

Today's Inventory Management Systems: A Tool in Achieving Best Practices in Indian Business

Kalpna Rawat

Research Scholar

University Department of Commerce & Business Management

Ranchi University, Ranchi

Abstract

Inventory management is a science primarily about specifying the shape and percentage of stocked goods. Inventory records relating to quantity and value can be maintained through two major Inventory Systems in India- Periodic and Perpetual Inventory Systems. Inventory Management is required at different locations within a facility or within many locations of a supply network to precede the regular and planned course of production and stock of materials. The scope of inventory management concerns the fine lines between replenishment lead time, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns and defective goods, and demand forecasting Today, technology demands up-to-date and upgraded inventory management for achieving fast, reliable, consistent accuracy and preciseness in inventory management for achieving best practices in Indian Business which is achieved through Inventory Management System. The goal of effective inventory management is to "meet or exceed customers' expectations of product availability with the amount of each item that will maximize an organization's net profits or minimize total inventory investment". This goal is very difficult if not impossible to reach without a comprehensive inventory management system.

Keywords : physical space, quality management, net profit

Introduction

The goal of effective inventory management is to "meet or exceed customers' expectations of product availability with the amount of each item that will maximize an organization's net profits or minimize total inventory investment". This goal is very difficult if not impossible to reach without a comprehensive inventory management system. An inventory management solution should guide a distributor in making the critical decisions necessary for success. It should also monitor the distributor's progress in achieving the goal of effective inventory management by measuring customers' satisfaction, stock availability, money, gross profits, operating costs etc. Inventory Management System is an enterprise-wide discipline concerned with the identification and tracking of Information Services (IS) hardware and software assets. Its three main areas of concern are: Acquisition, Redeployment, and Termination

Today there are literally hundreds of inventory management systems available to distributors. Some are incorporated into enterprise resource

planning (ERP) systems that include sales, replenishment, general ledger, warehousing and other modules that can be used to process all of a distributor's transactions. Other packages are "bolt-on" solutions that provide an inventory management tool set which is seamlessly connected to the distributor's ERP system. Bolt-on packages are utilized when a distributor is generally happy with his or her ERP system but would like more replenishment functionality.

Today most inventory management solutions do a good job of maintaining an accurate perpetual inventory. That is they will analyze material-related transactions and maintain up-to-the-moment stock balances of each item. But this capability alone is not enough to achieve success. In today's highly competitive business environment it is critical that you have an effective inventory management tool that provides the answers to the inventory related problems.

There is no one "best" inventory management system. Different distributors need specific

features to best manage their products. The purpose of inventory management system is not only to develop a check list of the capabilities and features of a company needs in a software solution in order to be successful, but to also be sure that the business is having an environment necessary to achieve effective inventory management. No matter what system is decided to implement, there are some fundamental business practices that must be in place in order for Indian business to be successful.

Materials and Methods

The concept of Inventory Management System is still new to India compared to other countries where it has been implemented successfully. This article is based on secondary data like the authoritative books and leading journals on the different aspects of Inventory Management System. The method used is analytical and descriptive for the study.

Results and Discussions

Inventory management is a science primarily about specifying the shape and percentage of stocked goods. It is required at different locations within a facility or within many locations of a supply network to precede the regular and planned course of production and stock of materials. The scope of inventory management concerns the fine lines between replenishment lead time, carrying costs of inventory, asset management, inventory forecasting, inventory valuation, inventory visibility, future inventory price forecasting, physical inventory, available physical space for inventory, quality management, replenishment, returns and defective goods, and demand forecasting.

The goal of effective inventory management is to minimize the total cost direct or indirect that is associated with holding the inventory. It is essential to have a sufficient level of investment in inventories. Thus, Inventory Management, in other words, is the scientific method of determining what, when, and how to purchase and how much to have in stock for a given period of time. Balancing these competing

requirements leads to optimal inventory levels, which is an on-going process as the business needs shift and react to the wider environment. Inventory management may also be defined as the sum total of those activities, which are necessary for the acquisition, storage, sale and disposal, source of material.

Inventory records relating to quantity and value can be maintained according to any of the following systems: Periodic & Perpetual Inventory System

Periodic Inventory System : Periodic Inventory System is a method of ascertaining inventory by taking an actual physical count (or measure or weight) of all the inventory items on hand at a particular date on which information about inventory is required.

