

Inventory management system

VIEW POINT : Service Provider
SERVICES : Logistics
TECHNOLOGIES : PHP, Mysql, Apache and Linux

BUSINESS PROBLEM :

A major US corporation identifies a cash flow problem. Further analysis reveals that inventory levels are high and turns are below most major competitors. In addition a technology change and a proliferation of models amplify the issue. Just like any investment in business, inventory needs to serve the purpose of maximizing profit. However, in many cases inventory has turned into a major cash flow constraint thus making it necessary to optimize inventory using analytical and statistical methods in an integrated approach. The corporate goal is a reduction of inventory across the order fulfillment process in excess of 50% with no negative impact on service levels. Customer feedback reveals that a key to customer satisfaction is on time delivery and any deviation from promised dates has a negative impact on customer satisfaction.

SOLUTION IMPLEMENTATION:

A baseline of the existing order fulfillment process is conducted. It quickly highlights some key leverage points in the order fulfillment process. Furthermore it becomes apparent that much of the current inventory is present due to internally generated variation versus customer driven order variation. Following the baseline activity various process changes are modeled to verify their impact on inventory levels and service levels. Real world constraints are taken into account prior to deciding on the appropriate changes. As a result the following changes are made to accomplish the goals. Total quality management

- ⇒ Implementation of a Pull System for the order fulfillment process. This pull system spans from supplier through manufacturing, logistics to the customer. The previous order fulfillment process was managed via an MRPII system.
- ⇒ Determination of inventory levels using economic and statistical methods in an integrated approach.
- ⇒ Implementation of appropriate inventory management models to minimize cost given various real world conditions in the supply chain (flow production, batch production, remanufactured parts inflow etc.).
- ⇒ Revision of the planning process to support the order fulfillment process.
- ⇒ Training of analysts to determine the appropriateness of forecast models.
- ⇒ Reduction of internally generated variation through Organizational changes to reduce tampering

DEVELOPMENT AND RESULTS:

- ⇒ Management of the new process is significantly less resource intensive than the original process. Changes in volume are easily accomplished due to the simplicity of the new order fulfillment process. Inventory is reduced and service levels to customers are improved.
- ⇒ Inventory reduction post full implementation: > \$20,000,000