

Lean Six Sigma

Lean Six Sigma represents the synergy of two proven methodologies for optimising a process viz. Lean Manufacturing and Six Sigma i.e. it combines the benefits of Lean manufacturing and Six Sigma methodology to create a much advanced system that can provide both speed and quality.

Lean methodology accelerates the process and reduces its cost by the removal of waste and thus adds speed to the process. On the other hand, Six Sigma optimises the quality of a process by removing defects, which it achieves by reducing variations.

A significant difference between the two is that while Lean is applicable primarily to manufacturing processes, Six Sigma can be applied to all business processes.

Five laws of Lean Six Sigma: To understand Lean Six Sigma, it is essential to understand its five laws that have been formulated over the time, to provide direction.

- **Zeroth Law:** The law of the Market – It suggests that for a business adapting to market is the most crucial thing as otherwise it is simply impossible to develop an efficient or optimised process. In simpler words, customers are the highest priority. This law gets its name owing to its fundamental nature. It is the foundation on which the other laws are laid on.
- **First Law:** The law of Flexibility – More flexible the system, easier it is to remove imperfections
- **Second Law:** The law of Focus – This suggests, focussing on those 20% of the activities that causes 80% of the delay, also referred as bottlenecks.
- **Third Law:** The law of Velocity – This can be represented well by a mathematical result called Little's law which states;

Lead time of process

Lead time can be explained as the time taken between the entry and exit of work into a process.

- **Fourth Law:** The law of Complexity and Cost – The more complex is the system, harder it is to deal with the maintenance. If there is more number of components in a process, there are higher chances of breaking down which further slow down the process.

To understand Lean methodology better, it is essential to understand the third law or the law of velocity. Lead time can be defined as the time taken between the entry and exit of work into a process. In other words, the velocity is inversely proportional to the number of work units. It is therefore apparent that by removing the waste, the numerator value goes down, thereby reducing lead time or in other words, making the process fast and cost effective. Although, the result seems intuitively reasonable and

trivial, its application produces remarkable results.

Even though, both Lean and Six Sigma aim to improve a process, they are mutually exclusive in terms of their applications. As mentioned above, the fusion of the two leads to quality improvement as well as reduction of time and cost which are both essential for maximising the potential of any process. Such productivity cannot be achieved by either Lean or Six Sigma alone.

This article is contributed by Ashutosh Sharma.