

## 8.8: Communication and Technology in the Supply Chain

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### Electronic Data Interchange (EDI)

Electronic Data Interchange (EDI) is the computer-to-computer exchange of business documents, such as purchase orders and invoices, in a standard electronic format between business partners, such as retailers and their suppliers, banks and their corporate clients, or car-makers and their parts suppliers.

EDI enables the companies to transfer the documents without having any people involved. The documents are automatically transferred from one computer (account) to another. As a result, there are many advantages to using EDI. The primary benefit is the speed and accuracy of the information transmitted. Information is made available in real time and errors that may have previously been caused during the data entry process are eliminated.

Common information exchanged using EDI include:

- Purchase orders
- Invoices
- Advance shipment notices (ASN)
- Customs documents
- Inventory information
- Shipping status
- Payment documents
- Bill of lading
- Sales/price catalogues
- Shipment status messages

### Barcodes

Barcodes have been used extensively since the 1970s, and consist of data that is displayed in a machine-readable form that can be scanned by barcode readers. The information contained on the barcode is typically pricing information, product number and description and any other pertinent information. Barcodes have become the norm in retail operations allowing for pricing accuracy and easy price changes. This data provides point-of-sale information to allow retailers to track items being sold, update inventory, identify fast and slow moving products and assist in forecasting.

### QR

Quick Response (known as QR) is using bar codes and EDI to make sales data available to vendors so that vendors can quickly replenish goods in the correct quantity. This is thought of as JIT in the retail industry. The goal is to reduce out-of stock incidents, as well as using smaller more frequent deliveries to reduce inventory and operating expenses.

### Radio Frequency Identification Device (RFID)

This technology uses radio waves to communicate information contained on a tag attached to an object. The information contained on a tag may include things such as the products origin, date of production, shipment information, pricing info, and any other pertinent info. In order to transfer this info, both a tag and a reader are needed. There are two types of tags, active and passive. An active tag contains a power source such as a battery and can operate a great distance from the reader. Passive tags use energy from the reader. Unlike barcodes, the RFID tag and reader do not require line of site in order to transmit the information.

RFID applications include the following plus many more:

- Retail use to protect from theft
- Toll road payments
- Identification (i.e. tracking of animals and people)
- Passports
- Shipping tracking – to identify location and contents of orders
- Asset tracking (e.g. laptops, expensive tools, medical devices in hospitals)
- Race timing for marathons
- Tracking luggage during travel

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