

10

Inventory

LEARNING OBJECTIVES

- Describe the methods employed to build, store, use and restock inventory
- Calculate the value of inventory for asset-management purposes
- Characterize point-of-sale (POS) systems and other digital means of managing inventory

Case Study: Willa Is Down to Her Last Box



All of a sudden (it seems), Cone Crazy is down to its last box of cones, and the inventory on hand isn't going to last until the end of the day. Willa's supplier promises delivery before noon, but a hefty fee is involved.

Willa vows to get her inventory under control!

Inventory Management

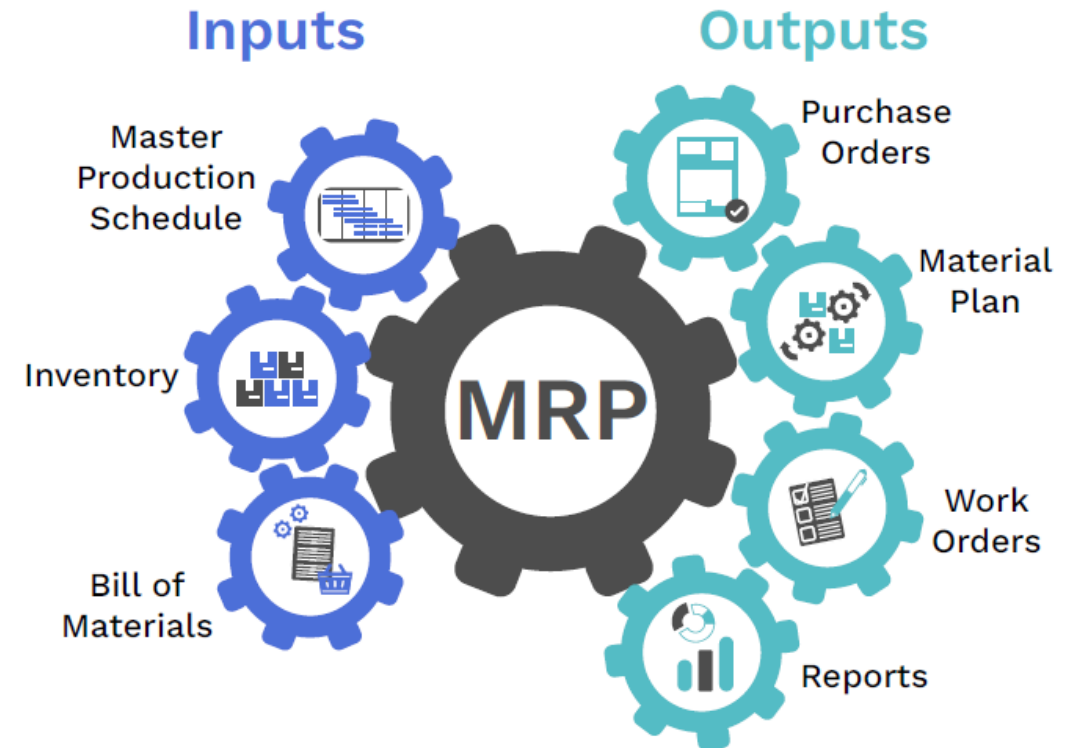
- Method of how to deal with inventory:
 - Buy
 - Store
 - Use
 - Restock
- Can be straightforward
 - Easily counted and labelled
- Can be complex
 - Example: numerous parts for automobiles



SafetyCulture's
video ["What Is
Inventory
Management?"](#)

Inventory Management (cont.)

