

**RETAIL MANAGEMENT – LECTURE 10**

**CHAPTER 10 – INFORMATION SYSTEMS AND SUPPLY CHAIN MANAGEMENT**

**Overview**

The first section of this topic describes how merchants can acquire a competitive edge through the use of supply chain management and information systems. The author then goes on to discuss the information and product flows that occur across the supply chain, as well as the activities that take place in distribution centers. A collection of options made by retailers to establish the structure of the supply chain is then examined, including whether to use distribution centers or direct store deliveries, as well as whether to outsource some supply chain operations. The subject then moves on to how vendors and retailers collaborate to efficiently manage the transfer of merchandise from the vendor's warehouses via the retailer's distribution centers to its stores and customers. After that, it goes over a new technology called radio frequency identification (RFID), which is being utilized to increase the efficiency of supply chain operations.

**Desired Learning Outcomes**

1. What is the flow of merchandise and information from the vendor through the store to the consumer? What types of activities are carried out in a distribution center?
2. What improvements in information technology (IT) are enabling vendor-retailer communication?
3. What are the advantages of vendors and retailers working together to improve supply chain management practices?
4. In order to ensure that the appropriate item is available when buyers are ready to purchase it, how should retailers and sellers collaborate?
5. What exactly is RFID, and how will it impact the retail industry?

## **INFORMATION SYSTEMS AND SUPPLY CHAIN MANAGEMENT**

### **Learning Objective 1 – Creating Strategic Advantage through Supply Management and Information Systems**

Manufacturing companies use a combination of actions and procedures known as supply chain management to efficiently and effectively manage the movement of merchandise from vendors to customers of retailers. All of these operations make certain that customers are able to acquire items in the correct amounts at the preferred location and at the proper time of day.

#### **Strategic Advantage**

In the retail industry, strategic advantage refers to the one-of-a-kind and long-term advantage that allows retailers to earn a higher-than-average return on their assets. Of course, all retailers try to gain a competitive edge, but not all retailers are successful in gaining a competitive advantage through the use of information and supply chain management systems. However, if they are successful in developing such an advantage, the advantage will be long-lasting because it will be tough for competitors to replicate it.

#### **Improved Product Availability**

Retailers and their consumers benefit from efficient supply chain management in two ways: (1) fewer stockouts and (2) more customized assortments. As a result of these advantages, retailers see increased sales, lower expenses, higher inventory turnover, and less markdowns on their products.

**Fewer Stockouts** A stockout occurs when an SKU that a customer wants is not available.

Assortments that are specifically tailored to your needs Another advantage provided by information systems that support supply chain systems is the ability to ensure that the appropriate merchandise is available at the appropriate location. Winter assortments in most national retail chains are adjusted based on the weather, with more wool sweaters in northern stores during the colder months and more cotton sweaters in southern stores during the warmer months. Customers'

characteristics in each store's local market are taken into consideration when advanced statistical methods are used to assess sales transaction data and change store assortments for a wide range of items, according to some retailers' current practices.

### **Higher Return on Assets**

For retailers, an efficient supply chain and information system can raise their return on investment (ROI) because the system increases sales and net profit margins without expanding inventory. Net sales improve as a result of more appealing, personalized assortments that are available in stock being presented to customers.

### **Learning Objective 2 – The Flow of Information and Products in a Supply Chain**

#### Information Flows

When a transaction is completed, the information about it is captured at the point of sale (POS) terminal and forwarded to Target's information system, where it may be viewed by the planner responsible for the toaster oven product category (2). In order to monitor and analyze sales, the planner uses this information to determine whether to reorder more toaster ovens or cut their prices if sales are falling short of expectations. Target's distribution center receives the data from the sales transactions as well (6). More toaster ovens are shipped to the store when the store inventory reaches a certain level, and the shipment information is relayed to the Target computer system (5) so that the planner is aware of the inventory level that remains in the distribution center. When the manufacturer ships the toaster ovens to the Target distribution center, the manufacturer notifies the distribution center by sending an advanced shipping notification (7). An advance shipping notice (ASN) is a document that informs the distribution center of the specifics of the shipment as well as the date and time of delivery.

Customer **Purchase Data** is stored in a database referred to as the data warehouse after being acquired at the point of sale.

When business documents are exchanged from one computer to another in a defined format, this is referred to as electronic data interchange (EDI). In order to make the transition to electronic data

interchange (EDI) easier, the retail industry agreed to use specific symbols to denote the purchase order number, the vendor's name, the address to which the goods is being transported, and so on.

A security policy is a set of regulations that apply to activities using computer and communication resources that are owned or controlled by a particular company.

The objectives of a security policy are:

- **Authentication.** When a transmission is received, the system validates or verifies that the person or computer on the other end of the line truly is who or what it purports to be.
- **Authorization.** During the communication process, the system checks to see if the person or machine on the other end of the line has permission to carry out the request.
- **Integrity.** The system ensures that the information received is identical to the information transmitted, indicating that the data has been safeguarded from illegal alterations or manipulation through the use of data encryption.

