

Analysis of just in time production methods

[Philosophy](#)



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Introduction

Just in time is a 'pull' system of production, so actual orders provide a signal for when a product should be manufactured. Demand-pull enables a firm to produce only what is required, in the correct quantity and at the correct time." Just-in-time is an inventory system where raw materials are delivered right before they are needed on the assembly line, and finished goods are manufactured just before they are shipped to customers. Just-in-time improves return on investment by substantially reducing overhead cost, limiting quality inspections, and eliminating obsolete inventory".

This means that stock levels of raw materials, components, work in progress and finished goods can be kept to a minimum. This requires a carefully planned scheduling and flow of resources through the production process. Modern manufacturing firms use sophisticated production scheduling software to plan production for each period of time, which includes ordering the correct stock. Information is exchanged with suppliers and customers through EDI (Electronic Data Interchange) to help ensure that every detail is correct.

A more specific definition is provided by Calvasina et al. (1989): "JIT is a system of production control that seeks to minimize raw materials and WIP inventories; control (eliminate) defects; stabilize production; continuously simplify the production process; and create a flexible, multi-skilled work force." Successful JIT implementation should accomplish two major objectives: improve quality and control the timeliness of the production and

delivery of products. (Davy; Monden and Walleigh). (Sciencedirect. com, Accessed on 13th May 2011)

JIT is of 2 types which are:

JIT production: This where the production of the goods is started only when the customer places the order. In this method there will not be finished good stocks but there will be raw material stocks as the purchasing is carried out in normal way.

JIT purchasing: This goes one step beyond the JIT production where the purchasing of raw materials for production is also carried out once the order is placed by the customer eliminating raw material stocks.

<http://www.tutebox.com/business/management/just-in-time-concept/>

JIT Concept

JIT is a process aimed at increasing value-added and eliminating waste by providing the environment to perfect and simplify the process. JIT in time concept was initiated in Japan making the Toyota as its master piece. JIT is system whether company starts manufacturing/purchasing once the customer orders the good effectively making zero inventories. In other words, in a JIT environment materials are purchased and produced as and when it is needed. The whole idea is based on the phrase provide the goods just in time as promised when the order is placed by the customer. The opposite of the JIT production is known as JIC (Just in case) system where it produces goods for inventory with the intention of having goods just in case a customer places a immediate order.

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The whole concept of the JIT is differentiated from traditional productions systems using push vs pull systems of production. The push system of production pushes materials to the next stage of the production irrespective of whether time and resources are needed at the next level of production creating lot of inventories at each level of the production flow. The traditional manufacturing organizations adopt push system where they produce for inventory and work in progress. The pull system of production is where the materials are pulled by next level of the production only when is signaled or required by the next stage of production. This drastically reduces the inventory held as it does not keep any work in progress. JIT concept is built based on the concept of pull production which eliminates the total inventory.

Source: Kaluarachchi, 2009)

Kanban: kanban is a Japanese word which means cards and information will be indicated in that card. Usually information includes serial no. of product identification, the quantity, the required operation and place of enquiry.

Kanbans allow to link different production process together (Jarvis, podolsky. s, cheng. t. c. e, 1996).

Key elements in JIT

One problem with JIT is that it only works well in certain types of organization. The most successful users of JIT are currently car assembly plants, which make large numbers of similar products in a continuous process. You can see why this is, from the following arguments.

Every time there are changes to a process, or it switches from making one product to making another, there are delays, disruptions and costs. JIT says <https://assignbuster.com/analysis-of-just-in-time-production-methods/>

that these change waste resources and should be eliminated.

The level of production must allow a smooth and continuous flow of products through the process. Each part of the process should be fully utilized, so the process is likely to be a well-balanced assembly line.

Deliveries of materials are made directly to the assembly line at just time they are needed. Suppliers must be able to adapt to this kind of operation.

Lead times must be short or the delay in answering a request for materials becomes too long. This means working closely with the suppliers and even having them build facilities that are physically close.

As there are no stocks to give safety cover, any defects in materials would disrupt production. Suppliers must, therefore

If something goes wrong, people working on the process must be able to find the cause, take the action needed to correct the fault, and make sure that it does not happen again. This needs a skilled and flexible workforce that is committed to the success of the organization.