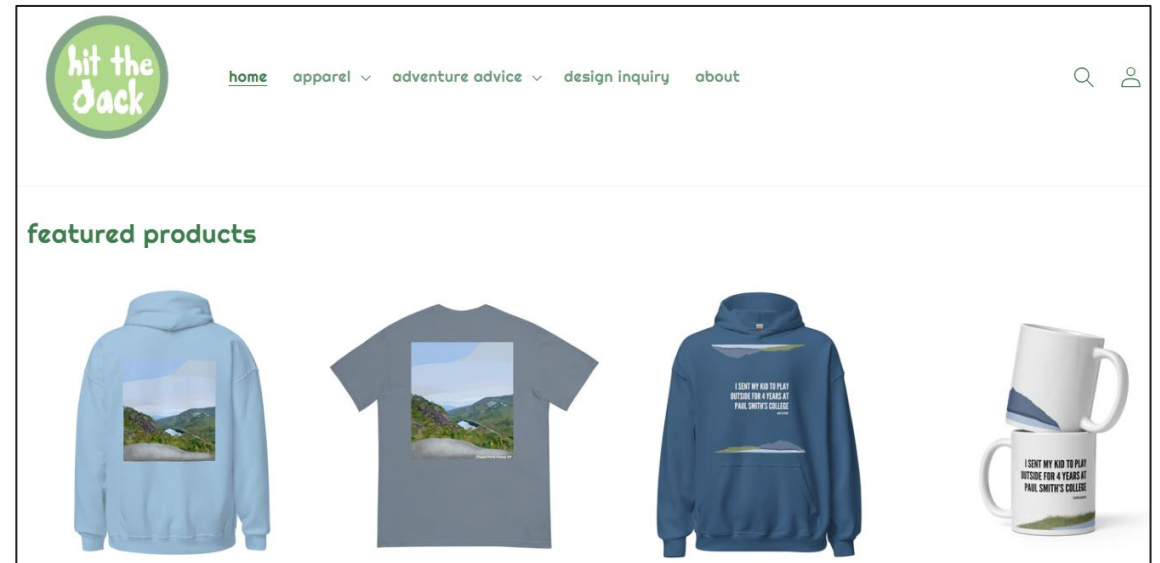
- Just-in-time (JIT) inventory
 - Goods moved **now**
- Materials Requirement Planning (MRP)
 - Adequate raw material inventory
- Economic Order Quantity (EOQ)
 - Raw materials only when needed
- Day Sales Inventory (DSI)
 - Ratio measurement of product in/sales out



Inventory Management (cont.)

Inventory Management Matching

- High-cost, highly delineated products
- High-cost, non-delineated products
- Low-cost, highly delineated products
- Low-cost, non-delineated products



ACTIVITY

Identify the best inventory management system for each of the following scenarios:

Scenario
1. Vegetable oil-based desk stain
2. Packaged health snack bars
3. High-end glass artwork
4. Detergent for sensitive skin
5. Stay-cool camping tents
6. Instant growing mushroom kits
7. Custom-designed bike frames

(Answers on the next slide.)

ACTIVITY (cont.)

Scenario	Inv. Mgmt. System
1. Vegetable oil-based desk stain	MRP
2. Packaged health snack bars	JIT
3. High-end glass artwork	DSI
4. Detergent for sensitive skin	EOQ
5. Stay-cool camping tents	DSI
6. Instant growing mushroom kits	JIT
7. Custom-designed bike frames	JIT

Inventory Valuation

- FIFO (first in, first out)
 - Sell earlier-purchased (costed) products first
 - Value inventory at **LATER** costs
- LIFO (last in, first out)
 - Sell later-purchased (costed) products first
 - Value inventory at **EARLIER** costs
- WAC (weighted average cost)
 - Divide total inventory costs by total units bought for average price per unit
 - Value remaining inventory at that amount

Inventory Valuation (cont.)

FIFO Method

- 12 bikes have been sold.
- Value the COGS starting with the “first in” (oldest) cost per unit.
 - \$400 (January cost) for the first 10
 - \$450 (February cost) for the next 2

$$(\$400 \times 10) + (\$450 \times 2) = \$4,900$$

- The remaining inventory value (for 18 units) is calculated from the next oldest price paid.
 - $(\$450 \times 3) = \$1,350$
 - $(\$500 \times 5) = \$1,500$
 - $(\$600 \times 10) = \$6,000$

Remaining inventory value: \$8,850

My Bike Shop Inventory Purchases			
	Units Purchased	Cost Per Unit	Total Cost
January	10	\$400	\$4,000
February	5	\$450	\$2,250
March	5	\$500	\$2,500
April	10	\$600	\$6,000

Inventory Valuation (cont.)

LIFO Method

- 12 bikes have been sold.
- Value the COGS starting with the “last in” (newest) cost per unit.
 - \$600 (April cost) for the first 10
 - \$500 (March cost) for the next 2

$$(\$600 \times 10) + (\$500 \times 2) = \$7,000$$

- The remaining inventory value (for 18 units) is calculated from the next newest price paid.
 - $(\$500 \times 3) = \$1,500$
 - $(\$450 \times 5) = \$2,250$
 - $(\$400 \times 10) = \$4,000$

Remaining inventory value: \$7,750

My Bike Shop Inventory Purchases			
	Units Purchased	Cost Per Unit	Total Cost
January	10	\$400	\$4,000
February	5	\$450	\$2,250
March	5	\$500	\$2,500
April	10	\$600	\$6,000

Inventory Valuation (cont.)

