

ANALYTICAL MODEL FOR JUST-IN-TIME PURCHASING

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Abstract:

Just-in-Time purchasing strategy is adopted by organizations to gain advantage over their competitors. Implementation of purchasing strategy can increase firms' performance. Just-in-Time purchasing strategy has benefits like higher inventory turnover, increased product quality and productivity. This strategy lead to a reduction in product costs. Lower prices will lead to increased market share and profit. This paper is based on model of Just-in-Time purchasing factors like top management commitment, employee relations, training, supplier quality management, transportation, and quantities.

Keyword: Employee, Account, Transportation, Asset, Inventory

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Introduction:

Inventory valuation and management is very important for managing current assets on the balance sheet. Proper valuation of inventory is necessary. It will affect total assets and shareholders equity on the balance sheet. It will also affect net income on the income statement of the companies. An inventory valuation allows a company to provide a monetary value for items that make up their inventory. Accurate inventory valuation requires accurate inventory record keeping. If companies use an accurate costing method for valuation of inventory, it will be a waste of time if the record accuracy level is poor. Maintaining accurate record is also important, because companies are striving for leaner production and processes. Competitive pressure force manufacturer to continuously improve the provision of products and associated services desired by customer. Manufacturers have adopted lean practices such as jit and TQM to reduce costs and improve quality. Lean manufacturing was developed by Toyota and other Japanese companies. Lean thinking is applied to every aspect of the company including financial and management accounting processes. Lean manufacturing is a strategy designed to achieve the shortest possible production cycle by eliminating waste. Lean accounting concepts are designed to better reflect the financial performance of a company that has implemented lean manufacturing processes. These may include methods like organizing costs by value stream, changing inventory valuation techniques, and modifying financial reports to include nonfinancial information. Lean Accounting is considered as one of the business strategy of lean enterprise. Lean accounting organizes company in value streams, apply flow and pull system, empower employees and continually pursue perfection. Evaluation of inventory is an important aspect of financial control under lean accounting. When inventories are low and under good control (using pull systems, single-piece flow, supplier partnerships). In this paper section A consist related work and section B deals with Model for Just-in-Time Purchasing and Conclusion

Section A:

Related Work:

Jan et al. have said that lean accounting concepts reflect the financial performance of a company that has implemented lean manufacturing processes. Lean accounting concept include

organizing costs by value stream, changing inventory valuation techniques, and modifying financial reports to include nonfinancial information. Lean accounting will reduce inventory by applying flow and pull system □. Matthias et al. have reviewed that the lean concept is the outcome of a dynamic learning process. It is based on the practices adopted by automotive and textile sectors in Japan □. Bradley et al. have discovered that lean principles can apply to others sectors □. Womack et al. mentioned that to improve firm's performance lean production relies on a set of practices including Kanban, total quality management, Just in Time practices, to minimize waste like excess inventories, scrap, rework □. Claycomb et al. have state that "in its ideal form, JIT integrates the entire supply chain's marketing, distribution, customer service, purchasing, and production functions into one controlled process." JIT as a comprehensive strategy that combines the primary tactical elements of JIT-production and JIT-purchasing, to eliminate waste and optimally utilize resources throughout the supply chain[6]. Mehra et al. have identified four elements of JIT: JIT-production strategy, JIT vendor strategy (purchasing), JIT education strategy and management commitment. Only JIT-production and JIT vendor strategies were found to have a significant impact on JIT implementation success [7]. Shah et al. have identified four "bundles" of lean production: Just-In-time, Total Quality Management, Total Preventive Maintenance and Human Resource Management [5]. Shah et al. have proposed and test 10 dimensions that can be used to measure these four "bundles" of lean production. Six of the 10 dimensions are elements of JIT with three pertaining to supplier aspects of JIT (purchasing) and three related to aspects of JIT production. Therefore, while a number of JIT elements have been identified, two, JIT-production and JIT-purchasing, seem to garner the most support for their criticality to organization success [8]. Wisner et al. have stated JIT-production focuses on the identification and elimination of all forms of waste, including excess inventories, material movements, production steps, scrap losses, rejects and rework, within the production function [9].

Freeland et al. have operationalised JIT-purchasing as a "set of techniques and concepts for eliminating waste and inefficiency in the purchasing process." Techniques and concepts associated with JIT-purchasing include daily delivery of small lot sizes from nearby vendors, shared information, supplier education, reduced inspection and early supplier involvement in product/process design [10]. Green et al. have stated that the techniques utilized by JIT-production and JIT-purchasing allow firms to translate the resulting capabilities into a JIT

strategy that provides organizational capabilities to deliver near zero defect quality, near zero variance quantity and precise on-time delivery [11]. Schonberger et al. have said that JIT purchasing characteristics focus on using a small number of suppliers with whom the company maintains long-term relationships, having frequent deliveries in small quantities, ensuring supplier quality performance, and controlling the shipping process [12]. Flynn et al. have identified five overlapping “infrastructural” practices: information feedback, plant environment, management support, supplier relationship, and workforce management, that enhance the performance of both JIT and TQM.

