Electronic Data Interchange (EDI) is the computer-to-computer exchange of routine business data between trading partners in standard data formats.

This definition contains three key concepts about EDI:

1. **Computer-to-computer:**

   EDI in its most efficient form flows directly out of a sender’s computer system directly into a receiver’s computer system without any human intervention; however, it is not always possible for EDI to flow in this most efficient manner.

2. **Routine business data:**

   EDI is used for routine business documents like purchase order and invoices. It is not used for non-routine business documents like complicated contracts or information meant for humans to read and analyze.

3. **Standard data formats:**

   A standard definition of the location and structure of the data is provided. Unstructured text is not EDI. The conventional paper process requires someone to handle a printed computer generated form and mail it. Then, the recipient re-keys the data back into another computer for their internal processing. (It is estimated that 80% of the data that is keyed into computers is output from other computers!) The EDI process is a computer transmitting the information directly to another computer, eliminating the paperwork and human intervention.

**Benefits of EDI**

- **Speed** – Data can move directly out of one computer system and into another with little to no delay
- **Accuracy** - Errors are reduced because data is not being re-keyed. Error rates from entering data are between .5 – 3%. On large volumes of transactions, the possibility for the introduction of errors is enormous.
- **Simplicity** – EDI standards specify how data will be formatted and where it can found.
- **Security** – EDI can be accessed only by authorized users and is accompanied by audit trails and archiving of data. EDI data cannot be easily changed by unauthorized users. It is also not subject to viruses.

These four benefits produce the following results:

- Faster buy-sell cycle time
- Faster cash flow
- Reduced order lead time
- Reduced inventories
- Ability to conduct just-in-time manufacturing
Improving trading partner relationships

What does the typical EDI process look like?

Here’s an example of a Supplier/Retailer Process: the retailer initiates the process with an electronic transmission of a Purchase Order (850). The supplier receives the order, cases it, and prints UCC-128 labels. Then, the order is packed and the UCC-128 labels are placed on the cartons. The cartons are then shipped to the retailer and the supplier electronically transmits an Advanced Ship Notice (856). After the shipment has been sent, the supplier transmits an electronic Invoice (810) for the goods. These electronic documents are sent in a standard Electronic Data Interchange (EDI) format.

What is X12?

X12 is the cross industry standard designed by the American National Standards Institute (ANSI) to support any business function in any industry. It provides a single standard with a single architecture, producing a common, uniform language for electronic communications; X12 was designed primarily as the standard for EDI transactions in North America. EDIFACT, having emerged out of X12, is a global EDI standard supporting multi-country and multi-industry exchange. Today, over 300 X12 transactions sets are used to handle most facets of business-to-business communication in many different industries including retail, government, transportation, and automotive. Common transactions include purchase orders, advance ship notices, and invoices. X12 standards are developed, maintained, published by the Accredited Standards Committee (ASC).

What is a Value Added Network (VAN)?

A Value Added Network (VAN) is a service provider that transmits your EDI data to their destinations. Value Added Networks simplify the communication process by reducing the number of parties that you have to communicate with. VANs insert themselves between trading partners. They typically operate as a mailbox scenario where a company would send a transaction to a VAN and the VAN would then place the transaction in the mailbox of the receiver. The receiver would then contact the VAN to pick up and send its transactions. It is similar to e-mail, but rather than being unstructured text, it is used for structured standardized data.

What are Electronic Product Catalogs and Bar Coding?

Electronic Product Catalogs

Electronic Product Catalogs are very similar to paper catalogs; however they do not have to go through a slow, expensive printing process, which allows them to be updated frequently. These catalogs are used by buying organizations and are sometimes mandated for suppliers. Catalog service providers act as a central repository for multiple vendors’ catalogs. These repositories support customer-specific pricing and a broad range of product information. This enables buyers to access the catalog to request information from specific suppliers or search for specific product information.
Usually, Electronic Product Catalogs can be populated several different ways including:

- EDI Transaction Set-832
- Spreadsheet
- Proprietary web-based applications for direct entry and updating

Many types of bar codes exist to identify products; however the following are the most commonly used:

- GTIN – A Global Trade Item Number (GTIN) is a 14-digit number that identifies your merchandise. The GTIN is quickly replacing the UPC. The number is an umbrella UCC identification number for other UCC numbers (UPC, EAN-13, and EAN-8) and can be achieved by adding two zeros to the front of the UPC number to reach 14 total digits.

- UPC – the Universal Product Code (UPC) is a standardized way for your trading partner to identify your products. The majority of trading partners require you, their supplier, to have UPCs. The UPC is a 12 digit number, which is usually made up of a six digit block ID (UCC Manufacturer’s ID), five digits that identifies your product, and the final digit is a check digit. The check digit is a calculation based on the previous 11 digits.

- EAN – The European Article Number (EAN) is the European version of the consumer bar code.

- EPC – The Electronic Product Code (EPC) is the electronic bar code embedded into RFID chips.