

Inventory management systems flashcard



**ASSIGN
BUSTER**

Inventory management systems help managers efficiently manage the flow of materials, effectively utilize people and equipment, coordinate the internal activities of an organization and communicate with others. While useful and crucial to an organization, inventory management neither makes decisions nor manage operations or individuals rather, it provides the necessary information to managers who in turn, make more accurate and timely decisions to manage operations.

Team C has collected inventory data of Apple Computers, Ford Motor Corporation, Hewlett Packard, Corporation, PepsiCo, Toyota Motor Corporation and Daimler Trucks North America. Team C participants will describe the inventory data of the aforementioned organizations and discuss the advantages and disadvantages of same. Inventory Management Systems Description Apple Computers Ford Motor Corporation Hewlett Packard Corporation Hewlett-Packard (NYSE: HPQ) is a global leader in the IT industry.

Servicing over 160 countries, HP's product line combines a myriad of hardware, software and services—offering one of the tech. world's most comprehensive manufacturing portfolios. Its products and services include, PCs, servers, printers, networking equipment, enterprise IT and information management, business intelligence, application development and management, consulting systems integration and other technology services. Inventory related to product demand, component cost, and availability uncertainties can have a significant impact on a manufacturing company's revenue and profits.

Thus, properly managed supply chains provide substantial benefits to organizations, allowing the utilization of resources to increase significantly while reducing the cost of many time consuming steps in the operation's life cycle. Following is a description of the inventory system of Hewlett-Packard as well as a comparison of the advantages and disadvantages of its system. " The Procurement Risk Management (PRM) Group at Hewlett-Packard (HP) developed and implemented a mathematical model, business process, and software to measure and manage supply chain risks on the procurement side. (Interfaces, 2008) Technologist and member of HP PRM Group, Venu Nagali, Phd. reports the objectives of PRM at HP in a Stanford Risk Management Roundtable.

In his report, Nagali stresses the importance of measuring and managing procurement uncertainties such as cost, demand and availability. To increase earnings and cost predictability, Nagali suggests protecting the product margin against volatile component prices. He addressed demand uncertainty with cost saving portfolios such as lower material and inventory cost and responds to uncertain availability with assurance of supply by protecting against shortage risk.

Additionally, Nagali lists the components of PRM framework: (1) measure risk through forecast scenarios for product demand, component cost and availability (2) manage risk through a portfolio of structured contracts for different segments of demand and (3) PRM process through periodic reassessment of risks and managing same. (Nagali, 2006) PepsiCo Pepsi is a vibrant company that has transformed itself from a soft drink company to Quaker Oats and Snack Foods. Its' snack food products consist of Fritos, <https://assignbuster.com/inventory-management-systems-flashcard/>

Doritos, and Tostitos. Actually over 50% comes from the Snack Food Business.

It was a great idea for Pepsi to diversify the product line. PepsiCo was founded in 1965 through a merger with Frito-Lay. In 1998, Pepsi's was not focused in the right area for its sights were set on quality and productivity, with minimal attention given inventory and technology migration. This resulted in the company inventory to enlarge over the years that encompassed more than 120 different varieties. Many of the items included the same style product under different names, which required different supplies.

Therefore, it homogenized some products in an effort to cut costs. Because of the extensive number of sensors we had in inventory, including multiple styles and brands, simply finding the right replacement could result in an hour of downtime," said Tony Yanora, maintenance manager, Pepsi Bottling Group. " We had a lot of specialized sensors that we didn't really need which increased our inventory costs and made it a nightmare for our technicians to make repairs - if we even had the right parts in stock. " The company was compelled to get its inventory and maintenance processes controlled. That is when Pepsi partnered with Rockwell Automation.

Rockwell Automation Services ; Support has proved this was a great decision for Pepsi Bottling Group. The inventory improved and parts management capabilities reduced inventory costs, and standardizing eased training requirements and minimized the technology learning curve; which increased productivity. In addition, Pepsi was able to reduce the number of sensors.

Partnering with Rockwell Automation has helped the company streamline its spare parts inventory, improve equipment reliability and move to a more strategic maintenance approach.

The combination of increased productivity and reduced inventory costs allows Pepsi Bottling to focus on higher priorities, such as bringing innovative product brands to market and meeting profitability goals. Toyota Motor Corporation Toyota Motor Corporation is one of the leading Japanese car manufacturers in the world. Toyota uses Just-In-Time (JIT) Inventory or `hyojunka`, which means `flattening` in Japanese. In particular, this method is used for reducing overall supply chain costs. Toyota`s lean operation focuses on the idea of `buy one, sell one` and is able to manufacture vehicles in about the same order customers purchase them.

This adaptability gave Toyota advantage of keeping the least inventory among Japanese manufacturers. Rather than running large batches and keeping excess inventory, plants quickly run a small batch and keep inventory low, which helped to reduce C2C cycle of the whole operation with efficient manufacturing and effective forecasting (Shana, 2003). Main system for Toyota would be `kanban`, that helps to support lean production and Just-In-Time Inventory control. It was originally developed by Toyota in the 1950s as a way of managing material flow on the assembly line. `The essence of the Kanban concept is that a supplier or the warehouse should only deliver components to the production line as and when they are needed, so that there is no storage in the production area. Within this system, workstations located along production lines only produce/deliver desired components when they receive a card and an empty container,

<https://assignbuster.com/inventory-management-systems-flashcard/>

indicating that more parts will be needed in production. In addition, Kanban limits the amount of inventory in the process by acting as an authorization to produce more inventory.

