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# A STUDY ON JUST IN TIME AND TOTAL QUALITY MANAGEMENT SYNERGISTIC PROCESSES

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**ABSTRACT:**

There is interest of observe approximately implementation of Just-in-time (JIT) and Total Quality Management (TQM) for enterprise improvement. There are many corporations put in force JIT and TQM ideas in numerous distinction ways. Some of corporation may also pick to begin with TQM practices to be able to enhance nice of product and carrier via the corporation. Some of corporation may also pick to begin with implementation of JIT practices for disposing of waste and maximizing usage of stock and resources. The separate influences of JIT and TQM practices on enterprise overall performance have been analyzed and mentioned in lots of research. In 1990s, a few research attempted to discover the joint impact of each implementation of JIT and TQM on overall performance. Those research talked about the obtrusive that joint implementation of JIT and TQM ended in tremendous better overall performance than implementation of both one.

**KEY WORDS:**

Just-in-time (JIT), Total Quality Management (TQM), JIT and TQM implementation, Performance

## INTRODUCTION:

Organizations worldwide are facing increasing pressures to accomplish and maintain their competitive position and performance. In today's highly dynamic and rapidly evolving environment, the global competition among organizations has directed to higher demands on the manufacturing organizations. The pressure put on the manufacturing organizations due to globalization has been made organizations to adapt proactive and new strategies to for improving their manufacturing skills and quality of production. For meeting the sustainability and growth endeavors of the organizations, manufacturing organizations need to strategically focus upon cost cutting, increasing productivity, quality and guaranteeing deliveries in order to satisfy customers.

In this study we have study JIT and TQM Process, focuses on the synergy of joint implementation of TQM and JIT practices upon competitive performance in organization.

## OBJECTIVES OF THE STUDY:

1. To study JIT – Just in time process and methods
2. To study TQM – total quality management process and methods.
3. To study JIT and TQM Process, focuses on the synergy of joint implementation of TQM and JIT practices upon competitive performance in organization

## LITERATURE REVIEW:

Flynn et al. (1995), used practitioner's and empirical literatures developed the quality management framework for manufacturing companies, including top management support, workforce management, quality information, supplier involvement, product design, process management, and customer involvement. Ahire et al. (1996), based on both conceptual literature and empirical and practitioner literature, developed the instrument for quality management, using top management commitment, supplier quality management, supplier quality management, supplier performance, customer focus, SPC usage, benchmarking, internal quality information usage. Recently, much of effort is to empirically examine the impact of quality management practice on quality performance and competitive advantages (Kaynat, 1998; Matsui, 2002).

Sakakibara et al. (1993) developed an analytical framework and measurement instrument for JIT based on sixteen key JIT practices. Calen et al. (2000) suggested that JIT manufacturing at the plant level is associated with greater productivity in inventory usage, lower total and variable costs, but not fixed costs, and higher profits. Ahmad et al., (2004) examined the role of infrastructure practices in the effectiveness of JIT practices from three Perspective universal, contingency, and configurationally, and reported that synergy between JIT practices and infrastructure practices needs to be exploited to attain superior plant competitiveness.

The relationship between TQM and JIT was examined in some empirical studies (Flynn et al., 1995; Sriparavastu and Gupta, 1997; Cua et al., 2001). These studies reported the compatibility and trade-off between TQM and JIT practices and their combination yields synergies that lead to higher level of performance. Flynn et al., (1995) found the significant impact of TQM and JIT on quality and JIT performances. Sriparavastu and Gupta, (1997) reported that most production systems can benefit from certain aspects of JIT implementation without having TQM in place first. Cua et al., (2001) pointed out the evidence supporting the compatibility of the TQM and JIT practices and that manufacturing performance is associated with the level of implementation of both socially- and technically-oriented practices of these programs.

## RESEARCH METHODOLOG:

Research methodology is a way to systematically solve the research problem. In this we study the various steps that are generally adopted by the researcher in studying his/her research to know not only the research methods and techniques but also the methodology.

Researchers also need to understand the assumptions underlying techniques and they need to know the criteria by which they can decide that certain techniques and procedures will be applicable to certain problems and others will not. All this means that it is necessary for the researcher to design his methodology for his problems as the same may differ from problem to problem.

1 Research Tool

The research tool used by the researcher is online information retrieval. The online information retrieval consists of few questions of various dimensions related to the practices of the organization.

2 Source of Data

Secondary data were used in this study. Secondary data were collected from various related books, magazines, reports prepared by research scholars, various websites, etc.