WAC Method

- 30 bikes have been sold.
- Value of total units purchased:
\$14,750
- Use this value to compute the COGS and the remaining inventory value.

$$\$14,750 \div 30 = \$492$$

$$\$492 \times 18 \text{ units} = \$8,856$$

My Bike Shop Inventory Purchases			
	Units Purchased	Cost Per Unit	Total Cost
January	10	\$400	\$4,000
February	5	\$450	\$2,250
March	5	\$500	\$2,500
April	10	\$600	\$6,000
TOTALS	30		\$14,750

Inventory Valuation (cont.)

Specific Identification Method

- This involves real-time tracking of items.
 - Sold
 - Restocked
 - Valuation
- The value of the remaining inventory is computed by examining the total paid to purchase that inventory.
- This method is not as good as the other methods at determining replacement costs.

Inventory Tracking Systems

Point-of-sale (POS) systems track when products sold from inventory

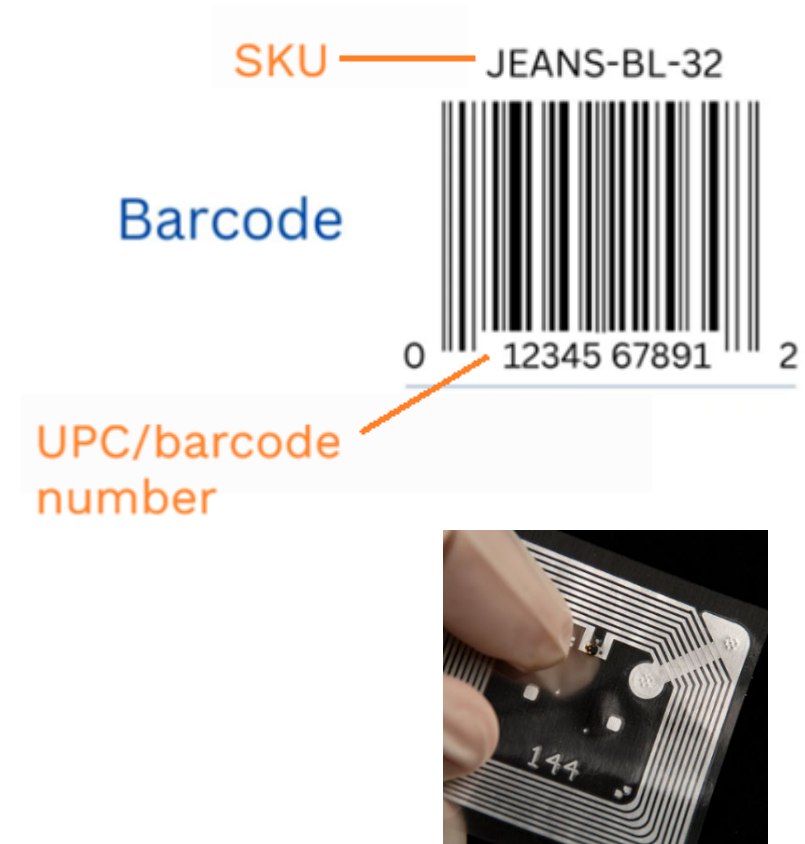
- Square
- eHopper
- Shopify
- TouchBistro
- ShopKeep



Inventory Tracking Systems (cont.)

Technology

- SKUs: Created by company
- Barcodes: Many formats
- UPCs/barcode numbers: For products being sold in multiple locations
- RFIDs (radio frequency identification devices)



CHAPTER SUMMARY

- Methods to build, store, use and restock inventory include just-in-time (JIT), materials requirement planning (MRP), economic order quantity (EOQ) and day sales inventory (DSI).
- Inventory valuation methods include FIFO (first in, first out), LIFO (last in, first out), and WAC (weighted average cost).
- The savvy entrepreneur determines the best inventory valuation method for their unique product.
- POS systems and other digital means can help with inventory management and much more; options include Square, eHopper and Shopify.