Since Kanban is a chain process in which orders flow from one process to another, the production or delivery of components are pulled to the production line“ (Olsson, 1996). Toyota developed this system further into integrated system, which helps to manage all aspects of the business aside of inventory management and control. Daimler Trucks North America Daimler Trucks North America builds trucks for the heavy duty trucking industry. The company headquarters is located in Portland, Oregon with a Western Star manufacturing facility located on Swan Island nearby.

Congdon (2008) stated, “ It takes approximately 10, 000 parts to build a truck,” says Robert Clark, senior program analyst for Daimler Trucks North America. ” (Kanban cards offer low inventory visibility, para. 2). Unlike Daimler’s other plants where trucks are built on a routine assembly line the trucks that are built at Western Star are custom configured by the customer before being built. This type of production has created some unique issues with having parts readily available for production. Daimler has tried different inventory systems for this truck plant.

They tried Toyota’s Kanban system for Just-In-Time manufacturing which failed due to the customization of each truck making this system very labor intensive. The Kanban system also made it very difficult to track how many parts they had available with their unique production process. Efforts to improve on the Kanban system failed when Daimler tried to implement bar

code scanning technology into the system. The extra steps of having to scan everything involved in the tracking parts from the warehouse to production floor became labor intensive.

Daimler decided to implement a Radio Frequency Identification (RFID) to track parts that are shipped from the warehouse to the production floor. Congdon (2008) stated, “ In fact, Daimler Trucks estimates that its RFID solution is saving the company \$28, 000 in labor costs annually for each of its two shifts” (Parts tracking via RFID provides real-time impact, para. 2). By adjusting Toyota’s JIT system and modifying it to work for the Western Star truck plant Daimler has been able to enhance their production capabilities with the ability to easily track how many parts they have in stock.

The ability to make customized bins of parts that are easily transferred from the warehouse to the production floor and make sure that the correct bins are sent to the right trucks making production more efficient. Advantages and Disadvantages of Various Inventory Management Systems Apple Computers Ford Motor Corporation Hewlett Packard Corporation “ In 2006, the software-enabled business process (PRM) helped HP to manage over \$7 billion in spending; this resulted in material-cost savings of \$128 million. Over the past six years, HP has realized more than \$425 million in cumulative cost savings using the PRM approach”.

Interfaces, 2008) Conversely, some of the inventory risks due to high probability events include supplier bankruptcy, shipping accidents, customs delays, theft of parts/products and transit delays. Organizational challenges in implementing PRM include (1) improving strategy by adding risk

management into core part of supply chain strategy (2) enhancing metrics and process via addressing/ supporting risk management and developing skills and toolsets by increasing understanding of techniques to measure and manage risks and (3) minimizing uncertainties by engaging ERP and supply chain management. (Nagali, 2006) PepsiCo

Toyota Motor Corporation Just-In-Time inventory (JIT) is part of a production system that helps to reduce inventory from its production processes, which saves significant holding costs. While JIT inventory systems are very attractive for this reason and may be a necessity given the inventory demands of certain business types, but they pose significant risks as well. JIT systems have several cost-cutting advantages specifically in depreciation and storage costs. Finished cars tend to go rusty over the time. By using this method Toyota can cut depreciation costs by not keeping excessive cars and parts in the storage.

It saves a company storage costs because finished cars do not wait for the customer in a warehouse. And these storage cost savings apply not only to the finished goods, but also to parts that Toyota might use as inputs in production. These inventories are kept at minimum through JIT systems as parts are ordered as needed. JIT systems also cut delivery costs as finished products are shipped to where they are in demand. Suppliers of firms using JIT systems may be able to handle larger order but fulfill them with smaller shipments.

With JIT it is typically easier to do it because shipments tend to be smaller and less demanding for a supplier. This allows suppliers to expand their

ability to fill larger orders without having to increase production capacity.

Several factors, however, make JIT systems a risky proposition. Normally JIT systems use a single supplier because production involves highly proprietary products. This puts JIT companies at risk because they may not have immediate inventory in case something interrupts supply from the designated supplier.

Such an interruption of supply may be so costly that the company may just allow the supplier to overcharge it up to the cost of this interruption. Even more dangerous are internal issues that may lead single suppliers to be unable to fulfill a company's orders. The company will have no option but to incur the costs of interruption of its production input supply. Such issues may include a labor strike at supplier or a supplier going bankrupt. JIT system therefore increases the risk that problems or failures on one end of the production chain may cause significant damage to the company and its customers.

Overall, JIT inventory systems provide for an attractive, cost-cutting production system as long as risks are weighed and mitigated. Preventative measures such as thorough check on supplier's integrity as well as not limiting options to a single supplier, can help to implement a successful JIT system (Atkinson, 2005). Daimler Trucks North America The advantages to Daimlers RFID system enhancing Toyota's Kanban system has helped Western Star keep track of the tens of thousands of unique parts that are required to build a truck.

Having all parts RFID they are able to know how many parts are available at any given time and their location. This helps Western Star know if they are going to have all the parts that are needed to build a certain truck. The disadvantages to this system are parts wrongly tagged or if two tags that are on a part do not agree. If incorrectly tagged parts are not discovered that could throw off the inventory systems for not only the Western Star plant but also supplier deliveries.