3 Statistical Tool

The data thus collected were classified, tabulated, analyzed and interpreted to carry out the objectives of the study. The simplified data is then portrayed in the form of diagrams.

## STATEMENT OF PROBLEM:

Intensifying global competition and rapid advancement of manufacturing technology are two realties in today's business environment. These have combined to shift the business strategic priorities toward quality, cost effectiveness and responsiveness to marketplace changes.

The quest for lower operating costs and improved manufacturing efficiency and quality has forced a large number of manufacturing firms to embark on TQM and JITs projects of various types. Dramatic developments in JIT at various organizational levels can be attributed to numerous benefits that improve the competitive position of the adopting companies. TQM and JIT impact not just manufacturing, but the whole business operations, giving new challenges to a firm's ability to manage both manufacturing and quality.

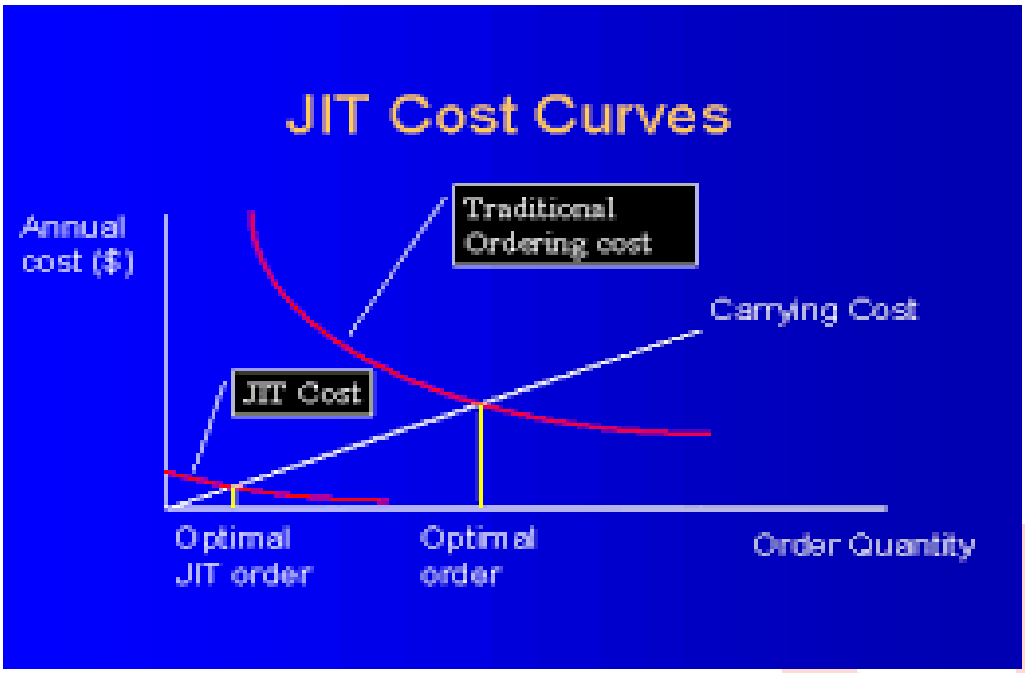
Most of the discussions in prior studies have centered on either JIT or TQM but an increasing number of researchers have begun to explore the issues relating to a joint implementation of JIT and TQM. Many previous studies have encountered difficulty in precisely listing the practices comprising JIT and TQM because of the extensive overlap between these approaches. The overlapping practices of JIT and TQM are more than coincidental and they may be mutually supportive. The companies implementing both JIT and TQM jointly outperform those implementing only one of these, or none. All major elements of JIT are embedded in a more comprehensive TQM campaign because TQM has a much broader focus on improving the overall effectiveness of an organization. Management should not treat JIT and TQM as being exclusive business strategies. Rather, management should take an integrated view of joint JIT-TQM implementation

## ANALYSIS:

In this section, we present the benefits of bringing the processes to the product and discuss the value of simulation as a tool to design and predict cell performance prior to implementation; therefore, reducing financial and technical risk to the company.

On September 10, 1997, Mr. Hoskins presented on "Improve Profits and Reduce Cycle Time with Manufacturing Cells and Simulation" for the National Technology University series on Kanban just-In-Time Manufacturing of this series.