Transportation and storage of goods, services, and related information from point of origin to point of consumption are aspects of supply chain management that are concerned with the efficient flow and storage of goods, services, and related information from point of origin to point of consumption in order to meet customer needs.

### **Learning Objective 3 – The Distribution Center**

Distribution centers are responsible for several tasks, including arranging inbound transportation; receiving, checking, storing, and cross-docking; making merchandise "floor-ready"; and coordinating outbound transportation, among others.

### **Management of Inbound Transportation**

Traditional buyers concentrated their efforts while collaborating with vendors on designing merchandise assortments, negotiating prices, and coordinating joint promotions, among other things. Buyers and planners are now considerably more heavily involved in the coordination of the physical flow of items into the stores than they were previously.

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**Lecturer: Michaella DeLeon Castillo, DBA**

The dispatcher, who is in charge of coordinating deliveries to the distribution center, reassigns the truck that was scheduled to deliver the Sony game stations to a Wednesday morning delivery slot, notifies the planner, and charges the company several hundred dollars for failing to meet its scheduled delivery deadline.

### **Receiving and Checking**

Receivership is the process of documenting the receipt of merchandise as it enters a distribution hub. Checking is the process of going through the items after they have been received to ensure that they have arrived in excellent condition and that the merchandise ordered matches the merchandise received.

Checking items is a time-consuming and labor-intensive activity that takes a lot of effort. The quantity of things received in comparison to the number of items delivered as reported on the vendor's ASN for all merchandise received is sometimes overlooked by retailers who have established positive working relationships with vendors. They randomly inspect a sample of shipments to ensure that the vendor's ASNs are accurate. Retailers may be able to automatically check the contents of each carton in the future by detecting signals sent by RFID chips embedded in each item of commerce contained within a carton in the future.

### **Getting Merchandise Floor-Ready**

Store merchandise that is ready to be placed on the sales floor is referred to as "floor-ready merchandise." Getting merchandise ready for the floor involves a variety of tasks, including ticketing, tagging, and, in the case of some apparel, hanging garments on hangers. Ticketing and marking are terms used to describe the process of attaching price and identification labels on items. At order to maximize efficiency, retailers should conduct these functions at a distribution center rather than in their storefronts.

### **Preparing to Ship Merchandise to a Store**

In a forklift truck, the pick ticket is either a document or a display on a screen that tells how much of each item to be obtained from certain storage regions. After arriving at the storage facility and picking up the specified number of cartons listed on the pick ticket, placing UPC shipping labels on the cartons to identify the stores to which items are being shipped, and placing

the cartons on the conveyor system, where they are automatically routed to the loading dock for delivery by truck to each store, the forklift driver leaves the facility and returns.

#### **Learning Objective 4 – System Design Issues**

Determine whether any activities should be outsourced to independent firms; whether merchandise, if any, should be delivered directly to stores, bypassing the distribution center; and how shipments directly to customers should be handled are among the considerations in these decisions.

#### **Outsourcing Logistics**

A number of retailers have outsourced supply chain services in order to streamline their operations and make more productive use of their assets and staff. Many independent businesses are extremely efficient at completing particular operations or the entirety of the supply chain. Many firms are available to carry items from vendors to distribution facilities, as well as from distribution centers to retail locations. Instead of owning their own warehouses to keep their merchandise, retailers can use public warehouses that are owned and maintained by a third-party corporation to store their merchandise. Rather than outsourcing specific activities, retailers can use freight forwarders to arrange for the storage and delivery of their merchandise, saving money on outsourcing costs. Shipping and export documentation, warehousing, cargo space booking and negotiation, freight consolidation, cargo insurance, and the filing of insurance claims are all services that freight forwarders typically provide.

#### **Advantages and Disadvantages of Outsourcing Supply Chain Activities**

It is important to note that the fundamental advantage of outsourcing is that independent organizations can conduct the task at a cheaper cost or more efficiently than the store. Independent enterprises often have cheaper costs because they execute the same service for a large number of shops and hence benefit from economies of scale.

#### **Pull and Push Supply Chains**

POS terminals gather sales data at the point of sale, which is used to generate requests for items at the shop level. This is known as a pull supply chain. This sort of supply chain is defined by the fact that the demand for an item pulls it through the supply chain. A push supply chain,

which is a less sophisticated alternative, is one in which merchandise is assigned to stores based on predicted consumer demand. In response to the development of a prediction, specific amounts of items are transported (pushed) to distribution facilities and stores at predetermined time intervals.

### **Distribution Centers versus Direct Store Delivery**

In the retail industry, direct store delivery (DSD) is a way of distributing items to retailers in which vendors send merchandise to the stores directly. Additional services provided by DSD providers include merchandising (the arrangement of items on racks or shelves) and inventory data collection. As part of the DSD process, vendor representatives pay visits to the retailer's store on a regular basis, usually three times a week. During those store visits, trained workers check stock levels and backroom inventory in order to calculate the appropriate order quantity, replenish the order, and display products in accordance with local consumer preferences.