(source:- Donald Waters (2002) p. 461)

Benefits of JIT Manufacturing System

The main benefits of JIT have been well famous within the literature. A carefully planned implementation of JIT can directly provide increased teamwork and employee involvement, as the organization works together to find areas of waste to target and work out ways to reduce waste in that area (Slack, Chambers, & Johnston, 2007). This results in a simplification of the inventory management system, as well as business processes involved in inventory management. Supplier relationships and data regarding the

business are used to identify specific areas where inventory improvements are required.

Lower stock holding means a reduction in storage space which saves rent and insurance costs

Areas previously used, to store inventories can be used for other more productive uses.

As stock is only obtained when it is needed, less working capital is tied up in stock.

Funds that were tied up in inventories can be used elsewhere.

Throughput time is reduced, resulting in greater potential output and quicker response to customers.

There is less likelihood of stock perishing, becoming obsolete or out of date
Avoids the build-up of unsold finished product that can occur with sudden changes in demand.

Defect rates are reduced, resulting in less waste and greater customer satisfaction.

Less time is spent on checking and re-working the product of others as the emphasis is on getting the workright first time.

(Source: www.ritalogisticsblog.wordpress.com/2010/04/12/advantages-and-disadvantages-of-just-in-time-jit-manufacturing-and-inventory-control-system/ (Accessed on 9th May 2011))

Disadvantages of JIT

JIT has many strong points, there are weaknesses as well. “ In just-in-time, everything is very interdependent. Everyone relies on everybody else”

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(Greenberg, 2002). Because of this strong interdependence with JIT, a weakness in the supply chain caused by a JIT weakness can be very costly to all linked in the chain. JIT processes can be risky to certain businesses and vulnerable to the supply chain in situations such as labour strikes, interrupted supply lines, market demand fluctuations, stock outs, lack of communication upstream and downstream in the supply chain and unforeseen production interruptions.

Weakness of Just in time is a high danger plan because scheduling work is short period and the inventory degrees are kept to a minimal degree. In total quality of product is key issue with Just in Time conception.

There is little room for mistakes as minimal stock is kept for re-working faulty product

Production is very reliant on suppliers and if stock is not delivered on time, the whole production schedule can be delayed

There is no spare finished product available to meet unexpected orders, because all product is made to meet actual orders - however, JIT is a very responsive method of production.

The key characteristics of JiT 1

The main characteristic of Just - In - Time 1 is to reduce the inventory and the benefits while reducing the inventories. The purpose of Just - In - Time (JIT) is for organizations, aiming to minimize their inventory, to have material that is provided when required for use, minimizing any physical stock that is stored. JIT is not without its challenges, overproduction or procurement of excess material can conceal manufacturing issues or compensate for

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demand variability and these issues need to be resolved for Just in time inventory to be successful.

Just - In - Time (JIT) works in the three types of inventories:

1) Raw Materials: Inventories provide insurance in case suppliers are late with deliveries.

2) Work in process: Inventories are maintained in case a work station is unable to operate due to a breakdown or other reason.

3) Finished Goods: Inventories are maintained to accommodate unexpected fluctuations in demand.

JIT Inventory Management

Just-in-Time (JIT) inventory management is the process of ordering and receiving inventory for production and customer sales only as it is needed and not before. This means that the company does not hold safety stock and operates with low inventory levels. This strategy helps companies lower their inventory carrying costs. Just-in-time inventory management is a cost-cutting inventory management strategy though it can guide to stock outs. The goal of JIT is to improve return on investment by reducing non-essential costs.

Examples: Just-in-time inventory management is used by Toyota

Manufacturing as its inventory management system. The basic principle of JIT is “lean manufacturing” or reduction of inventory. Unlike the traditional accounting notion that considers inventory as adding and storing value, JIT considers inventory as waste and incurring costs.

Lean Manufacturing:-Identification and elimination of waste is the central theme of a lean manufacturing production system. Lean manufacturing is a dynamic and constantly improving process dependent upon understanding and involvement by all employees. Successful implementation requires that all employees must be trained to identify and eliminate waste from their work. Waste exists in all work and at all levels in the organization.

Seven Types of Waste are:-

1. Over Production:-

Producing more than needed and producing faster than needed.

Overproduction is to manufacture an item before it is actually required.

Overproduction is highly costly to a manufacturing plant because it prohibits the smooth flow of materials and actually degrades quality and productivity.

The Toyota Production System is also referred to as “ Just in Time” (JIT)

because every item is made just as it is needed. Overproduction

manufacturing is referred to as “ Just in Case.” This creates excessive lead times, results in high storage costs, and makes it difficult to detect defects.

