LEAN PRINCIPLES

Introduction to Lean Principles - Kaizen

Lean Principles, Lean manufacturing, lean enterprise, or lean production, often simply, 'Lean,' is a production and service practice that considers the expenditure of resources for any goal other than the creation of value for the end customer to be wasteful, and thus a target for elimination. Working from the perspective of the customer who consumes a product or service, 'value' is defined as any action or process that a customer would be willing to pay for.

Essentially, lean is centred on preserving value with less work. Lean manufacturing is a management philosophy derived mostly from the Toyota Production System (TPS) (hence the term Toyotism is also prevalent) and identified as 'Lean' only in the 1990s. TPS is renowned for its focus on reduction of the original Toyota seven wastes to improve overall customer value, but there are varying perspectives on how this is best achieved.

The steady growth of Toyota, from a small company to the world's largest automaker, has focused attention on how it has achieved this. Lean manufacturing is a variation on the theme of efficiency based on optimising flow; it is a present-day instance of the recurring theme in human history toward increasing efficiency, decreasing waste and using empirical methods to decide what matters, rather than uncritically accepting pre-existing ideas. As such, it is a chapter in the larger narrative that also includes such ideas as the folk wisdom of thrift, time and motion study, Taylorism, the Efficiency Movement, and Fordism. Lean manufacturing is often seen as a more refined version of earlier efficiency efforts, building upon the work of earlier leaders such as Taylor or Ford and learning from their mistakes. Lean principles come from the Japanese manufacturing industry. The term was first coined by John Krafcik in a 1988 article, "Triumph of the Lean Production System," Sloan Krafcik had been a quality engineer in the Toyota-GM NUMMI joint venture in California before coming to MIT for MBA studies. Krafcik's research was continued by the International Motor Vehicle Program (IMVP) at MIT, which produced the international best-seller book co-authored by Jim Womack, Daniel Jones, and Daniel Roos called The Machine That Changed the World. For many, Lean is the set of "tools" that assist in the identification and steady elimination of waste (muda).

As waste is eliminated quality improves while production time and cost are reduced. Examples of such 'tools' are Value Stream Mapping, Five S, Kanban (pull systems), and poka-yoke (error-proofing).There is a second approach to Lean Manufacturing, which is promoted by Toyota, in which the focus is upon improving the "flow" or smoothness of work, thereby steadily eliminating mura ('unevenness') through the system and not upon 'waste reduction' per se. Techniques to improve flow include production leveling, 'pull' production (by means of kanban) and the Heijunka box.

This is a fundamentally different approach from most improvement methodologies, which may partially account for its lack of popularity .The difference between these two approaches is not the goal itself, but rather the prime approach to achieving it. The implementation of smooth flow exposes quality problems that already existed and thus waste reduction naturally happens as a consequence. The advantage claimed for this approach is that it naturally takes a system-wide perspective, whereas a waste focus

sometimes wrongly assumes this perspective. Toyota's view is that the main method of Lean is not the tools, but the reduction of three types of waste: muda ('non-value-adding work'), muri ('overburden'), and mura ('unevenness'), to expose problems systematically and to use the tools where the ideal cannot be achieved. From this perspective, the tools are workarounds adapted to different situations, which explains any apparent incoherence of the principles above.

Who should attend?

Production Managers, Engineers, Operations team members, Site Lean Champions, Team leaders, supervisors.

Course duration: Workshop 4 to 5Hours