

White Paper: 4 Types of Inventory Control Systems

Perpetual vs. periodic
inventory control and the
inventory management
systems that support them.



Inventory control systems are technology solutions that integrate all aspects of an organization's inventory tasks, including shipping, purchasing, receiving, warehouse storage, turnover, tracking, and reordering. While there is some [debate](#) about the differences between inventory management and inventory control, the truth is that a good [inventory control system](#) does it all by taking a holistic approach to inventory and empowering organizations to utilize lean practices to optimize productivity and efficiency along the supply chain while having the right inventory at the right locations to meet customer expectations.



That being said, there are two different types of inventory control systems available today: perpetual [inventory systems](#) and periodic inventory systems. Within those systems, two main [types of inventory management systems](#) – barcode systems and radio frequency identification (RFID) systems – used to support the overall inventory control process:

Main Inventory Control System Types:

- Perpetual Inventory System
- Periodic Inventory System

Types of Inventory Management Systems within Inventory Control Systems:

- Barcode System
- Radio Frequency Identification (RFID) System

Inventory control systems help you track inventory and provide you with the data you need to control and manage it. No matter which type of inventory control system you choose, make sure that it includes a system for identifying inventory items and their information including barcode labels or asset tags; hardware tools for scanning barcode labels or RFID tags; a central database for all inventory in addition to the ability to analyze data, generate reports, and forecast demand; and processes for labeling, documenting, and reporting inventory along with a proven inventory methodology like just-in-time, ABC analysis, first-in-first-out (FIFO), or last-in-first-out (LIFO).

Read on to learn more about the types of inventory and the types of inventory control systems and inventory management apps that can help companies more efficiently manage their inventory.

What Are the 4 Types of Inventory?

Before getting into details about the types of inventory control systems, it's important to understand the different types of inventory.

Generally, inventory can be grouped into [four primary classifications](#):

Raw materials – Raw materials are inventory items used in the manufacturing process to create finished goods. What is considered a raw material to one company may be considered finished goods to another. For example, a company that creates parts or components for machinery or equipment would consider those components finished goods. A manufacturer that purchases those components for use in their manufacturing process would consider the same components raw materials. Raw materials may consist of things like paper or steel, nuts and bolts, chemicals, wheels, and other items.



Work-in-progress – Work-in-progress (WIP) inventory includes items that are currently being processed. WIP inventory can include raw materials and components that are going through the manufacturing process to produce finished goods as well as finished items that are waiting for final inspection or quality control. After those final steps are complete, these finished items would be considered finished goods.

Finished goods – Finished goods are comprised of all completed items that are ready for sale to the final customer.

MRO goods – MRO stands for maintenance, repair, and operating supplies. MRO inventory consists of items necessary to operate, such as equipment and machinery, and the items needed for maintaining equipment and infrastructure. That means MRO inventory can also include items that are sometimes considered raw materials but in this case are essentially spare parts. Nuts and bolts are a good example. When nuts and bolts are on hand to assemble finished products, they'd be classified as raw materials. Extra nuts and bolts a company keeps in storage to repair equipment, on the other hand, are classified as MRO. Other examples of MRO inventory include janitorial supplies such as cleaning solutions, mops, and brooms, tools, packaging materials, uniforms and gloves, and office supplies such as paper, pens, calculators, printer ink, and other items.

Inventory can be further classified in several ways depending on the industry, the company's operations, and the types of inventory the company manages. Companies that purchase finished goods and sell them to customers at a markup

have just one type of inventory called merchandising inventory.

Some companies, such as manufacturers, need to manage a variety of inventory in different classifications, making efficient inventory tracking a must. To effectively manage inventory, an inventory tracking solution is paired [with an inventory control app or inventory management app](#).

How Do Inventory Control Systems Work?

Inventory control systems, such as inventory control apps, offer a variety of functions that help companies manage various types of inventory. Inventory control systems typically consist of [inventory management apps](#) paired with [barcode tagging](#) to [identify inventory assets](#), and information about each item is stored in a central database. Barcode labels serve as inventory trackers, allowing users to bring up information about the item on a computer system, such as the item's price, the number of items in stock, the location of an item within a warehouse, and more.

The best inventory control apps are mobile-compatible, with companion apps that allow users to track and manage inventory while they move throughout a facility or from site to site. There are many [inventory tracking apps](#) for smartphones, some of which are mobile-exclusive, while others have [desktop applications](#) to allow users to track inventory from any device. There are also many inventory tracking apps designed specifically to meet the needs of [warehouse managers](#). When looking for an inventory management app, look for features that accommodate your company's needs, such as trigger alerts when inventory levels reach pre-defined thresholds, re-ordering capabilities, and analysis and reporting to support functions such as forecasting.