The simple solution to overproduction is turning off the tap; this requires a lot of courage because the problems that overproduction is hiding will be revealed. The concept is to schedule and produce only what can be immediately sold/shipped and improve machine changeover/set-up capability.

Over-production results in higher costs for storage, Lack of Communication, Local Optimization, Automation in the Wrong Places, Cost Accounting Practices and Lack of Stable/Consistent Schedules excessive lead times, and <https://assignbuster.com/analysis-of-just-in-time-production-methods/>

it makes detecting the defects quite difficult. The solution for over-production is to stop producing materials and only produce what can be immediately sold or shipped. Poor information flow is another reason that over-production occurs, hence why communication is so important in the lean manufacturing process.

2. Unnecessary Inventory :-

Work in Progress (WIP) is a direct result of overproduction and waiting. Having excessive inventory will lead to increased lead times, limited floor space, and poor communication. Too much inventory often masks problems from other areas as well. Generally an arrival of inventory can be traced to poor communication and batch processing. By achieving a unspoiled flow between work centres, many manufacturers have been able to improve customer service and slash inventories and their associated costs.

3. Waiting Times:-

Whenever goods are not moving or being processed, the waste of waiting occurs. Delay refers to the waste of goods that are not moving. As you already may be aware, much of a product's life is spent waiting for the next phase. The reason this is considered a waste is because the good should never be waiting. If they are waiting it is due to poor material flow, long production runs, and distances between work centres are too great. Goldratt (Theory of Constraints) has stated many times that one hour lost in a bottleneck process is one hour lost to the entire factory's output, which can never be recovered. Linking processes together so that one feeds directly

into the next can dramatically reduce waiting. (source: www.emsstrategies.com)

4. Inefficient Transporting :-

Moving your product from one location adds no value to your product. Many products are damaged or lost, causing a waste of money. Transporting also requires the use of material handlers, and this also adds no value to the product. This is one waste that is difficult to reduce or eliminate. Material handlers must be used to transport the materials, resulting in another organizational cost that adds no customer value. Transportation can be difficult to reduce due to the perceived costs of moving equipment and processes closer together. Furthermore, it is often hard to determine which processes should be next to each other. Mapping the flow of your product may be one way you can gain a greater understanding of the transportation phase and learn how to reduce the costs.

5. Unnecessary / Excess Motion

This waste is related to ergonomics and is seen in all instances of bending, stretching, walking, lifting, and reaching. These are also health and safety issues. Often the motion is not due to the employee's behaviour, but the machine they are operating may be manufactured poorly and the employee is unable to turn a knob (or something similar) without using poor ergonomics. This waste leads to health and safety issues, which obviously lead to bigger problems in today's controversial society. Causes for excess motion is Equipment, Office & Plant Layout, Lack of 5 S's, Lack of Visual Controls, Inconsistent Work Methods (Standardized Work), Large Batch Sizes.

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6. Inappropriate Processing:-

Several companies purchase high precision equipment to do a simple job. High precision equipment often leads to over-production of goods. This can also encompass using the wrong suppliers or the wrong process to do a job. The causes of processing waste is Engineering Changes Without Processing Changes, Decision Making at Inappropriate Levels, Inefficient Policies and Procedures, Lack of Customer Input Concerning Requirements. Toyota is famous for their use of low-cost automation, combined with immaculately maintained, often older machines. Investing in smaller, more flexible equipment where possible; creating manufacturing cells; and combining steps will greatly reduce the waste of inappropriate processing.

7. Rejects & Defects:-

Defects in the manufacturing process are a tremendous cost to a company. Any small defect directly impacts your bottom line and effects inventory, scheduling, inspection, and other factors. In many organizations the total cost of defects is often a significant percentage of total manufacturing cost. Through employee involvement and Continuous Process Improvement (CPI), there is a huge opportunity to reduce defects at many facilities.

