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**Seminar-I**
on
# Lean System and Innovation

## *Synopsis*

In today's competitive world, customer wants perfection and there is no room for error. Presently the world economy is customer driven, which led the producers, manufacturers and service providers compete in the breath-taking race of attracting huge number of consumers to their products and services. These factors present a big challenge to companies to look for new tools to continue moving up the ladder in a global, competitive, growing market. Quality management helps to achieve this goal. Quality management involves continuously monitoring, analyzing, and improving of systems and procedures throughout the process. The present seminar emphasizes on one such quality management techniques called 'Lean system' which is an improvement over the indigenous quality management systems.

**Lean system** was first started by Toyota group of company, later used worldwide in almost all the industries, may be like agri-business and food processing industries or in manufacturing industries. Surprisingly, the lean system is taking its move into agriculture sector which is mostly unorganized in developing countries like India, at its early production, harvesting and post-harvest management stages. The important reasons for this are that lean methodology seeks to eliminate waste, increase the efficiency of resources and in the same way this methodology helps to reduce costs. With this background the present seminar is conceptualized with the following objectives.

1. To know the concept of lean system and innovation.
2. To understand the applications of lean system.
3. To review related case studies/research studies.

**Lean system**

The term lean was coined in 1988 by John Krafcik and defined in 1996 by James Womack and Daniel Jones as "precisely specify value by specific product, identify the value stream for each product, make value flow without interruptions, let customer pull value from the producer, and pursue perfection. Lean System is an organized method for waste minimization without sacrificing productivity. Lean implementation emphasizes the importance of optimizing workflow through strategic operational procedures while minimizing waste and being adaptable. Waste is any step or action in a process that is not required to complete a process successfully (called "Non-Value Adding"). When Waste is removed, only the steps that are required (called "Value-Adding") to deliver a satisfactory product or service to the customer remain in the process. There are seven types of wastes

a) Overproduction is a producing ahead of demand. b) high Inventory: Having more inventory than is minimally required at any point in the process. c)Waiting: waiting includes products waiting on the next production step. d) Motion: - People or requirement moving or walking more than is required to perform the process. e) Transportation: Moving products that is not actually required to perform the process. f) Defects: an imperfection that impairs quality. g) Over Processing: Unnecessary work elements.

**Techniques of Lean system**

- **5 S**: sorting, set in order, shine, standardization, sustain.
- **Total Productive Maintenance (TPM):** It is a system of maintaining and improving the integrity of production and quality systems. TPM helps in keeping all equipment's and services in top working condition to avoid breakdowns and delays in processes
- **Just-in-Time (JIT):** It is a collection of ideas that streamline a production process activity to such an extent that wastage of all kinds viz., of time, material, and labor is systematically driven out of the process
- **Kaizen Costing**: This philosophy implies that small, incremental changes routinely applied and sustained over a long period result in significant improvements. It aimed to reduce cost below standard level. It encourages in collective decision making.
- **Six Sigma (SS):** Highly disciplined process that helps us focus on developing and delivering perfect products and services. The central idea behind Six Sigma is that if you can measure how many "defects" you have in a process, you can systematically figure out how to eliminate them and get as close to "zero defects" as possible
- **Process innovation**: Process Innovation means the implementation of a new or significantly improved production method.
- **Business process re-engineering**: it is the fundamental rethinking and radical redesign of processes to achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality, service, and speed."

**Case studies/research study**

The dabbawallas are an extraordinary association of more than 5,000 individuals in Mumbai. People who work in banks, colleges, hospitals, government offices, factories and ports are all spread across different parts of the Mumbai city. The dabbawallas deliver lunch boxes for about 2 lakh people at their workplaces on time. They also carry the empty lunch boxes from the customers, they made only one mistake in six million transactions and have been consistently good at it for all the time of their operations. Since they made 1 error in six million transactions and they stood high along with MNCs like Motorola, GE etc. (Shubham Vasishta, 2018)

Andersson *et al.* (2020) conducted a study on "Lean-inspired development work in agriculture: Implications for the work environment". The results showed positive effects of lean on the psychosocial work environment, better work structure, improved information, communication, and co-operation. The physical work environment was also improved by lean, where advantages such as a more structured and practical work environment with less physical movements and locomotion could be noticed. The lean concept provided a more structured and systematic approach to dealing with work and production environmental issues, for managers as well as for employees.

**Conclusion**

Lean system can be a powerful and strategic methodology to consistently measure results, which can become a new baseline for improved performance, ultimately getting you closer and closer to operational excellence.

**References:**

ANDERSSON, J., EKLUND, S. AND RYDBERG, A., 2020, Lean-inspired development work in agriculture: Implications for the work environment. *Estonian J. Agron. Res.*, **18**(2): 324–345.

VASHISHT, S., 2018, Six-Sigma: A case study on Mumbai Dabbawalla. *M.Sc. Thesis (Unpub.)*, Guru Gobind Singh Indraprastha University, Delhi.