

Unit-4

Business to Business e-commerce

Business to Business e-commerce is the largest form of e-commerce. It is e-commerce between two organizations. Companies are now mutually buying and selling products and services on the internet.

- It is a network of independent organizations involved in a business or an industry.
- With B2B e-commerce, supply-chain participants are directly connected.
- B2B offers unique benefits such as less human intervention, less overhead expenses, fewer error, more efficiency, new markets.

Features of B2B e-commerce:-

- In B2B e-commerce, business uses a web browser to interact with application of another business.
- The relationship focuses on online procurement, order-fulfillment, and work-in-progress tracking.
- Multiple forms of electronic payment and other payment methods are permitted.
- There are agreements between partners involved in B2B e-commerce.

Inter-Organizational Transaction

- Inter-organizational Transaction e-commerce refers to e-commerce that can occur between two organizations.
- Companies are now mutually buying and selling products and services on the internet.
- Inter-organizational e-commerce reduce transaction costs, increase availability of product and suppliers and reduce dependencies on a few trading partners.
- They offer many secondary services for integrating purchasing, distribution, and inventory processes. Thus, it allows for better inventory management, quality control, and supply chain processes.
- It includes companies doing business with one another with the goal to save money on purchases that can be negotiated easily.
- Manufactures buy raw material or components from their suppliers, assemble them into new products and sell them to their customers. Retailers make a great number of transactions and the whole operation of their business is dependent on their effective execution.

Credit Transaction Trade Cycle

Most inter-organizational trade transactions take place as a part of an established, ongoing trade relationship.

The trade cycle for inter-organizational transactions is generally a credit trade cycle. The stages in credit trade cycle are:

1.Pre-sales:-

- Before trading starts, the two organizations need to make contact (search) and agree on trading terms (negotiate). The customer organization may go out to tender or simply contact a firm it knows.
- The supplying firm may want to run credit checks on the customer. Both organizations will need to agree on the price of goods, conditions of delivery and terms of payment.

2.Execution:-

- Execution consists of requesting the goods (order) and then collecting or receiving them (delivery). For most suppliers, firms will have formal purchasing procedures-order originate from a purchasing department.
- The delivery of the goods is also formalized- goods come with a delivery note that is cross-checked manually or electronic with the original purchase order to complete the stage.

3.Settlement:-

- The supplier of the goods has to be paid with an inter-organizational transaction that usually takes place after delivery.

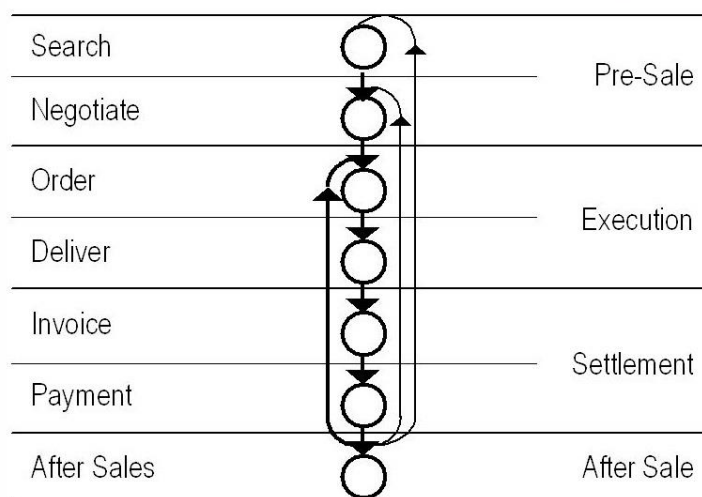
- The supplier requests payment (invoice) and customer settle account by making the payment.

4.After-sales:-

- In any transaction, there can be problems, damaged or faulty goods, and these issues are sorted out after the execution phase.
- For items like machinery, there can be an ongoing process of warranty or maintenance (after sales).

The stages of this trade cycle are shown below -

Credit transaction trade cycle



Many inter-organizational transactions will be repeated on a regular basis. For example, the produce purchases of the retailer and the component orders of a vehicle assembler- this is shown by the loop of the execution and settlement stages.