5s's

5S efforts almost always improve workplace safety, operator morale, quality, and throughput. A workplace organization tool/process that maximizes the cleanliness, organization, and safety of all elements in a working environment. 5S supports a smooth production process in various ways. Searching for tools is eliminated, flow principles are applied, and tools

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storage is done where they are needed most. Location indicators visualise how things have been organised, and non conformities are seen at once. The 5S method improves employees' ownership and leads to substantial quality improvement, cost reduction as well as product and process safety The individual items within 5S are known as the " pillars" and are:

1. Sort: -Clearing the work area. Any work area should only have the items needed to perform the work in the area. All other items should be cleared (sorted out) from the work area. It has been variously anglicised as Sort, Systematisation or Simplify by those wishing to retain the S as the initial letter of each element. It is the series of steps by which we identify things which are being held in the workplace when they shouldn't, or are being held in the wrong place. Put simply, we may identify a large area devoted to tools or gauges, some of which are needed regularly and some used infrequently. This brings all sorts of problems, including:

Operators unable to find the item they need, being unable to see wood for trees. The time spent searching is a waste and if we only held the items needed regularly in a prominent position we would save time.

Quality issues when gauges are not calibrated on time because too many are held.

Safety issues when people fall over things.

Lockers and racking cluttering the workplace making it hard to move around or to see each other and communicate.

(www. training-management. com accessed on 10th June 2011)

2. Set: -Designating locations. Everything in the work area should have a place and everything should be in its place. Set is the series of steps by which the most favourable organisation identified in the first pillar are put into place. The standard translation is Orderliness but again some wish to keep the initial S and use Sort Set in order, Straighten and Standardisation. The sorting out process is essentially a continuation of that described in the Set phase. Removing items to be discarded or held in an alternative location will create space. This space will be visible and facilitate the alternative layout of the area.

3. Shine: -Cleanliness & workplace appearance. Not only should the work area be clear, it should also be clean. Cleanliness involves housekeeping efforts, improving the appearance of the work area, and even more importantly, preventive housekeeping - keeping the work area from getting dirty, rather than just cleaning it up after it becomes dirty.

4. Standardize:-Everyone doing things the same way. Everyone in the work area and in the organization must be involved in the 5S effort, creating best practices and then getting everyone to “ copy” those best practices the same way, everywhere, and every time. Work area layouts and storage techniques should be standardized wherever possible. Standardisation includes all the elements of setting out a consistent way of doing things. This includes standard manufacturing methodologies, standard equipment and tooling, component rationalisation, drawing standardisation, consistency in the documentation which accompanies work, design for manufacture (or concurrent engineering) and standardisation in the clerical processes which deliver work to the shop floor and track its progress.

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5. Sustain:-The final stage is that of Discipline often listed as Sustain or Self-discipline. Ingraining the 5S's into the culture. It's tough to keep a 5S effort, or any improvement effort for that matter, going. The 5S's involve a culture change. And to achieve a culture change, it has to be ingrained into the organization – by everyone at all levels in the organization.

(www. training-management. com accessed on 10th June 2011)

JIT II

JIT II is a way to improve the customer-supplier relationship. JIT II uses “ systems integration” which allows, “ sharing of information so that the relationship is more like a partnership” (Pragman 1996). Essentially this equals more and more visibility throughout the supply chain, which equals better responsiveness and lower costs, the two main goals of supply chain management. “ JIT II, a customer-supplier partnership concept pioneered at Bose Corporation and now practiced by major companies and their suppliers, can aid in cutting both design and response lead time” (Pragman 1996). This is talented through systems combination, which seeks ways to improve coordination between different functional areas, as well as bridges the gap between customer and supplier. With JIT II the suppliers have a person within the customer's organization full time acting as a purchasing department employee for the customer firm.

JIT II has really impacted the following areas: “ the administration of the purchasing function, logistics, concurrent engineering and value analysis and material stores and support services. In each of these areas the lead time reductions are greater with JIT II than with conventional JIT” (Pragman 1996).

The administrative benefits of JIT II are due to the fact that the supplier is

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constantly available in-house. JIT II reduces administrative costs for both the customer and supplier because the purchasing costs are not all on the customer and the supplier gets all the business from that specific customer as it wants as long as things go well. Because the supplier is always present “ JIT II permits concurrent engineering and value analysis to take place on an ongoing basis, not just during sporadic sales calls” (Pragman 1996).

Challenges in JIT Concept

There are two major challenges faced in Just - In - Time concept, they are cultural difference, stress on workers, transportation and estimation.

1) Transportation:

The main motto or aim in Just - In - Time is to reduce/ minimise the inventory. Just - In - Time follows different system, in which raw materials order is placed to the suppliers when demand increases from the customers, these raw material then delivered from the suppliers to the manufacturing plant in a right time at a right place, when the raw material is received initially assembling process take place and finally finished products are being delivered to the customer. This process is like chain flow, to have a proper flow transportation place a major role and some companies are careful to use two or more suppliers for most of their assemblies.