Section B:

Based upon discussion on related work few elements have identified. The survey was conducted through a questionnaire administered to 10 organisations. The questionnaire consisted of the profile of the organizations, the manufacturing complexity and other information pertaining to JIT implementation. Analysis of model is explained below-

Top management commitment: Top management commitment to JITP is needed for several reasons. Top management must make JITP a priority and communicate its importance to all employees. The lack of training and education of suppliers has been a major impediment to the implementation of JITP. Top management must view suppliers strategically, and provide resources for assessment and assistance

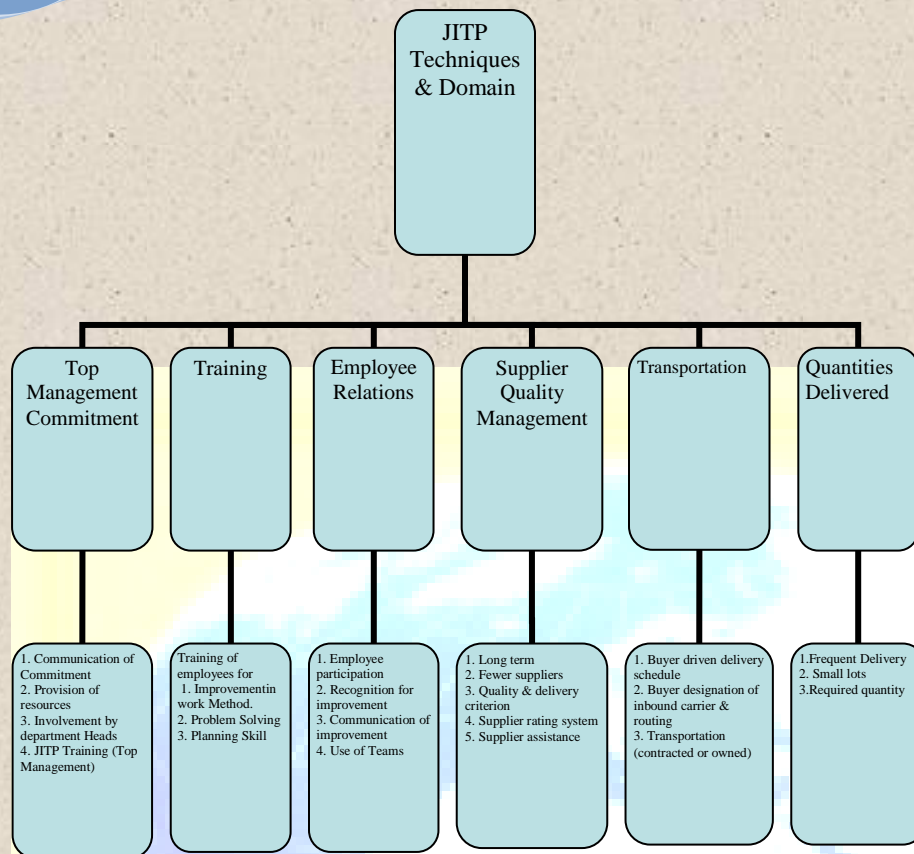


Figure- Model for Just In Time Purchasing

Training- Buyers must be trained to manage supplier quality. Quality tools are important to JITP because companies often use measures such as parts-per million defective, reliability, process capability ratios. The first step in supplier development and enhanced supplier performance is the implementation of quality improvement practices.

Employee Relations- The employee relations include participation in employee recognition, teamwork and communication of organizational goals. Teams comprised of members from purchasing, material control, process/design engineering, production and suppliers can solve supplier quality problems.

Supplier Quality Management- Supplier quality management practices include establishing long-term cooperative supplier relationships. It is easier to develop long-term, cooperative relationships with smaller number of suppliers.

Transportation- On time delivery is critical to support JIT initiatives and reduce inventory levels. Under JITP, delivery schedules are based on the buyer's schedule, as opposed the supplier's

schedule suggests that JITP requires fast, responsive transportation modes. In addition, fewer carriers are used and new routes are established

Quantities delivered-Products are made in small lot sizes. Production stoppages may delay delivery to the next customer in the supply chain. Delivery of larger quantities than needed defeats one of the purposes of JITP, which is reducing inventory carrying costs.

On the basis of model -JIT purchasing can be classified into two groups:

1. Direct 2. Indirect

The most important direct benefits include:

- Increase in purchase material turnover
- Increase in ability to meet delivery promises
- Reduction in delivery lead time
- Reduction in scrap cost

The direct benefits of JIT purchasing lead to its indirect benefits. The most important indirect benefits are:

- Achievement in encouraging suppliers to meet quality requirements,
- Improved product quality
- Increased productivity

Conclusion:

In this paper, analysis of JITP model includes that JITP scales are reliable. Main focus of this paper is coordination among top management commitment, training, and employee relations. Strategy has important implications for managers. Study shows that companies attain greater benefits when JIT implementation is more comprehensive. Analysis of factors will be helpful to other researchers.

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