CSC-370
E - Commerce
(BSc CSIT, TU)

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Electronic Data Interchange (EDI)

- the inter-process communication (computer application to computer application) of business information in a standard electronic form
- In short, EDI communicates information for business transactions between the computer systems of companies, government organizations, small businesses, and banks
- Using EDI, trading partners establish computer-to-computer links that enable them to exchange information electronically
- This allows businesses to better cope with a growing avalanche(too many) of paperwork: purchase orders, invoices, confirmation notices, shipping receipts, and other documents
- With the aid of EDI, all these documents are in electronic form, which aliases more work automation to occur and even alters the way business is done

Electronic Data Interchange (EDI)

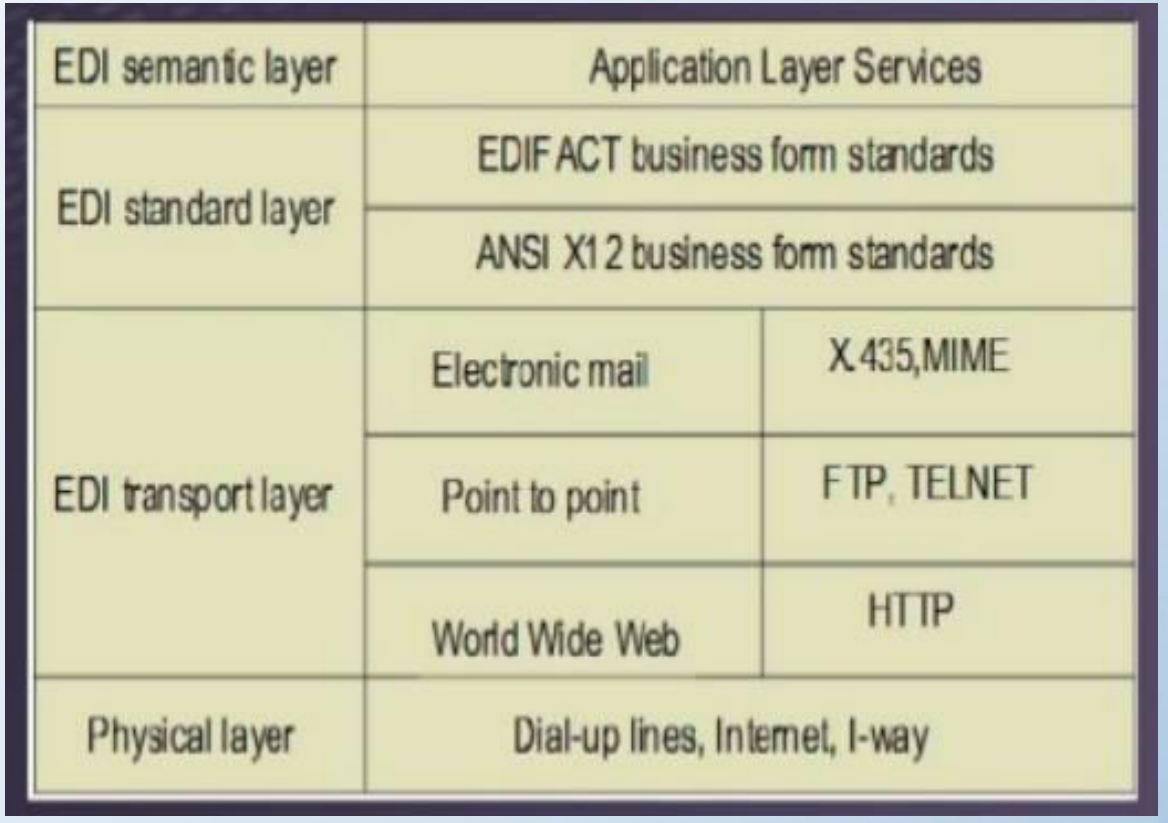
- Many industries see EDI as essential for reducing cycle and order fulfillment times.
- In retailing, EDI can provide vendors with a snapshot of what stores are selling, enabling them to recognize and meet their customer's needs much faster than in the past
- In addition, it enables retailers and vendors to place orders and pay bills electronically, reducing time and the expense of paperwork
- The primary benefit of EDI to business is a considerable reduction in transaction costs, by improving the speed and efficiency of filling orders
- Studies show that it takes up to five times as long to process a purchase order manually as it does electronically