There are several challenges which are connected in transportation. When the order is placed to the suppliers, it is their responsibility to deliver the raw material to the manufacturing plant in actual time at exact place. While transporting there are many chances of accident, for example: when the raw material is being exported from one country to another country through

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shipping. Delay in delivering goods because of traffic, climatic condition and crossing country borders, for example: as India is highly populated lots of time is consumed in traffic (Roadways), delay in climate condition occur while transferring goods through airways and checking of documents & passing clearness for the goods travelling from one country's border to another country this may also consume lots of time.

In case, if any problem occurs in transportation the whole system is to be shut and finally resulting in loss of money, customer's satisfaction & increase in Inventory (Stock).

2) Estimation:

Most of the companies or firm suffer because of the word estimation/prediction. In this system without any demand from the customer the manufacturing unit starts producing good and place bulk orders to the suppliers. Finally when the raw materials are converted into finishes goods there won't be customers to purchase it this may led to increase in inventory. And in some companies, manufacturing unit collects limited raw material and produce limited finishes good but the customer demand will be high. So these companies suffer by loosing lots of customer.

In this case company suffers from two major problem one is excess of finished product which result in high inventory or stock and another problem is shortage of finished product which lead to loss of customer.

How Toyota Implemented Just in Time: Challenges Faced and Results

The major challenges faced by Toyota in implementing JIT included
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Multi-skilling the workforce to operate multiple machines based on work-flow patterns

Redesigning every part of the vehicle to eliminate or widen tolerance since assembly lines did not have a choice of which parts to use and every part had to fit perfectly

Testing and training suppliers of parts to assure quality and delivery in time on demand (brighthub. com, Accessed on 14th May 2011)

Factories today just aren't as efficient as they could be. JIT asserts that companies operate under the wrong ideas. The ideas, while logical, result in needless waste. Particularly, JIT challenges the following:

As companies grow, functions tend to become specialized. Factory organization separates fabrication, assembly, shipping, and so on. But departmental production lacks synchronization. Bottlenecks form and cause large in-process inventory and long lead times. Finger pointing between departments to avoid responsibility abounds. (findarticles. com, Accessed on 14th May 2011)

Produce to forecast. Forecasts, in varying degrees of sophistication, “ push” production, in contrast to production being “ pulled” by customers. Even the most sophisticated forecast isn't right; differences inevitably wind up in inventory. (findarticles. com, Accessed on 14th May 2011)

Operations environments in which JiT is most useful

The JiT philosophy has been used in the manufacturing industry for about forty to fifty years now, the system has not only increased productivity but also increased the quality of products, explorative studies have been completed <https://assignbuster.com/analysis-of-just-in-time-production-methods/>

in recent years to see if the JIT system can be applied to construction companies so that they can get the benefits of the system. Most of the research concluded that it can be implemented but with some modifications Pheng & Hui (1998) As stated earlier JIT has proven to work well in the manufacturing sector, it is obvious why it is successful in the manufacturing sector, as it originated from a manufacturing industry.

The concept Just - In - Time used in the following companies:

Toyota Motor Company

General Motors

Ford Motor Company

Harley Davidson

Manufacturing Magic

Hawthorne Management Consulting

Dell Computers.

(Source: www.accountingformanagement.com/just_in_time.htm#Just-In-Time Concept (Accessed on 10th June 2011))

Just - In - Time (JIT) Used in Dell:

Dell has also leveraged JIT principles to make its manufacturing process a success. Dell's approach to JIT is different in that they leverage their suppliers to achieve the JIT goal. They are also unique in that Dell is able to provide exceptionally short lead times to their customers, by forcing their suppliers to carry inventory instead of carrying it themselves and then

demanding (and receiving) short lead times on components so that products can be simply assembled by Dell quickly and then shipped to the customer.

Important factors to Dell's success:

Dependable suppliers with the ability to meet Dell are demanding lead time requirements.

A seamless system that allows Dell to transmit its component requirements so that they will arrive at Dell in time to fulfil its lead times.

A willingness of suppliers to keep inventory on hand allowing Dell to be free of this responsibility.