### **Reverse Logistics**

Customers and/or stores return products, and the process of collecting value from and/or correctly disposing of that merchandise is known as reverse logistics. Merchandise that has been returned because it is damaged, has been recalled, can no longer be sold to customers because the selling season has finished or the product has been discontinued, or that has an excessive amount of inventory is processed through the reverse-logistics system.

### **Drop Shipping**

Drop-shipping, or consumer direct fulfillment, is a system in which retailers receive orders from customers and relay these orders to vendors and then the vendors ship the merchandise ordered directly to the customer. Drop-shipping has been used for years by companies that sell bulky products such as lumber, iron, and petroleum, as well as catalog and mail-order companies.

**Learning Objective 5** – Collaboration between Retailers and Vendors in Supply Chain Management

**Benefits of Coordination**

It is significantly more efficient for the supply chain when vendors and retailers share information and collaborate on projects. Vendors can arrange their procurement of raw materials and their manufacturing processes in order to meet the needs of the retailer's item needs when they collaborate. So vendors may ensure that stuff is available "just in time" when the retailer requires it, rather than needing to stock excessive inventory in either the vendor's warehouse or the retailer's distribution centers or storefronts, as is the case now. In situations when retailers and vendors do not coordinate their supply chain management efforts, surplus inventory accumulates in the system, even though the retail sales rate for the goods remains relatively stable. The bullwhip effect is a term used to describe the accumulation of inventory in an uncoordinated channel.

**Vendor-Managed Inventory**

**Vendor-managed inventory (VMI)** In order to increase the efficiency of the supply chain, a strategy has been developed in which vendors are responsible for maintaining the inventory levels of retailers. The vendor establishes a reorder point, which is a level of inventory at which additional items is ordered from the seller. EDI is used by the retailer to communicate with the vendor about sales and inventory data. Inventory reaches order point, and the merchant generates an order and ships the product.

**Collaborative Planning, Forecasting, and Replenishment**

**Collaborative planning, forecasting, and replenishment (CPFR)** Retailers and vendors collaborate to increase supply chain efficiency and product restocking through the sharing of forecasts and relevant business information, as well as collaborative planning between them. When merchants use a VMI method, they share sales and inventory data with the vendor, but the vendor is still in charge of inventory management and control. Instead, CPFR is a more advanced kind of retailer-vendor collaboration that entails the sharing of private information such as business strategy, promotion plans, new product developments and introductions, production schedule, and lead-time information, among other things.

**Learning Objective 6 – Radio Frequency Identification**

**Radio frequency identification (RFID)** is a technology that allows an object or person to be identified from a distance using radio waves. The RFID devices or tags are connected to containers, shipping cartons, or even hidden under labels on specific objects, depending on the use and industry. Afterwards, they send information about the object in which they have been placed. When compared to bar codes, RFID technology has two distinct advantages.

**Types of RFID Tags**

RFID tags are classified as active, semi-passive, or passive. Active and semipassive RFID tags are powered by internal batteries. Additionally, an active tag uses its battery to send radio waves to a reader, whereas a semipassive tag is powered by the reader. These tags are more expensive than passive RFID tags due to the additional hardware required.

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**INFORMATION SYSTEMS AND SUPPLY CHAIN MANAGEMENT**

**Lecturer: Michaela DeLeon Castillo, DBA**

- [https://www.lexmark.com/en\\_us/solutions/retail/cards/hr-in-retail-interview.html](https://www.lexmark.com/en_us/solutions/retail/cards/hr-in-retail-interview.html)

## Quiz – Chapter 10 – Information Systems and Supply Chain Management

### Essay

1. How would you describe the value of supply chain management and information systems?

Answer:

Supply chain management and information systems have developed into critical tools for sustaining a competitive edge. Developing more effective distribution systems enables cost and price reductions while ensuring that the proper merchandise is available when and when customers want it.

2. What types of activities are carried out in a distribution center?

Answer:

The majority of large merchants own and run their own warehouses. The center performs a variety of functions, including coordinating inbound and outbound transportation, receiving and inspecting item shipments, storing and cross-docking merchandise, and preparing merchandise for the floor. When retailers construct their supply chain management systems, they decide which activities to outsource, when to employ a push-pull replenishment system, what items to cross-dock, and whether to ship merchandise to stores via a distribution center, direct store delivery, or drop shipping.

3. What are the advantages of collaboration between vendors and retailers in terms of supply chain management?

Answer:

Retailers and vendors are partnering to increase the efficiency of the supply chain. Electronic data interchange enables retailers to communicate with their vendors electronically. The Internet

has hastened EDI's adoption. Other collaborative ways that are more involved and effective include information exchange, VMI, and CPFR. These approaches straddle the divide between information systems and logistics management. They shorten lead times, boost product availability, minimize inventory expenditures, and lower overall logistics costs.

4. What is RFID and what impact will it have on retail?

Answer:

RFID has the ability to streamline the supply chain even more. The small RFID tags are attached to pallets, cartons, and individual objects and can be used to track merchandise along the supply chain and store data such as the date an item was sent to a distribution center. Although RFID technology is still relatively expensive to use on all objects, it has the potential to cut labor, theft, and inventory expenses.