Variety of Transaction in Inter-Organizational

There are many organizations and there is a variety of transactions that take place. The organizations range from large supermarket chain to local corner shop.

A variety of transactions that can take place are:

- Discrete transactions of commodity items.
- Repeat transactions of commodity items.
- Discrete transactions of non-commodity items.

Electronic Markets:-

Electronic market is an inter-organizational information system that allows participating buyers and sellers to exchange information about prices and product.

Electronic markets provide efficient mechanism to compare commodity product and find suitable supplier.

Electronic Data Interchange (EDI):-

EDI is electronic exchange of business documents in standard, computer-processable, universally accepted format between partners. EDI comes into its own once supplier is located and terms of trade arranged.

Internet Commerce:-

In addition to large purchases, organizations will be making consumer-style purchases e.g. stationery purchases. Such purchases are not subject of electronic markets and do not justify an EDI system but they can be undertaken using e-commerce facilities on internet.

Electronic Data Interchange (EDI)

EDI may be defined as transmission of business data in structured, electronic format from a computer application in one business format to a computer application in another.

The transfer of structured data, by agreed message standards, from one computer system to another, by electronic means.

Components of EDI System

EDI elements which are essential to an EDI system:

1. **Structured Data:** –EDI transactions are composed of codes, values, short pieces of text. Each element has strictly defined purpose. For example, an order has codes for customer, product, quantity ordered.
2. **Standard document format:** The EDI transaction has to have a standard format. The standard is not just agreed between trading partner but is a general standard agreed at a national or international level.
3. **From one Computer System To Another:** The EDI message sent is between two computer applications. There is no requirement for people to read message or re-key it into a computer system.
4. **Network:** The EDI message is sent electronically i.e. by using networks specifically designed for EDI.

5. EDI Translation Management Software:

Software used to convert the document of your application format into agreed standard format.

6. EDI Agreement: EDI agreement is a document signed by both trading partners before electronic trading begins.

Benefits of EDI

1.Speed:-Information moving between computers moves rapidly and no human intervention. Sending an electronic message across country takes minutes.

2.Improved problem resolution:-EDI responds quickly to business enquiries and transfers documents automatically to ensure accuracy and consistency.

3.Streamlines the information flow:-EDI helps in streamlining of goods, invoice preparation and transmission can all be done within a few hours.

4.Reduces redundancy:-Trading partners file copies of same document at multiple places. EDI eliminates need for multiple copies and reduces redundancy.

5.Reduces Lead Time:-Exchange of documents among trading partners happens electronically through interconnected computers, a lot of time is saved.

6.Easy retrieval of older documents:-All documents exchanged between trading partners are stored in an

electronic mailbox, documents can be accessed, retrieved at any point of time.

7.Improvements in overall quality:-EDI brings improvements in overall quality by providing better record keeping, fewer errors, reduction in processing time, less dependent on human.

8.Reduces errors:-The direct electronic transfer of documents between inter-organizational systems eliminate chances of errors.

9.Provides better information for management decision making:-It provides accurate information and audit trails for transactions, enabling businesses to identify area for improvement and cost reduction.

10.Expands the market reach:-By using EDI network, many opportunities open up for supplying the material to other suppliers who are also a part of the network.

11.Increases revenue and sales:-Large organizations use EDI and trade with other EDI-enabled suppliers. The reduced transaction cost saves money and supplier is in a better position to offer items at cheaper costs, which leads to improved revenue and sales.

12.Cost reduction and time-saving:-By elimination unnecessary paperwork, information flow becomes more efficient. For example seller's EDI computer sending electronic billing eliminates paper invoices.

13.Improved customer service:-EDI can improve customer service by enabling quick transfer of business documents reducing errors and providing an automatic audit trail.

14.Accuracy with Integrity:-Eliminating data entry means improved accuracy in the way data are processed. This contributes to the integrity and reliability of the business processes.

15.Planning and forecasting:-By using EDI for forecasting and planning, companies are able to get forward of likely orders and thus it can plan the production and stock levels accordingly.