(Source: www.brighthub.com/office/project-management/articles/71540.aspx (Accessed on 10th June 2011))

Just - In - Time (JIT) Used in Harley Davidson:

Harley Davidson's use of JIT is mostly characterized by its transformation in the late World War 2 era from an inefficient manufacturer that solved all of its problems with extra inventory to a nimble manufacturer able to meet demand and provide short lead times.

Results of Harley Davidson's JIT implementation:

Inventory levels decreased 75%.

Increased productivity.

Harley Davidson's success with the implementation of JIT had a lot to do with the fact that when JIT was put into practice, process problems could no

longer be hidden by costly inventory that helped to meet ship dates. The inefficiencies in the processes were quickly identified and solved.

(Source: www.brighthub.com/office/project-management/articles/71540.aspx (Accessed on 10th June 2011))

Toyota, Dell and Harley Davidson's are the successful companies/ firm which use Just - In - Time (JIT). They produce the effective products according to the customer needs and they these three companies have achieved a competitive advantage within the industries by utilizing Just - In - Process (JIT) concept.

Operations environments in which JiT is most less useful

The Just - In - Time (JIT) concept is used and being useful in many of the firms/Industries especially in manufacturing sectors. But there are some companies where Just - In - Time (JIT) concept cannot be adopted, like drug/medicine manufacturing companies and in the pharmaceutical companies. Just - In -Time (JIT) is all about minimising or reducing the inventories, this concept will not be applicable in these companies. In this case manufacturing sector cannot predict like sickness, spread of diseases, accident and natural calamities.

In this field people cannot demand for the product often, then it won't be possible for the manufacture to place order for the raw materials from suppliers, next is assembling process and finally it is impossible to deliver the finished product to the customer at the right time in the right place, mean time the person may die. In this particular sector there must be a large

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bulk of inventories, the process should be in a continuous flow and Just - In - Time is impossible to implement. Just - In - Time (JIT) would not necessarily improve a drug company's bottom line. Making all pharmaceutical manufacturing processes robust enough that you can do JIT might not be a good business decision because it might cost you more to make the process robust and get it reregistered than the value of having reduced inventory. On the other hand, generic-drug companies might be more eager to adopt Just - In - Time (JIT) manufacturing than innovator companies. Generic-drug manufacturers are more prone to driving manufacturing innovation to reduce cost because their margins are razor thin compared with the branded products, which provides advisory services in the global supply chain and enabling technology.

A drug maker would not necessarily achieve the same level of success with Just - In - Time (JIT) manufacturing as a carmaker has, and it would be misguided for a drug company to adopt JIT principles just because it works for Toyota, Dell and Harley Davidson's. Financial and manufacturing considerations are different in the pharmaceutical and automotive industries. JIT principles that work for a carmaker might not be appropriate for all drug-production processes.

(Source: Is JIT Manufacturing the Right Prescription, by Erik Greb, pharmaceutical technology, Volume 33, Issue 3, PP. 72-78)

CHANGES THAT MIGHT IMPROVE JIT IN THEORY /PRACTICE

Researchers such as Crawford et al (1988) suggested that an obvious aspect for successful implementation of JIT is the commitment of sufficiently large resources in education and training to overcome the cultural resistance to change. Secondly they stated that the JIT implementation requires that the company focus on total quality control and total preventive maintenance in the early stages of implementation process, both these steps are needed in order to consistently perform to schedule. Other indicated actions to ensure performance to schedule include cross training workers and stabilizing the master production schedule.

Conclusion

Just-in-time manufacturing can be a positive influence on a company. However there are many risks associated with attempting to implement JIT manufacturing techniques. When looked at it appears to be a very simple, quick, and easy thing to do. In reality it is a very complicated technique that takes long term commitment and a initial cost with no guarantee of success. The most important thing for the company is to have good organized resource allocation. Also, the management and employees must have on their mind that this concept can help the organization to solve many problems in logistics. If implemented successfully it would eliminate waste, make the company more productive and more efficient. It does this through shorter transportation and increased communication. Although there are many companies that are successful, many companies are not. Even though there are massive risks many still consider implementing JIT for it many

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advantages. The JIT concept is only one part in the value chain that brings the satisfaction to the customers. It means that the JIT concept cannot must solve existing problems in other organization processes. Everything in enterprises is needed to be healthy, through the hierarchy of employees and all workflow processes. Synergy is the only thing that can improve business results. And in the bottom line, the JIT concept is just one link in the whole chain, but very important.

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