

A STUDY ON APPLICATION OF LEAN TECHNIQUES IN INDIAN I.T. INDUSTRY

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ABSTRACT

The Indian IT industry is one of the fastest growing industries and investments are flowing in to increase its manufacturing capacity. But, India is facing incremental challenges such as rising customer's expectation, widening customer base of existing ones, fluctuating demand, taxation, lack of infrastructure and intense competition. Thus, India needs to be more efficient in her key activities or processes to cope with the challenges. Lean manufacturing could be a solution in order to improve the performance in this competitive globalized market where uncertainty is prevalent. The purpose of this study is to examine the techniques of adopting lean, the tools implemented, the motivators, obstacles and challenges in adopting lean in Indian industries. Lean is not merely a business improvement tool. It is a philosophy which needs to be driven from the top team down if it is to generate required levels of understanding and belief. In this paper, the implication of lean manufacturing used in information technology explored. Does the information technology facilitate the implementation lean techniques like value stream mapping, just in time (Jit) production systems or can it serve as a substitute for lean. Some examples of use of the information technology for these purposes are presented.

KEYWORDS: Lean Manufacturing, Just in Time, Toyota Lean System, Indian Industry, Waste Elimination

INTRODUCTION

Most extensive study of the application of lean principles to knowledge work involves an ambitious initiative at Wipro Technologies. Wipro is one of the largest it services and product engineering company in India. It has more than 10000 employees; also company has 72 delivery centers in 55 countries.

The operations we have been studying to built complex software. It looks nothing like assembly line products. Projects are assigned to team whose members are chosen, on the basis of programming skills needed to address the task just as a team of lawyers working on a major case typically includes members with a wide range of expertise. A Wipro software team consist of highly varied experience people, some of them are quite skilled people and others are generalistic.some of them provides broad oversight and support, others do the actual work by bouncing ideas off one another and trying things out, they come up with solutions.

Several challenges prompted Wipro to embark upon its lean journey in 2004 its need for highly skill employees was increasing just as turnover was rising because of strong industrial demand. The days when the company could complete on the basis of law,labour cost were over nor it could continue to compete on superior quality.in search of sustainable advantage Wipro leaders decided to build a lean system.

Although they recognized that this approach was unproven in work and would require a profound transformation of the company. They have formulated the framework for lean implementation.

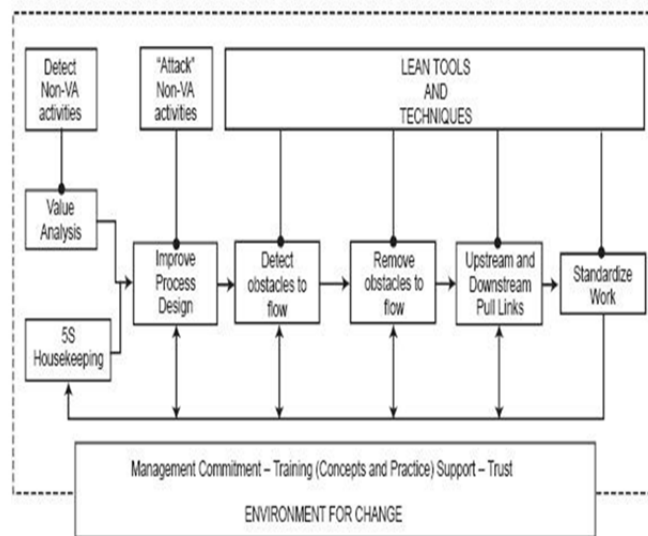


Figure 1: Framework for Lean Implementation

Wipro manager were unable to find companies that had used lean techniques and who produce custom software on large scale. They discovered a strategy which locked relevant experience. the senior manager of Wipro appointed in charge of operations including nine other manager, the group gathered around the conference table and asked a single questions, “how do you do it” their answer –we all educate ourselves we shall come up with our own ideas for adopting lean to a large scale software operations.the manager began studying how the lean approach had been applied in mamufacturing.they poured over all the written material they could find The managers began studying how the lean approach had been applied in manufacturing. They pored over all the written material they could find, toured lean factories, and conferred with a former Toyota guru. Then they brainstormed about how to use what they had learned; each picked an existing project to test their ideas on. Gradually they identified practices that worked.

