



# Introduction to Lean Manufacturing

**B,43 , May flower Shakti Gardens, Nanjunda puram road, Ramanathapuram  
Coimbatore – 641036; email : [sreeniraok@gmail.com](mailto:sreeniraok@gmail.com); Cell : +91 96009 66556**

# Definition of Lean Manufacturing

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**Lean Manufacturing is a System of manufacturing which works towards maximizing the Customer Value by minimizing the Waste in Manufacturing.**

# Basic Steps of Lean

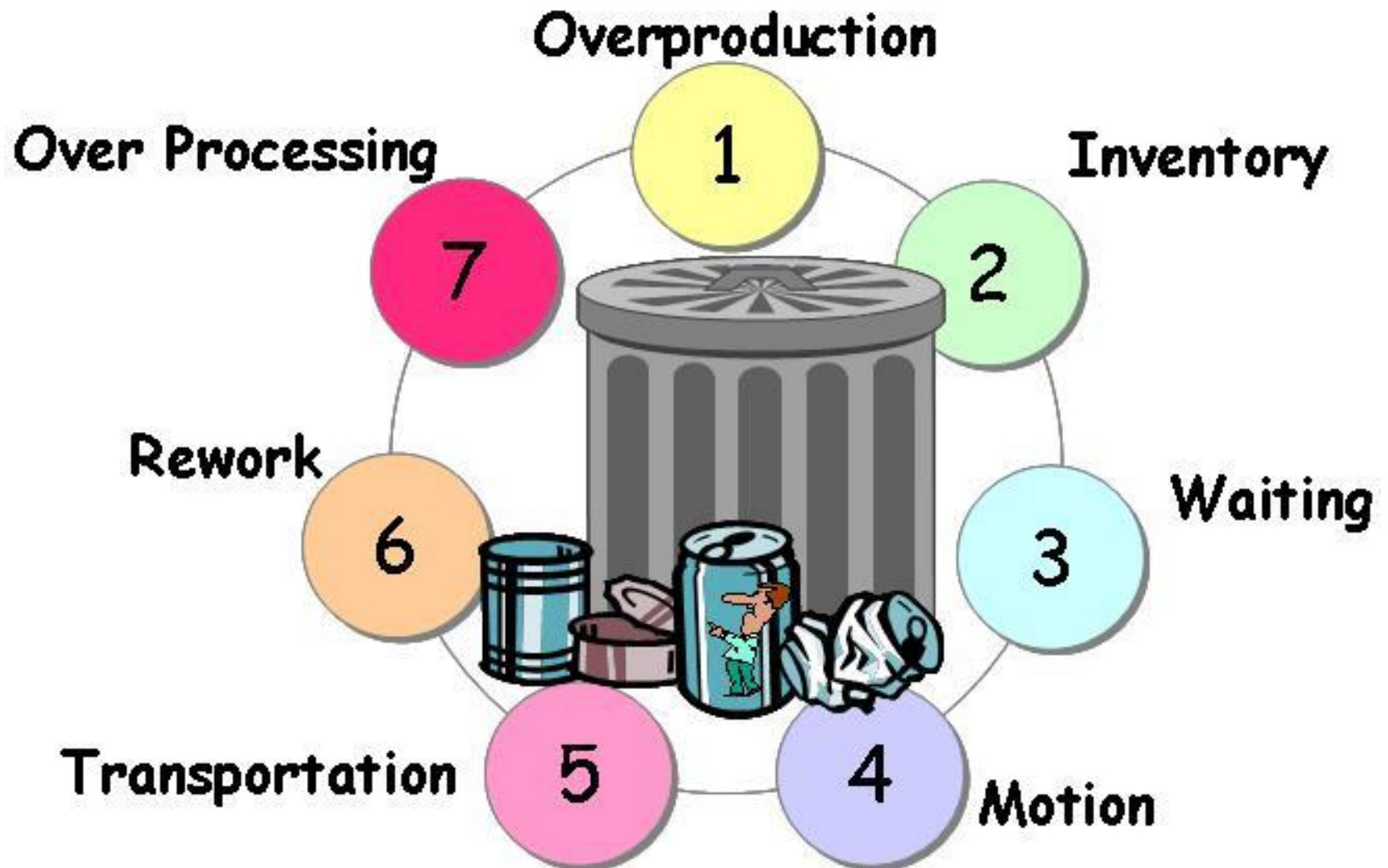
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- Identify Value
- Map the Value Stream
- Create Flow
- Establish Pull
- Seek Perfection



# The 7 Wastes



# History of Lean Practices



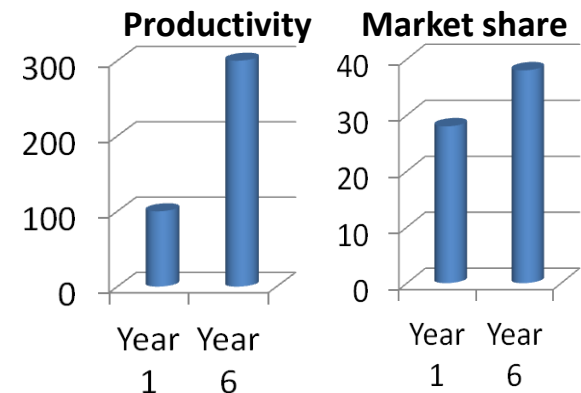
- Henry Ford was the first to implement the Lean in 1913 in his factory in Michigan.
- This was a flow line for Model T car.
- Handling Variety was a problem in this line. It was good for single product.
- Kiichiro Toyoda and Taiichi Ohno addressed this in the 1930s and after the WW II.
- By making some improvements, they adapted the Ford system to handle variety.
- They introduced concepts like :
  - JIT
  - SMED
  - Kanban etc



