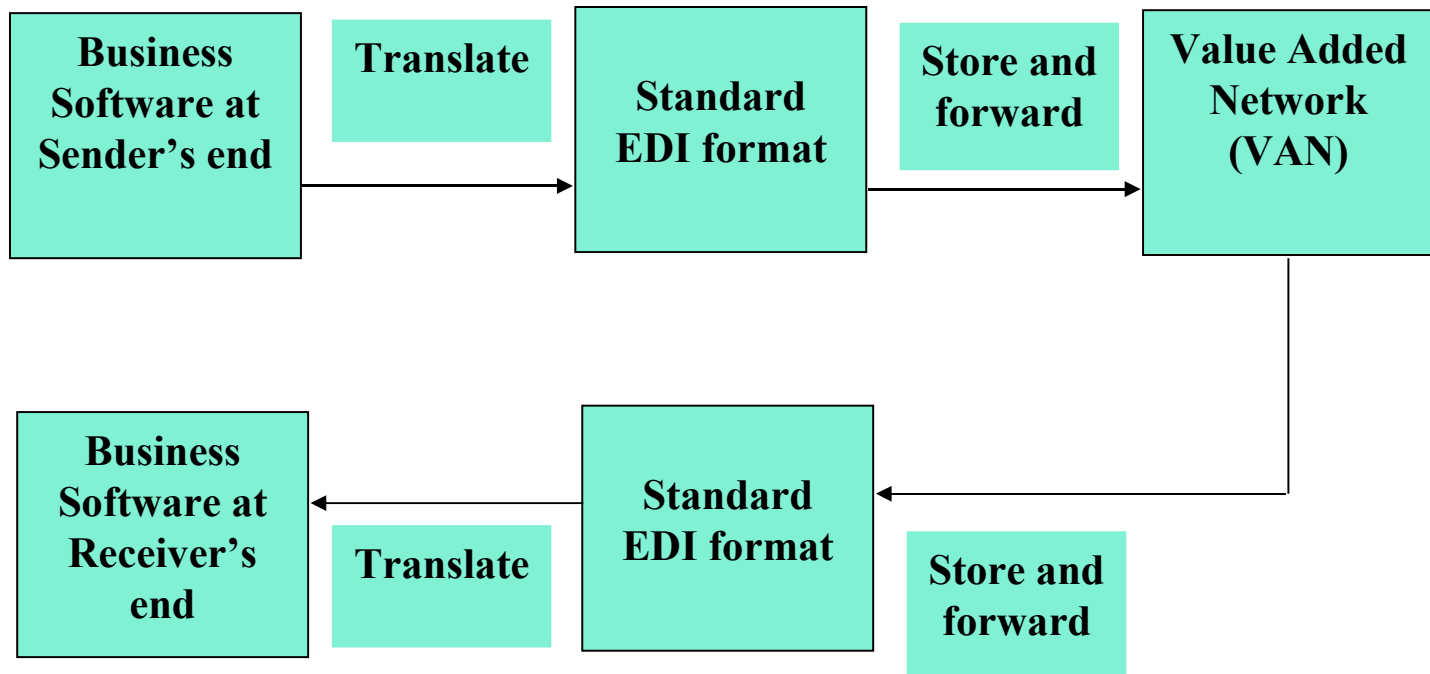


VAN Provider

- Similar to an Internet Service Provider (ISP)
- Provides VAN
- Maintains *mailboxes* for all the EDI users
- Stores and forwards messages between EDI users



EDI Architecture Diagram





VAN Approaches

- Third-party
 - Preferred method
 - More costly
- In-house
 - Complicated
 - May be cheaper



EDI Types

- No EDI
- Partially Integrated EDI
- Fully Integrated EDI



Sample EDI Document

Interchange Control Header – Electronic Envelope

Functional Group Header – Purchase Order

Transaction Set Header – Purchase Order A100

Data Segment Header – Source

Data Element – Terms of Transaction

Data Element – Date and Time

Data Segment Header – Details

Data Element – Item Number

Data Element – Item Description

Data Element – Item Quantity

Data Element – Item Price

Transaction Set Footer – Purchase Order A100

Functional Group Footer – Purchase Order

...

...