We’ve been studying this effort from the start. We analyzed the results of 1,883 Wipro projects that involved complex product engineering or the delivery of IT solutions. Of those projects, 772 used a lean approach, and 1,111 did not. We also observed many of them as they were being carried out.

LITERATURE REVIEW

In this review we examine three organizational context characteristics – unionization, plant age and plant capacity –that may influence the implementation of manufacturing practices. A limited number of empirical studies suggest that implementation or adoption of a manufacturing practice is contingent upon specific organizational characteristics (McKeon et al., 1999). For example, White et al. (1999) found significant evidence that large US manufacturers adopted JIT practices more frequently than small manufacturers. In general, the success of implementation of any particular management practice frequently depends upon organizational characteristics, and not all organizations can or should implement the same set of practices.

(Galbraith, 1977) Consideration of organizational contexts has been noticeably lacking in research on implementation of JIT and TQM programs or other lean manufacturing practices. Perhaps because of the getting failure to consider organizational context. The lean transition is, an organizational culture transition to manage lean, specifically during the initial phases, is more about managing the change process than managing lean tools and techniques (Csokasy & Parent, 2007).

(Womack et al., 1990) have carried out the study and suggested, the Lean production is lean because it uses less of everything compared to mass production – Half the human effort in the factory, half the manufacturing space, half the inventory in tools required, Half the Engg. Hours required developing a new product in half the time, also it requires keeping for less than half the inventory needed at site result in many fewer defects, and produces a greater and ever growing variety of products. Lean manufacturing can be best explained as eliminating waste in a production process (Womack & Jones, 1996).

OBJECTIVES

Making an operation lean is a journey of many years, not a big-bang endeavor. Still, we discovered that the lean approach is already having a significant impact. The lean projects we studied performed no better than others on measures of quality (defects and mistakes), perhaps because standards were already high. But they produced superior results in terms of time and cost. On average, the lean projects were completed in 5% less time than had been anticipated; the other projects typically finished at the forecasted time. And the lean projects came in 9% under budget; the others were 2% under budget. (For more details on the results, see “Lean Principles, Learning, and Knowledge Work, during the review of literature, it has been seen that less research work is been carried out on application of lean techniques in Indian industries. Identification of variable relevant to Indian it industries needs to be done and dynamics of these variables needs to be identified.

The gaps recognized in the literature review has given the direction to carry out the work, so the objectives are,

- Identify the variables and rank it according to its usefulness.
- Formulate the relationship among these variables
- Develop a model using lean tools like VSM
- To carry out the analysis.

In this study the methodology used to implement lean manufacturing is method study and value stream mapping. Method study is the systematic recording and critical examination of the existing and the proposed ways of doing a work for developing and applying easier and more effective methods, and for reducing the costs. Method study enables the industrial engineer to subject each operation to systematic analysis. The main purpose of method study is to eliminate the unnecessary operations and to achieve the best method of performing the operation. Material movement time is reduced by applying value stream mapping. Value stream mapping is a lean manufacturing technique used to document, analyze and improve the flow of information or materials required to produce a product or service for a customer.

CONCLUSIONS

As per the discussion, there are many reasons why the Internet can facilitate the movement to lean production systems, and a few firms have made tentative efforts in that direction. Lean thinking has slowly spread from the factory floor (lean production) to activities such as order processing, billing, and product development. Lean concept is not only applicable to factory manufacturing but useful for software industries also. A Wipro industry is set the example in India. Waste minimization and improving efficiency have been identified as key objectives of lean manufacturing system implementation. Literature review and subsequent discussions with experts have helped to sort the factor relevant to lean manufacturing system implementation based upon their importance. Questionnaire based survey has been carried out to rank these identified factor followed by structural modeling.

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