# Lean Manufacturing Projects where Srinivas Rao was involved..



- Rane, Hyderabad Plant :
  - Lean Modules were implemented.
  - Productivity more than doubled.
  - Lean was reintroduced after a gap of about 12 years. The Productivity was improved again by about 75% - 100%.
- Rane, Chennai Plant :
  - Lean was introduced and Productivity was improved by about 75% - 100%.
- Elgi Equipments limited, Coimbatore :
  - Lean Manufacturing was introduced in 2005.
  - The Productivity was improved more than 300%.
  - One more level of improvement is underway now.



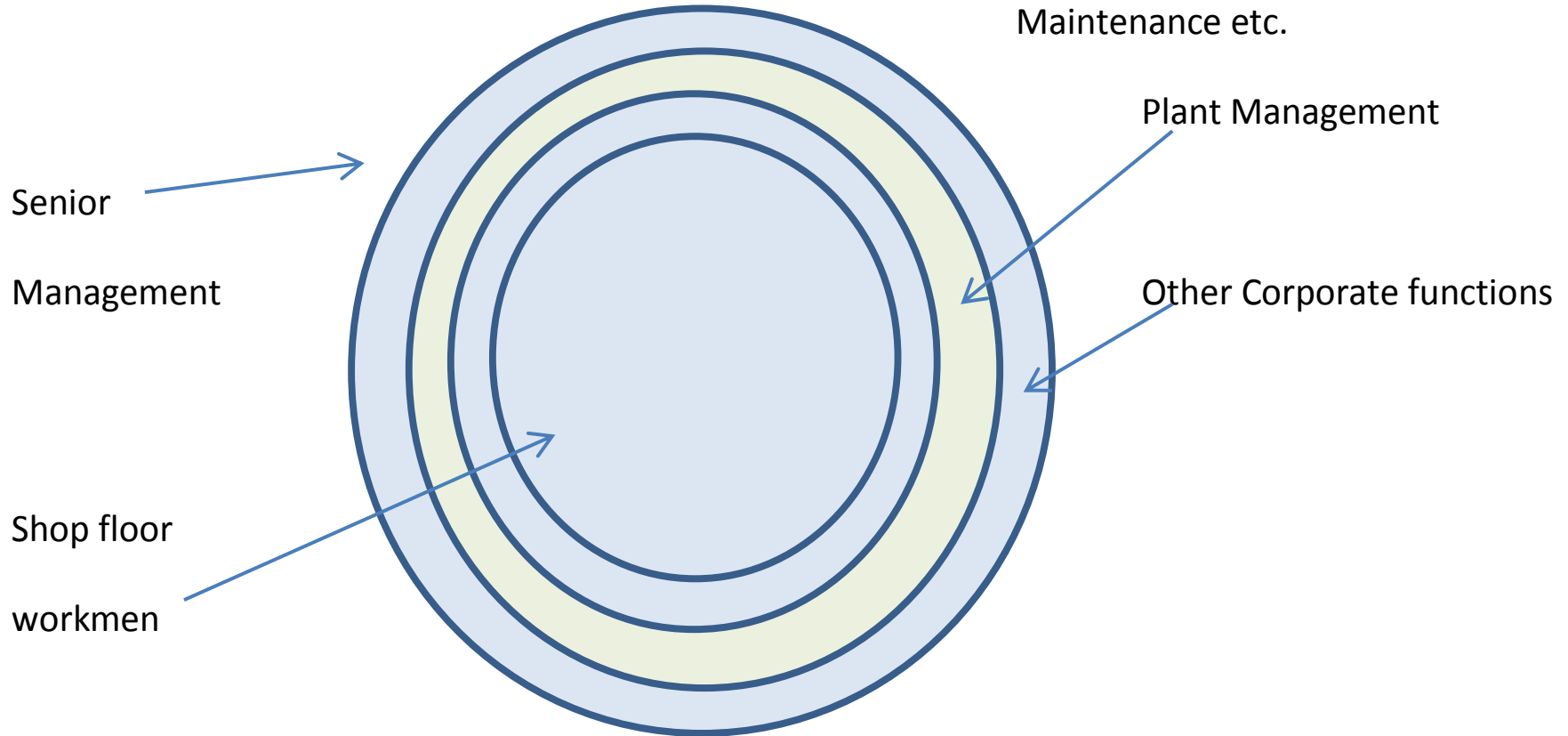
# Application of Lean Principles ..



Lean Principles can be implemented across the Company in all functions

Support functions like QA,

Maintenance etc.



Normally, many companies stop with implementing Lean Principles in Shop floor only. But, there is much to be gained by implementing Lean Principles across the Company. Productivity can be doubled in all areas by implementing Lean Principles.

**Thank you**