16.Accurate invoicing:-EDI invoice automatically match against original order and payment thereby avoiding all queries that arise when paper invoices are matched to order.

EDI Standards

- When e-business started, need for common standards was felt as there were many different types of computer systems and different ways of storing data.
- Since sender and receiver in the EDI systems had to exchange business documents that could be used by all parties, it became necessary to develop standards in EDI.

- Many independent or industry-specific standards were developed to address the requirements of each industry segment.
- But, a large number of businesses operated across various industry segments. Thus, the cross-industry standards were required to provide a smooth functioning of EDI systems.
- Over a period of time, two major EDI standards have evolved.
 - The first one is **X12** which was developed by the Accredited Standards X12 committee of the American National Standards Institute (ANSI).
 - The second international standard was developed by the United Nations EDI for Administration Commerce and Trade (**EDIFACT**).

EDI standards need these basic components:-

- The syntax for message which specifies structure and sequence of elements in the data.
- EDI syntax defines where to put things like sender's address, date time, reference number etc.
- An encoding scheme to identify the character set being used.
- A data dictionary that defines the standard business data elements such as sender, product code, address, currency, etc.

ANSI X12:-

- The X12 was set up by the American National Standards Institute (ANSI) in 1979 to develop cross country standards for exchanging electronic document for all businesses in the United States.
- The committee developed ANSI X12, commonly referred to as X12 standard.
- The X12 standard sets the framework and rules for electronic data interchange.
- It describes format for structuring data, the types of documents that are transmitted electronically, and the content of each document.
- The standard also defines the sequence of the information flow.
- The X12 standard defines a set of documents referred to as transaction sets, for a wide range of business transaction forms.
- The data in a transaction set conveys the same information that is contained in the printed version of the document.
- In X12 standard, paper documents related to particular business activities are mapped into a transaction set. It assigns a numeric code to each of these transaction sets.

Examples of ANSI ASC X12 transaction include:-

- Vendor Registration (form no. 838)
- Request for Quotation (form no.840)
- Response to request for Quotation (form no. 843)
- Purchase Order or Delivery Order (form no. 850)
- Purchase Order Acknowledgement (form no.855)
- Functional Acknowledgement (form no. 997)

EDIFACT- An International Standard:-

- In 1987 United National announce an international standard called EDI for Administration, Commerce, and Transport (EDIFACT).
- The EDIFACT standard is promoted by United Nations Economic Commission, which is responsible for adoption and standardization of messages.
- The International Standards Organization (ISO) has responsibility of developing the syntax and data dictionary for EDIFACT.
- EDIFACT serves the purpose of trans-border standardization of EDI messages.
- EDIFACT combines the efforts of American Nation Standards Institute's ASC X12, Trade Data Interchange (TDI) standards developed.
- EDIFACT is a set of internationally agreed upon standards, directories and guidelines for

the electronic interchange of structured data related to trade in goods and services.

- EDIFACT consists of data elements (value), and messages (collection of segments relating to a business function), and rules for combining them.
- EDIFACT is becoming widely accepted as the foremost international EDI standard.

Each data element has attributes such as:

- Coded tag or identifier (code dictionary)
- Title
- Plain text description
- Format (length and data type or class)
- Year of insertion in Directory

EDI Security

An important aspect of EDI is the security of messages during the exchange.