Perpetual Inventory System : Perpetual Inventory System is a method of recording inventory balances after each receipt and issue. In order to ensure accuracy of perpetual inventory records, physical stocks should be checked and compared with recorded balances. The discrepancies, if any, should be investigated and adjusted in the accounts, properly.

Inventory Management System

Inventory Management System is an enterprise-wide discipline concerned with the identification and tracking of Information Services (IS) hardware and software assets. Its three main areas of concern are: Acquisition, Redeployment, and Termination.

Acquisition procedures are established to assist personnel in procurement of software and hardware products. Its main purpose is to ensure that proper justifications are performed and that financial guidelines are followed.

Redeployment procedures are responsible for ensuring that assets are tracked when moved from one location to another and that budgetary considerations are adjusted as needed. Should a product be moved in conjunction with its original owner then the Inventory System is updated to reflect the new location. Should a product location and owner change, then the

Inventory System must be updated to reflect the new owner and their location. In this case, the old product is deleted from the original owner's budget and added to the new owner's budget.

Termination is responsible for deleting the asset from the inventory when it is discontinued, or replaced. The owner's budget will be updated to reflect the asset termination and the asset will no longer be listed when location reports are generated.

The Inventory Management System is maintained within a database that ties an asset to its owner and defines the location where the asset resides. The relative importance of the asset is added to the inventory record (i.e., Criticality = 1-5, where 1 is "Most Critical"). Based on this information the contingency planning specialist can plan asset recoveries needed to support critical business operations.

Like all databases, the Inventory System will only be effective if its information is kept current. To ensure the accuracy of the Inventory System, while not adding too great a burden to company personnel, every effort must be taken to implement processes that maintain inventory data with a minimum work effort from personnel

Inventory Management provides

- ◆ Up-to-date information about data processing resources through the creation and archiving of records in a centralized repository.
- ◆ Financial records specific to a single component, or groups of components.
- ◆ Service records for all components in the inventory.
- ◆ Data used to support configuration diagrams of the hardware and software components contained within specific locations, or the entire data processing environment.
- ◆ Standards and Procedures Manual

Scope

The Inventory Management discipline

encompasses all system and data network elements from the mainframe through the server level to the PC or end component throughout the enterprise.

All mainframe and data network based hardware and software assets must be identified and entered into the Inventory System. Any changes to these environments must be reflected in the Inventory System.

Financial and technical product information must be available through the Inventory System, as needed to support the functional responsibilities of personnel within the finance and contracts management departments.

Asset criticality must be included with asset descriptive and financial information, so that the Recovery Management department is supplied with the information it requires. Recovery actions must be implemented to safeguard critical assets. The Standards and Procedures Manual section relating to Inventory Management must be created and published. This section must describe the process by which assets are identified, entered into the Inventory Management System, tracked, and finally deleted. All information needed by personnel to perform Inventory Management functions must be clearly described within this S&P Manual section.

Finally, personnel responsible for implementing, supporting, and maintaining assets must have access to the Inventory Management System to identify asset information needed by them to perform their functional responsibilities. This process includes logging the availability or assets, their support history, and any maintenance activity performed on the asset.

Mission : The mission of an Inventory System is to provide a Central Asset Repository of information used to define assets and relate the asset to its owner, location, and relative importance. This information will provide personnel with data needed to support their job functions, for example:

Financial Services will be able to budget for asset procurement, depreciate assets over

time, and prepare complete tax documents. Contracts Management will be able to negotiate vendor discounts and enterprise agreements.

Contingency Planning personnel will be able to develop recovery plans for mainframe and office assets contained within the Inventory System based on the assets relative importance (as stated within the Criticality field).

Technical personnel will be able to resolve problems more quickly with the information contained within the Inventory System, because they will have a listing of the assets contained within a location and any support or maintenance activities associated on the asset.

The Inventory System should be integrated within the everyday functions performed by personnel associated with entering and maintaining asset information. The system will reduce the effort devoted to asset management, while supplying many personnel with the information they need to perform their functional responsibilities.