On October 27 – 28, 1996 Jerry Hoskins, President presented a paper titled "Developing a Lean Implementation Roadmap" at the SME Kanban Manufacturing Conference in Dearborn, Michigan. The intent of this paper is to provide information to companies on where to start with a Kanban implementation based on where one is currently manufacturing operation. These systems are more flexible, responsive, and profitable than traditional manufacturing systems. And, its theory also help our many participate determine where best to start with a Kanban implementation which usually involves an assessment of current operations. Once plan is developed we design the system to be implemented which may involve layout, cells, JIT, process technology, and process simulation.




One of the greatest benefits of adopting a just-in-time inventory system is the amount of money you save from lowering your operating costs. As you can see in the graph, JIT costs are minimal compared to that of traditional ordering costs. JIT allows firms to lower costs drastically due to that fact that carrying costs, which are a big portion of operating costs, decrease tremendously when adopting this approach. Carrying costs consist of all costs involved in ordering and holing inventory. With JIT, holding costs diminish, which saves the organization from needing extra warehouse space. Excess inventory sitting on a shelf does the organization more harm than good. JIT gives companies a way to eliminate the excess inventory, while saving them money in the meantime.

**Analysis of Increased Productivity:**

Like the picture above shows, when your inventory levels are off-track, it creates multiple problems with the overall productivity of the company. When you have a rocky foundation, disasters are more likely to happen, and can potentially be fatal to the company. This picture really captures the essence of what a failing company looks like, because from the outside, it looks like smooth sailing; however, when you look below the surface at the actual operations of the company they are about to crash.

Implementing a JIT inventory system relieves a lot of the problems listed above, which in turn increases the productivity of the company as a whole. When the company is more productive, their operations are more efficient, thus saving time on material and labor costs, and lowering their operating costs as a whole.

When productivity increase, the morale of the management increases, thus reflecting on the employees are a whole. When management is motivated, they tend to put more effort into managing and empowering their employees, which in return makes them want to work even more efficiently. Something as simple as lowering inventory levels, can have a huge impact on the operations of a company, and create a positive chain reaction throughout the entire organization.

**Improvement Process analysis:**

The main objectives of JIT are obtaining low-cost high quality products and on-time production as well as eliminating waste and stagnant stock (Svensson, 2001). Even though most of JIT implementation has similar aim and purposes, the strategies involved may differ from industry to industry or company to company. Ford has smartly chosen the right methods and strategies by reducing the barriers in relation with its suppliers. Through JIT, Ford is achieving the highest efficiency in car manufacturing industry. Toyota's plants in India have become the standard and being adopted in its other plants in many other countries. Apart from its tangible benefits such as saving on transport costs, stock/inventory costs, quicker manufacturing process and minimized risk or wastage, JIT will also bring immediate intangible benefits such as improved customer satisfaction through immediate responses and shorter timeframe to respond towards market trends.

## CONCLUSION:

Most of the discussions in prior studies have centered on either JIT or TQM but an increasing number of researchers have begun to explore the issues relating to a joint implementation of JIT and TQM. Many previous studies have encountered difficulty in precisely listing the practices comprising JIT and TQM because of the extensive overlap between these approaches. The overlapping practices of JIT and TQM are more than coincidental and they may be mutually supportive. Manufacturing practices can be divided into three groups: unique JIT practices, unique TQM practices, and common infrastructure practices and evaluated their impacts on cycle time and quality (i.e. JIT and TQM performance measures, respectively). The use of TQM practices improved JIT performance through process variance reduction and reduced rework time, Total Quality Management & Just In Time thereby providing the levels of quality that allow production to proceed with minimum safety stock inventory while remaining on schedule. In turn, the use of JIT practices improved quality performance through problem exposure and improved process feedback. Not only that there are relationships and interactions between JIT and TQM practices and performance, and JIT and TQM function effectively in isolation, their combination yields synergies for further performance improvements. While the unique JIT and TQM practices added predictive power of the JIT and TQM related performance, the most significant factor turned out to be the common infrastructure practices (including information feedback, management support, plant environment, workforce management, and supplier relationship).

The companies implementing both JIT and TQM jointly outperform those implementing only one of these, or none. All major elements of JIT are embedded in a more comprehensive TQM campaign because TQM has a much broader focus on improving the overall effectiveness of an organization. Management should not treat JIT and TQM as being exclusive business strategies. Rather, management should take an integrated view of joint JIT-TQM implementation

## LIMITATION RESEARCH:

1. The result of the study is based on the secondary data. Hence the secondary data collected from company web site may be biased.
2. The time allotted for the study is limited.
3. Limited access to data.

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