

Utilizing JIT Approach for Waste Reduction

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Abstract

JIT can be simply defined as the production and distribution of finished products in good time for sale, to assemble subassemblies just in time for transition to manufactured parts. JIT is not simply a method or collection of manufacturing techniques, but is an innovative methodology or theory that incorporates both old and new technologies 7 offers a wide range of advantages through the redesign of existing production process. In short, JIT is a system that manufactures the items needed at the time and in the quantities required. This system leads to contradictory low costs, high quality, flexibility in output and reliability in delivery. It is seen as a perfection level achieved by constantly reducing inefficient utilization of resources. Long-term priorities for waste disposal in a production process that is very efficient, cost-effective, oriented onwards quality and sensitive to consumer demands that it becomes a tactical resource for increasing profitability

Keywords: JIT, Waste elimination

INTRODUCTION

JIT system is designed to provide an institution with limited resources to operate efficiently. It also increases performance, decreases stock levels and offers optimum incentive to resolve issues as they arise. It may be defined as an organizational waste elimination system. Waste is something which does not directly add any value to the component/product. In India, very large numbers of technical institutes were set up off-late. Various elements of JIT can be applied in these institutes to make them competitive with these academic institutions. Such elements also boost the reputation of the institute.

JIT PHILOSOPHY

JIT defines waste as anything that is not required to produce the material or for example, are beyond the reserve stock to protect faulty components in production lines, working hours consumed in the fabrication of defective products, working hours spent reprocessing items because of poor performance or requests for technological rework and time spent in setting up machine tools prior to the manufacturing of components. All this waste of material and time increases total cost of the product & reduces its quality. JIT is a campaign for the reduction of all kinds of waste. JIT is also a move to automate the production process for quickly identify challenges and demand quick answers.

JIT AND WASTE

Disposal of waste is the first fundamental principle convoluted in JIT approach. In a JIT model, waste is characterized as something which does not add any value to the product involved with the production process. Therefore, waste includes deficiencies in quality, different kinds of inventories, time consumed in moving material and time consumed in the machines setting up. If the consequences of waste reduction management are examined for the above mentioned categories, it will become clear that JIT is interested in every aspect of the production process management.

Second principle of JIT involves management of people. Philosophy of JIT assumes that people are interested in owning more responsibility and are willing to do so. When defective parts made, the production line may be stopped by an individual. Once halted, the blame for solving the problems rests with everyone working on the board.

SEVEN WASTES

Shigeo Shingo, the Toyota Motor Company's Japanese JIT authority, described seven wastes as the goals for continuous improvement in production processes. These are as follows:

1. Waste of making defective products: Reduce the cycle of function. Follow the output pull process. Enable only those things which can be absorbed directly in the next cycle. That's going to give immediate notice about performance defects.
2. Waste of overproduction: It can be avoided by reducing setting-up times changing the design and increasing system work. Allow only which is required to get rid of production.
3. Waste in processing itself: Put questions about the processes, reason for process existence and finally, why that process is needed.
4. Waste of waiting: It eliminates bottlenecks and balances unequal loads by dynamic workforce and equipment to reduce the waiting time of people, machines and material. Some layout changes can also reduce waiting waste.
5. Waste of motion: In this, analyze movement and consistency for economy leading to improvement in quality. Motions are enhance first, then minimized or automated. Otherwise, there is risk that the unnecessary motions will be automated.
6. Waste in Transportation Activities: Modify designs by using the production line 'U' shape, through conveyors and use generic containers to eliminate transportation activities.
7. Waste of stocks: To minimize stock, start purchasing JIT, produce only when necessary quantity of goods. Obey pull style production and reduce all other waste.

MANAGEMENT COMMITMENT TO JIT

For a longer time, the company must stick to single stock manufacturers and avoid buying the cheaper parts always. All of these acts require the backing of management for a strong guarantee. Management in any organization is a very important force. Their approval of the JIT systems is needed right from the start. With time; the findings of the JIT would show that the business is doing the right thing. While there are no drastic changes, it will be important for everyone, including the managers, to continue. Ultimately, the managers would win by showing that the JIT process works and that the company and its customers will win as well.

JIT can be viewed as a kind of spirituality. It has its leaders, inspiring and guiding, and implementing and following its believers. Like a religion, it takes both groups. A manufacturing organizations shall have to walk on the edge of the catastrophe for a long time after setting up a JIT program. With less, its workers will do more. We will find out errors and issues as soon as we arise, if there is a problem, they will interrupt a production line and not restart it until the problem is solved.

COMMITMENT AT ALL LEVELS

The JIT method needs to be fully adopted by middle management, front-line managers and staff or it won't work. The problem is how an organization makes believers of these people? Probably using training and participation is the only way to achieve this goal. The organization will begin the training program for the people involved in the program immediately. It is also important that they engage in identifying and

executing the priorities of the JIT. This participation is crucial to the system's success. The company should therefore not try to save training time and money. When it achieves full participation in the JIT process, the bonus will show later.

One of the problems facing companies when thinking about introducing a JIT program is that they are afraid to think about more effort and less output. Most industrial organizations run with old-fashioned concepts that disagree with JIT values. For example, second source suppliers were always assumed to be good for backup in manufacturing. It was assumed always that inventory stocks guaranteed flexibility in achieving production schedules and that except in extreme emergent situations, the production line must never be halted. Eventually, for the sake of production output, addressing quality issues was usually delayed, probably believing that time and volume would automatically take care of the issue.

CONCLUSIONS

On the basis of literature survey and survey undertaken in various institutions, it was observed that various elements which are mainly used in the educational institutions are

- Administrative efficiency(ERP)
- Communication & Information sharing (between Employers & Employees)
- Expansion of syllabus contents with adding of modern techniques
- Expert lectures
- Housekeeping (orderliness, cleanliness, discipline, safety)
- Infrastructure (Aesthetic Value)
- Job satisfaction
- Motivation of students for Entrepreneurship
- Motivate faculty and non-teaching staff for higher Education and training
- Modernization of lab facilities in the scenario of global competition
- Preventive maintenance of Lab Equipments
- Research and development(utilization of lab facilities for Consultancy & Student projects)

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