

Lean Six Sigma

Quick Reference Sheet



What is Six Sigma?

Six Sigma has become increasingly popular in many industries and organizations around the world. Since it was first developed by Motorola in the 1980s, Six Sigma has become widely adopted by many of the world's leading corporations and Fortune 500 companies, including Ford, Amazon, and General Electric. Six Sigma uses statistical analysis and other tools to reduce defects and variability in a process to achieve a level of quality that will meet or exceed customer expectations. As more organizations recognize the benefits of adopting a data-driven approach to process improvement, its popularity is likely to continue to grow. Sigma refers to a statistical term representing the standard deviation of a process. The higher the sigma level, the less variation there is in the process. The goal of Six Sigma is to achieve a level of process performance in which the defect rate is less than 3.4 defects per million opportunities (DPMO). This is equivalent to a process capability of 6 sigma or higher.



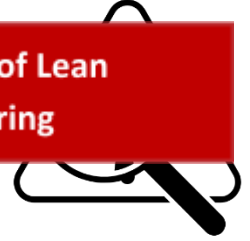
What is Lean?

Lean has revolutionized the way businesses operate. In essence, lean is about doing more with less, or rather maximizing value while minimizing resources. It is a methodology that was established based on the Toyota Production System, which was developed to improve efficiency and eliminate waste in their manufacturing processes. The goal of lean is to identify, as well as eradicate waste in business processes, such as unnecessary motion, waiting, and overproduction.



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The Principles of Lean Manufacturing



Lean Manufacturing empowers organizations to achieve peak efficiency through five core principles: Value, Value Stream, Flow, Pull, and Perfection. James P. Womack and Daniel T. Jones, well-known figures in the field of Lean Manufacturing, are known for popularizing Lean Manufacturing and defining these five principles in their book, "The Machine That Changed the World". These principles provide a framework for organizations to maximize efficiency, while also creating the most amount of value for their customers. Whether it is for a specific product, or an entire assembly line, Lean concepts can help manufacturers to strive for continuous improvement. Ultimately, applying these Lean principles

- Value



their operations,
sustainable

- Value Stream



- Flow



- Pull



- Perfection



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Value Stream Mapping

Value Stream Mapping (VSM), also known as Lean Process Mapping or Value Stream Analysis, is a very valuable tool used in Lean Six Sigma. This tool is used to visualize and analyze the flow of materials and information required to produce a product or service. Value stream mapping starts with creating a detailed map or diagram of the entire value system, from the customer's order to the delivery of the product or service. This map should include all of the activities, resources, and information that are required to complete the process, including transportation, inventory, suppliers, and lead times. Once this map has been created, the team can analyze the current map and identify ways to improve the process. With the areas for improvement identified, the team will then conduct a future state map that includes all of the changes and improvements that are planned. The future state map is intended to show the ideal state of the value stream after improvements would be implemented. This can include changes with the elimination of waste, reduction of lead times, and increased efficiency. This map is an essential part of the value stream process, as it helps to identify the steps required to actually make these changes happen.

Business Advantages

Lean six sigma has been widely adopted by businesses around the world, due to its proven ability to reduce costs, drive process improvements, and foster a culture of continuous improvement. This methodology not only brings value to businesses through improving efficiency and quality, but also to customers by aligning process improvements with their requirements, resulting in an increase in overall customer satisfaction and loyalty. This holds significant importance for creating a positive brand reputation, as well as a competitive edge in the market. Additionally, Lean Six Sigma will also provide value to employees, by involving them at all levels of the organization in process improvement efforts, leading to increased engagement and empowerment. Implementing this methodology can bring about numerous benefits to any business looking to reach operational excellence.

These business advantages include:

- Error Reduction
- Increased Revenue
- Reduced Costs
- Customer Loyalty
- Employee and Team Development