Electronic Data Interchange
- first example of e-commerce

Electronic data interchange (EDI) is a computer-to-computer transfer of business information between two businesses that uses a standard format of some kind. The two businesses that are exchanging information are trading partners. Firms that exchange data in specific standard formats are said to be EDI compatible. The business information exchanged is often transaction data; however, it can also include other information related to transactions, such as price quotes and order-status inquiries.

Early Business Information Interchange Efforts:	♦ **1950s** - Companies began to use computers to store and process internal transaction records. ♦ **1960s** – Businesses that engaged in large volumes of transactions with each other had begun exchanging transaction information on punched cards or magnetic tape. ♦ **1968** - A number of freight and shipping companies joined together to form the Transportation Data Coordinating Committee (TDCC), which was charged with exploring ways to reduce the paperwork burden that shippers and carriers faced.

Emergence of Broader EDI Standards

After a decade of fragmented attempts at setting broader EDI standards, a number of industry groups and several large companies decided to mount a major effort to create a set of cross-industry standards for electronic components, mechanical equipment, and other widely used items.

The American National Standards Institute (ANSI) has been the coordinating body for standards in the United States since 1918. ANSI does not set standards itself, but it has created a set of procedures for the development of national standards and it accredits committees that follow those procedures.

How EDI works

Here is an example of how an EDI transmission works: A buyer prepares an order in his purchasing system and has it approved. Next, the EDI order is translated into an EDI document format called an 850 purchase order. The EDI 850 purchase order is then securely transmitted to the supplier either via the internet or through a VAN (Value Added Network).

The buyer's VAN is a like an electronic post office that interconnects with the supplier's VAN. The VANs make sure that EDI transactions are sent and received. The supplier's VAN ensures that the supplier receives the order.

The supplier's EDI system then processes the order. Data security and control

are maintained through out the transmission process using passwords, user identification and encryption. Both the buyer's and supplier's EDI applications edit and check the documents for accuracy.

Each trading partner has unique EDI requirements. These will include the specific kinds of EDI documents to be processed, such as the 850 purchase order used in the example above, 856 advance ship notices and 810 invoices. In fact, most any business document that one company would exchange with another company can be sent via EDI.

However, each EDI document must be exchanged with each partner in exactly the format they specify. Many partners will have an EDI implementation guide or kit that explains their specific requirements. Maps are required to translate the EDI documents from the trading partner's format into the format that is useable by the receiving party.

EDI capability involves either buying or outsourcing the following components:

1. Software for communications, mail boxing of EDI transactions, mapping and translation.
2. VAN, ASYNC, BISYNC, and Internet communications as required by various partners.
3. Hardware including a server or PC, communication devices and peripherals
4. Secured office space and monitored security
5. Data backups and redundant power for reliability
6. Additional software will be needed if integration of the EDI transactions with back office systems is desired.
7. A VAN will need to be contracted for ongoing EDI transmissions.
8. Personnel must be trained in how to use the software and communication devices.
9. Maps will need to be developed for each EDI document type to be exchanged with each partner. Maps translate the encoded EDI record into a useable format.

Value-Added Networks

Trading partners can implement an EDI network and EDI translation processes in several ways. Each of these ways uses one of two basic approaches: direct connection or indirect connection. Direct connection EDI requires each business in the network to operate its own on-site EDI translator computer. These EDI translator computers are then connected directly to each other using modems and dial-up telephone lines or dedicated leased lines. The dial-up option becomes troublesome when customers or vendors are located in different time

zones, and when transactions are time sensitive or high in volume. The dedicated leased-line option can become very expensive for businesses that must maintain many connections with customers or vendors. Trading partners that use different communications protocols can make either of the direct connection methods difficult to implement.

Instead of connecting directly to each of its trading partners, a company might decide to use the services of a value-added network. A value-added network (VAN) is a company that provides communications equipment, software, and skills needed to receive, store, and forward electronic messages that contain EDI transaction sets. To use the services of a VAN, a company must install EDI translator software that is compatible with the VAN. Often, the VAN supplies this software as part of its operating agreement.

To send an EDI transaction set to a trading partner, the VAN customer connects to the VAN using a dedicated or dial-up telephone line and then forwards the EDI formatted message to the VAN. The VAN logs the message and delivers it to the trading partner's mailbox on the VAN computer. The trading partner then dials in to the VAN and retrieves its EDI-formatted messages from that mailbox. This approach is called indirect connection EDI because the trading partners pass messages through the VAN instead of connecting their computers directly to each other.

Advantages of Using a VAN:	♦ Users need to support only the VAN's one communications protocol instead of many possible protocols used by trading partners. ♦ The VAN records message activity in an audit log. This VAN audit log becomes an independent record of transactions, and this record can be helpful in resolving disputes between trading partners. ♦ The VAN can provide translation between different transaction sets used by trading partners (for example, the VAN can translate an ASC X12 set into a UN/EDIFACT set). ♦ The VAN can perform automatic compliance checking to ensure that the transaction set is in the specified EDI format.