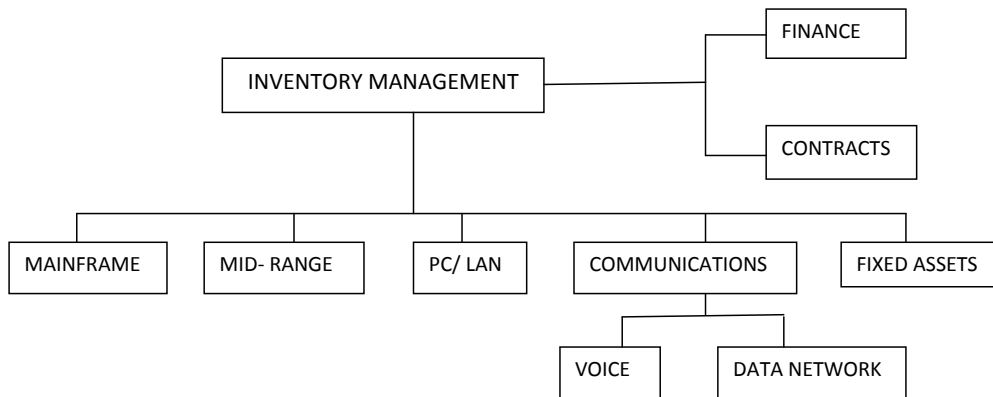
Every effort should be made to develop a central Asset Repository that covers the entire enterprise, rather than having separate

Asset Repositories for mainframe, network, and distributed environments. Having a single repository will simplify accounting and asset management, while allowing for the implementation of enterprise-wide asset management standards and procedures.

Functional Areas : All of the functional areas listed above can utilize the information contained within the Inventory Management System's Central Asset Repository of information. Additionally, the Recovery Management area could utilize inventory information to identify an assets criticality (especially when the asset's location and owner are identified within the Inventory Management System). Through the use of reports generated from the Inventory Management System's Repository, it would be possible to obtain a listing of all "Most Critical" resources, by location and group. This report would then serve as the basis of a Business Recovery Plan.

The functional areas that interface with an Inventory Management System are:

Inventory Management Departments : "Inventory Management is divided into many separate areas of responsibility."



Integrated Inventory Management System:

To successfully implement an Inventory Management System, it is necessary to integrate it within the everyday functions performed by company personnel. That is, when a user wants to order equipment or software, they would call up the Inventory Management System screen associated with

Acquisition. The same types of processes should be available for Redeployment and Termination of assets. Should a user request the acquisition of a specific type of asset then it would be possible for the inventory system to determine if the asset is already in surplus, or if it should be purchased under an existing Volume Purchase Agreement with a vendor.

The utilization of Inventory Management Systems to control the purchase and installation of assets can aid in the control of the business environment, while assisting in the assignment of personnel to perform asset related work functions. This methodology will result in a workflow and asset management system that is optimized to the enterprise.

Process Description : The Inventory Management System process starts with the acquisition of an asset, then continues with the redeployment of assets, and ends when an asset is terminated. It interfaces with many personnel performing a variety of Systems Management Control (SMC) disciplines associated with asset implementation, support, and maintenance functions within the I/S organization as well as finance and corporate management areas throughout the enterprise.

The vehicle used to control the Inventory Management discipline is Change Management. Without adequate Change Management the integrity of the Inventory Management process cannot be ensured. These SMC disciplines and functions encompass both system and data network elements and feed the Configuration Management discipline. Inventory Management inputs can come from either the Network or Systems area and can include a variety of input methods:

Network : The Network area must account for new acquisitions installed as a configuration in a specific location. Because the complexity of today's networks makes tracking new acquisitions difficult, it is advisable that tracking be accomplished through the use of discovery type applications, which monitor and interrogate asset changes automatically. This type of tracking would capture vital product data (VPD), or perform product identification, which is generally imbedded on PC-type products by the manufacturer. This information should include product type, serial number, maintenance level, features, and other asset information which can be inputted to the asset database record as a foundation element.

System : System level assets can be identified

through automated tools used to extract asset information like: asset type, serial number, features, maintenance level, etc. Within the system area changes to the physical environment are systematically reported through the integrated change process. This discipline incorporates all hardware and software reconfigurations or updates. All inputs to the centralized database will be subject to the change process.

Implementation of Inventory Management

Efficient processing and operations management starts with an integrated approach that links all facets of system management together. Inventory Management is just one of the disciplines. Each augments the other, and provides the ability to effectively manage a large systems environment.

Accurate inventory data is vital. A lack of accurate asset data affects the other disciplines ability to function. The automated element of inventory management monitors the enterprise-wide data network processing environment for change, while the system environment relies on the change process (which may or may not be fully automated) for accurate input.