Electronic Data Interchange (EDI)

- despite these advantages, EDI is not (yet) widely used.
- It is estimated that out of millions of businesses in the United States, only 44,000 companies exchange business data electronically.
- Only about 10 percent of these companies use EDI for financial transactions
- Electronic commerce is often equated with EDI, so it is important to clarify that electronic commerce embraces EDI and much more.
- In electronic commerce, EDI techniques are aimed at improving the interchange of information between trading partners, suppliers, and customers by bringing down the boundaries that restrict how they interact and do business with each other
- Technically speaking, EDI is one well-known example of structured document interchange which enables data in the form of document content to be exchanged between software applications that are working together to process a business transaction.

EDI Layered Architecture

- EDI architecture specifies four layers :
  1. the semantic (or application) layer
  2. the standard translation layer
  3. the packing (or transport) layer
  4. the physical network infrastructure layer



EDI semantic layer	Application Layer Services	
EDI standard layer	EDIFACT business form standards	
	ANSI X12 business form standards	
EDI transport layer	Electronic mail	X.435,MIME
	Point to point	FTP, TELNET
	World Wide Web	HTTP
Physical layer	Dial-up lines, Internet, I-way	

EDI Semantic Layer

- The EDI semantic layer describes the business application that is driving EDI.
- For a procurement application, this translates into requests for quotes, price quotes, purchase orders, acknowledgments, and invoices.
- This layer is specific to a company and the software it uses.
- In other words, the user interface is customized to local environments

EDI Standard Layer

- The information seen at the EDI semantic layer must be translated from a company-specific form to a more generic or universal form so that it can be sent to various trading partners, who could be using a variety of software applications at their end
- To achieve this, companies must adopt universal EDI standards that lay out the acceptable fields of business forms.
- What complicates matters is the presence of two competing standards that define the content and structure of EDI forms: the X12 standard, developed by the American National Standards Institute (ANSI), and EDIFACT, developed by United Nations Economic Commission for Europe (UN /ECE)

EDI Transport Layer

- When the trading partner sends a document, the EDI translation software converts the proprietary format into a standard mutually agreed on by the processing systems.
- When a company receives the document, their EDI translation software automatically changes the standard format into the proprietary format of their document processing software so that the company can manipulate the information in whatever way it chooses to.

Electronic Data Interchange versus E-mails

- EDI document transport is far more complex than simply sending e-mail messages or sharing files through a network.
- These EDI documents are more structured than e-mail.
- What really differentiates EDI from messaging is its emphasis on the automation of business transactions conducted between organizations.
- In addition, EDI messages have certain legal status.
- For instance, if a buyer sends a supplier EDI purchase orders that specify the requirements, time of delivery, and quantity and the supplier does not uphold its end of the contract, it can be taken to court with the EDI trading agreements serving as evidence.
- Table below indicates some EDI properties which distinguish it from e-mail

Electronic Data Interchange versus E-mails

Electronic Data Interchange (EDI)	*Electronic Mail*
There is typically no human involvement in the processing of the information, as the interface has software-to-software orientation. The data are structured in a software-understandable way.	The data are not necessarily structured to be software-understandable. A human-to-software interface is involved at a minimum of one end of the interchange.
The interchange is composed by one software for interpretation by another software. If a reply is involved, it is composed by a software to be interpreted by another software.	The message is composed by a human and/or interpreted by a human and/or a reply is composed by a human and/or interpreted by a human.