The 2 Types of Inventory Control Systems

Now that we've covered the basics of inventory and how inventory control systems work in general, let's discuss the two main types of inventory control systems.

Perpetual Inventory System

When you use a [perpetual inventory system](#), it continually updates inventory records and accounts for additions and subtractions when inventory items are received, sold from stock, moved from one location to another, picked from inventory, and scrapped. Some organizations prefer perpetual inventory systems because they deliver up-to-date inventory information and better handle minimal physical inventory counts. Perpetual inventory systems also are preferred for inventory tracking because they deliver accurate results on a continual basis when managed properly. This type of inventory control system works best when used in conjunction with a database of inventory quantities and bin locations updated in real time by warehouse workers using barcode scanners. Inventory management apps are perpetual inventory systems.

There are some [challenges](#) associated with perpetual inventory systems. First, these systems cannot be maintained manually



and require specialized equipment and software that results in a higher cost of implementation, especially for businesses with multiple locations or warehouses. Periodic maintenance and upgrades are necessary for perpetual inventory systems, which also can become costly. Another challenge of using a perpetual inventory system is that recorded inventory may not reflect actual inventory as time goes by because they do not conduct periodic physical inventory counts, a necessary activity even when inventory trackers are used. The result is that errors, stolen items, and improperly scanned items impact the recorded inventory records and cause them not to match actual inventory counts.

Periodic Inventory System

[Periodic inventory systems](#) do not track inventory on a daily basis; rather, they allow organizations to know the beginning and ending inventory levels during a certain period of time. These types of inventory control systems track inventory using physical inventory counts. When physical inventory is complete, the balance in the purchases account shifts into the inventory account and is adjusted to match the cost of the ending inventory. Organizations may choose whether to calculate the cost of ending inventory using LIFO or FIFO inventory accounting methods or another method; keep in mind that beginning inventory is the previous period's ending inventory.

There are a few [disadvantages](#) of using a periodic inventory system. First, when physical inventory counts are being completed, normal business activities nearly become suspended. As a result, workers may hurry through their physical counts because of time constraints. Periodic inventory systems typically don't use

inventory trackers, so errors and fraud may be more prevalent because there is no continuous control over inventory. It also becomes more difficult to identify where discrepancies in inventory counts occur when using a periodic inventory control system because so much time passes between counts. The amount of labor that is required for periodic inventory control systems make them better suited to smaller businesses.

Barcode Inventory Systems

Inventory management systems using [barcode technology](#) are more accurate and efficient than those using manual processes. When used as part of an overall inventory control system, barcode systems update inventory levels automatically when workers scan them with a barcode scanner or mobile device. The benefits of using barcoding in your inventory management processes are numerous and include:

- Accurate records of all inventory transactions
- Eliminating time-consuming data errors that occur frequently with manual or paper systems
- Eliminating manual data entry mistakes
- Ease and speed of scanning
- Updates on-hand inventory automatically
- Record transaction histories and easily determine minimum levels and reorder quantities
- Streamline documentation and reporting
- Rapid return on investment (ROI)
- Facilitate the movement of inventory within warehouses and between multiple locations and from receiving to picking, packing, and shipping



Radio Frequency Identification (RFID) Inventory Systems

Radio frequency identification (RFID) inventory systems use active and passive technology to manage inventory movements. Active RFID technology uses fixed tag readers throughout the warehouse; RFID tags pass the reader, and the movement is recorded in the inventory management software. For this reason, active systems work best for organizations that require real-time inventory tracking or where inventory security has been an issue. Passive RFID technology, on the other hand, requires the use of handheld readers to monitor inventory movement. When a tag is read, the data is recorded by the inventory management software. RFID technology has a reading range of approximately 40 feet with passive technology and 300 feet with active technology.

RFID inventory management systems have some associated challenges. First, RFID tags are far more expensive than barcode labels; thus, they typically are used for higher value goods. RFID tags also have been known to have interference issues, especially when tags are used in environments with a lot of metal or liquids. It also costs a great deal to transition to RFID equipment, and your suppliers, customers, and transportation companies need to have the required equipment as well. Additionally, RFID tags carry more data than barcode labels, which means your system and servers can become bogged down with too much information.

When choosing an inventory control system for your organization, you first should decide whether a perpetual inventory system or periodic inventory system is best suited to your needs. Then, choose a barcode system or RFID system to use in conjunction with your inventory control system for a complete solution that will enable you to have visibility into your inventory for improved accuracy in scanning, tracking, recording, and reporting inventory movement.

About Camcode:

Founded in 1979, Camcode® is a recognized worldwide leader in the design and manufacture of durable pre-printed bar code labels and customized services for asset tracking applications utilizing automatic identification and data capture. Camcode's extensive collection of tailored services includes project management, data management and uniquely engineered identification products to deliver a completely personalized asset tracking solution.

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