The products and tools that comprise the Inventory Management System use data network definition information, Vital Product Data, local configuration definitions and in some cases, discovery applications to arrive at inventory information. This process must embrace System Environment and Network Environment to be effective:

Data Requirements for Inventory Management

To ensure a consistent, centralized and integrated control, as described in the previous section, a common data model must be built. This will ensure a consistent reporting process to the inventory database regardless of where the data is stored. In the event of incomplete record information, the inventory management area must re-solicit, or advise the responsible asset area of the missing data elements. This reentrant approach provides a disciplined strategy to build a reliable inventory.

The structure illustrated in the next diagram allows the description of hierarchical relationships among data centers, systems, components, service organizations, and financial data. By entering descriptions of the hardware and software system components, along with information about their status and support data, a database can be built which supports parent/child relationships.

Inventory Management Tools

Inventory Management uses network definition information, Vital Product Data (VPD), local configuration databases and, in some cases, discovery applications in order to arrive at inventory information.

The following list of Inventory Management tools was accumulated after conducting a general survey of large corporations in the area. The participants represented large corporations with an annual I/S budget of over \$100M. The survey solicited information about how they performed Problem, Change, and Inventory Management and what techniques and tools were used to accomplish tasks in the two areas that follow.

Products specifically mentioned, were approved by the vast majority of participants. We also list major Inventory Management functions that can be fulfilled by any number of products, but do not specifically mention a product by name.

Present System Weaknesses

A Centralized Repository for asset information does not presently exist. Inventory Management is presently being performed by many various groups (i.e., mainframe, communications, data network, etc.) and a consolidation of these databases into a Centralized Inventory Repository should be planned.

When migrating to a centralized repository, automated tools and interfaces should be developed, so that any acquisition, redeployment, or termination of assets will have to be performed through the automated system. This will reduce the effort presently performed by personnel and guaranty the

accuracy of the Inventory repository.

Policies and Procedures Necessary to Achieve Effective Inventory Management

No system can provide good information if it is fed bad data. To achieve inventory management success it is critical that the on-hand quantities in computer system agree with what is physically on the shelf in the branch or warehouse. One must ensure that all material-related transactions are recorded in a timely manner.

Best practice is to create and implement a material transaction policies and procedures guide for all employees to follow. Before implementing a new system it is made sure that everyone understands there are two ways of moving material in and out of your facility: Company's "approved" right way and the wrong way.

In many companies anyone is allowed to reorder stock items if they "feel" more material is needed. It is not unusual to have two or three people reorder the same item; often basing their decisions on "SWG" (i.e., scientific wild guessing) rather than system suggestions. This practice creates an atmosphere of "inventory anarchy" that results in overstocking and poor inventory management. No computer system can function well in this environment. In addition to controlling the movement of inventory, success requires that the company develops unbreakable replenishment policies like:

Each branch or warehouse has an approved list of stocked items. That is a list of the products that management has committed to have on-hand to meet customers' expectations or product availability.

Specific individuals are assigned the responsibility of replenishing specific products or product lines in a region or throughout organization. They will be expected to meet goals of both customer service (i.e., avoidance of stock-outs) and inventory turnover.

Assigning people to products throughout the organization rather than all items in a specific

branch encourages them to move surplus inventory from one location to another in order to achieve their goals. Other personnel can only buy special order (i.e., non-stock) products or only the quantities of stocked items necessary to fill specific emergency orders. Requests for adding products to a location's approved stock list must be approved by the management.

Finding the Best Inventory Management Package for the Company

Once policies and procedures have been implemented necessary to achieve effective inventory management, company is ready to search for the best "tool set" for it. Individual inventory management software packages can be divided into four categories:

- ♦ "Accounting Systems" that require the user to manually maintain all replenishment parameters. Replenishment parameters determine when a product will be replenished and how much will be ordered. Typical replenishment parameters included minimum/maximum stock quantities and reorder point/reorder quantity values. Accounting Systems assume that you have the time and knowledge to manually maintain all replenishment parameters. As most distributors have thousands of stocked items scattered among several locations in most cases accounting systems do not provide a practical solution for achieving effective inventory management. Though these systems are usually inexpensive, as the saying goes, "you get what you pay for".
- ♦ "Simple Replenishment Systems" that use one or two simple formulas to calculate replenishment parameters for each item in each warehouse. Simple Replenishment Systems do not require users to manually maintain replenishment parameters for stocked items. Every week or month they will determine when to order products and how much to order based on an average of past usage as well as some other "hard coded rules". Unfortunately these systems
- ♦ fail to recognize that different items in your inventory have different patterns of sales or usage. Even items in the same product line can sell at very different rates. Simple Replenishment Systems are simple to understand but they lack the tools necessary to react to different sales and replenishment situations.
- ♦ "Mystery Box Systems" that calculate replenishment parameters for each item using algorithms that are too complex for users to understand or whose actual logic is viewed as proprietary by the software company and is not available to users to study and question. "Mystery Box" systems include a number of different complicated algorithms to handle different patterns of usage and will determine the specific replenishment method and algorithm that best addresses each item's pattern of usage. However these systems hide the logic used to make these critical decisions from the end user. There is no way a buyer can replicate the results produced by the system on a hand-held calculator. It is easy to understand the frustration experienced by the person responsible for replenishing stock of an item when the parameters calculated by the Mystery Box system result in either overstocking or stockout situations. And in many cases Mystery Box systems do not allow management, buyers and salespeople to input "collaborative" information into the replenishment process. This additional information includes anticipated changes in usage that are not reflected in past sales.
- ♦ "Best Practice Systems" that calculate replenishment parameters for each item based on such factors as patterns of usage, replenishment policies and desired levels of customer service. The logic used in these systems is well documented, easy to understand and the authors are anxious for users to ask questions concerning how the system works. Best Practice Systems combine the best of both worlds. Like Simple Replenishment Systems they

are easy for buyers to understand; all results can be reproduced on a hand-held calculator. But they also include tools to address various patterns of usage, identify unusual activity and allow for the inclusion of collaborative information.

Percentage of Distributors Turn/Earn Index

- ◆ Upper 50% 1.20 1.5
- ◆ Upper 25% 1.50 2.00
- ◆ Upper 10% 1.80 2.33

Percentage of Excess Inventory: This is the percentage of the company's current inventory in excess of a certain number of day's or month's supply. Most distributors strive to have no more than 5% to 10% of their inventory dollars invested in more than a one year supply of a product. There are many good "best practice" inventory management systems marketed today.

Conclusion

Indian Companies are also following new ways and tools for upgrading their whole business for achieving best practices, get maximum profit. They can achieve their goals of efficiency and customer satisfaction with a comprehensive inventory management system which is an enterprise-wide discipline concerned with the identification and tracking of Information Services (IS) hardware and software assets. The purpose of inventory management system is not only to develop a check list of the capabilities and features of a company needs in a software solution in order to be successful, but to also be sure that the business is having an environment necessary to achieve effective inventory management. It creates Centralized Repository of Inventory information which is timely available to the authorized persons. It is much helpful in business as it identifies and track all data processing assets in an Inventory System Repository, defines the process by which assets are identified and maintained in the Inventory System, provides Inventory System access to all necessary personnel (data entry, view, update and deletion), provides a full range of reports that will satisfy informational requirements,

documents the Inventory Management System within the Standards and Procedures Manual. Thus, Inventory Management System is an important tool for Indian Business for achieving best practices but certain loopholes like under utilization of criticality indicator to release assets for disaster recovery, non-implementation of Traceability System in the inventory management system should be sorted out.

References

1. Thomas Bronack, Standards and Procedures Manual, Inventory Management System, March 18, 2012
2. Brooks Roger B. and Wilson Larry W., Inventory Record Accuracy: Unleashing the Power of Cycle Counting. Essex Junction: Oliver Wight Publications, Inc., 1993
3. Edwards Douglas J., The Best 100, Industry Week, August 16, 1999
4. Inventory Management Software, EGA Futura, Retrieved 23 November 2012
5. Taninecz George, IW's Ninth-Annual Honor Roll, Industry Week (October 19, 1998, Practicing Judgment, CIO Magazine, August 1, 1995
6. Lockard Robert, Advantages of Using Inventory Management Software, Inventory System Software Blog, Retrieved 23 November 2012
7. Moskowitz Robert, Using Your Computer for Inventory Control, Accvision Retrieved August 17, 2010
8. Brooame, Jr., J. Tol, The Benefits of Smart Inventory Management Software, CBS Interactive, June 1999
9. Advantages of Inventory Management Software, Author Stream, Retrieved 23 November 2012
10. Inventory Control Systems, Clock Work Accounting, Retrieved August 17, 2010
11. Lesonsky Rieva, Tracking Inventory, Entrepreneur Magazine

Reproduced with permission of copyright
owner. Further reproduction prohibited
without permission.