Interchange Control Header – Electronic Envelope



EDI Data Formats

- Decided by ANSI
 - ANSI ASC X12 in North America
 - EDIFACT in Europe
- Efforts are on to merge the two



EDI Advantages

- Reduced lead-time
- Reduction in number of errors
- Reduction in processing costs overall
- Availability of information at all times
- Planning becomes easier
- Long-term relationships between trading partners



EDI Drawbacks

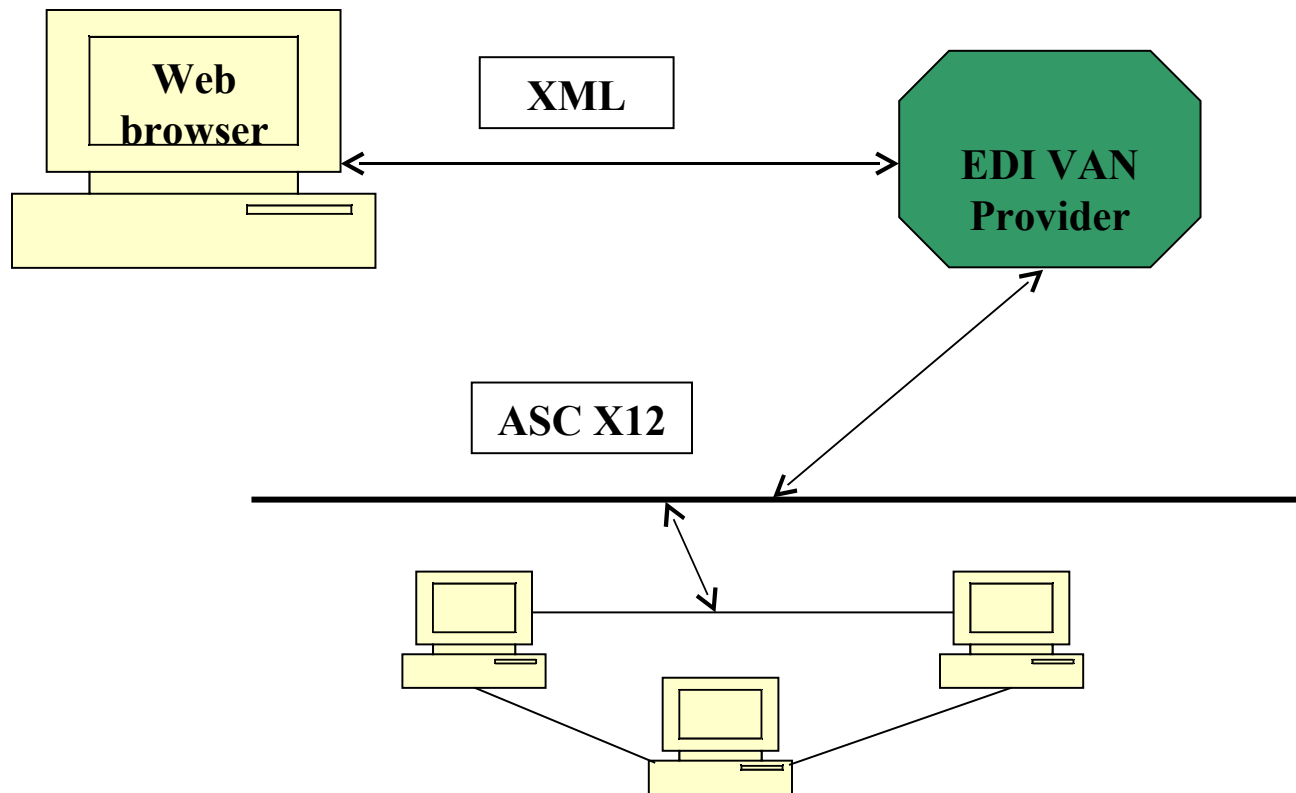
- Very high initial costs
- Barrier to entry
- Not using EDI is also a problem
- Technologically non-savvy companies cannot use EDI with ease



Emerging Trends

- Use of EDI over the Internet
- Allows smaller players to use EDI
- Substantial reduction in costs
- Use of XML

EDI and the Internet





Thank you!

Any Questions?