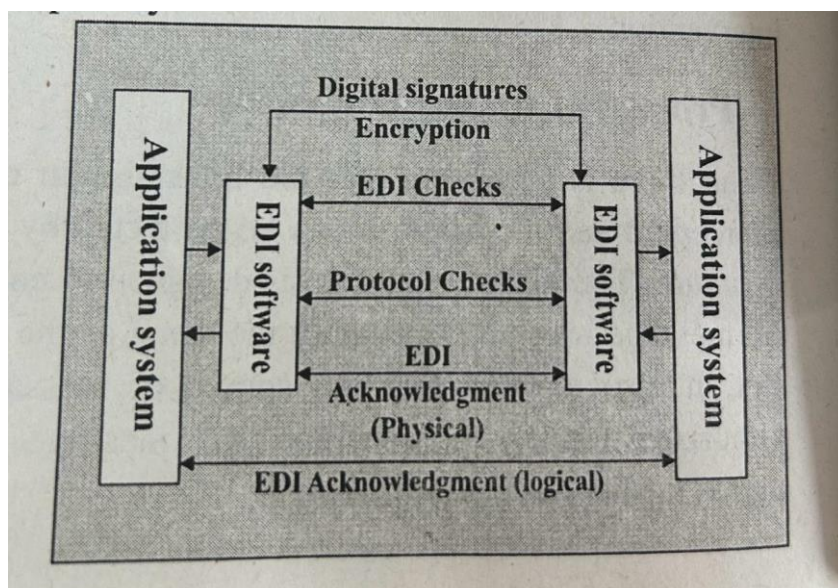
Further aspects of security are:

- **Controls in the EDI standards:-**EDI standards include controls designed to protect against errors in the message and the corruption of message during the interchange.
- **Controls in transmission protocol:-**Transmission protocols include protection such as control totals in order to detect any corruption that occurs during

transmission. When corruption of the message is detected, the network system starts retransmission without the need for outside intervention.

- **Protection against tampering:-**It ensures that source of message is authorized trading partner and message was not altered during transmission. The digital signature is designed to ensure that the message received is exactly same as message sent.
- **Privacy of message:-**When contents of message are considered sensitive, privacy of message can be protected during transmission by encrypting data.
- **Non-repudiation:-**It ensures that the transferred message has been sent and received by parties. It is a way to guarantee that sender of message cannot deny having sent the message and recipient cannot deny having received message.

The figure shows facilities for EDI security:



Another aspect of security provided for by the EDI standard is the receipt of the acknowledgment message.

- This is a transaction specific message sent out by receiving system to acknowledge each message.
- Trading partners that use receipt acknowledgment message need to be clear about level of security implied by recipient of acknowledgment.

The EDI acknowledgment message can be:

- Automatically generated by EDI Software (physical acknowledgment). It informs sender that message has arrived but there is no guarantee that it is passed to application for processing.
- Coded into the application to confirm that it is in the system for processing.
- Produced by application when message is processed to confirm that message was valid and to give additional information such as stock allocation expected delivery date (logical acknowledgment).

EDI Communication

- EDI systems are very different from the data communication systems, which cause only transmission of data without further actions from the computer system.

- In case of EDI, co-ordination of the format and the contents of data are necessary. The computer which receives the data can understand it automatically.
- In EDI, computer applications of both sender and receiver, referred to as Trading Partners, have to agree upon common format of business document allowing a transaction that requires no human intervention at either end.
- The information produced by source computer in organisation is converted to EDI format by translation software and sent to receiving computer over digital network. On receiving side, translation software converts EDI format into form required by business application at that end.

Example: The EDI transaction for purchase, shipment and corresponding payment are:

Step 1: Buyer's computer sends Request for Quotation to the seller's computer.

Step 2: Seller's computer sends a Quotation to the buyer's computer.

Step 3: Buyer's computer sends Purchase Order to seller's computer.

Step 4: Seller's computer sends Purchase Order Confirmation to buyer's computer.

Step 5: Seller's computer sends Booking Request to company's computer.

Step 6: Transport Company's computer sends Booking Confirmation to seller's computer.

Step 7: Seller's computer sends Advance Ship Notice to buyer's computer.

Step 8: Transport Company's computer sends Status to seller's computer.

Step 9: Buyer's computer sends Receipt Advice to seller's computer.

Step 10: Seller's computer sends Invoice to buyer's computer.

Step 11: Buyer's computer sends Payment to seller's computer.

EDI Agreement

- The EDI agreement is a document signed by both trading partners before electronic trading begins.
- It is an agreement that governs transfer of data, like purchase orders, between parties by computer.
- The agreement makes clear trading intentions of both parties, technical framework and process to be followed in case of dispute.
- Electronic data transmitted under EDI agreement is formatted according to ANSI X12 and EDIFACT standards.