



Introduction to Lean Manufacturing

Presented By-

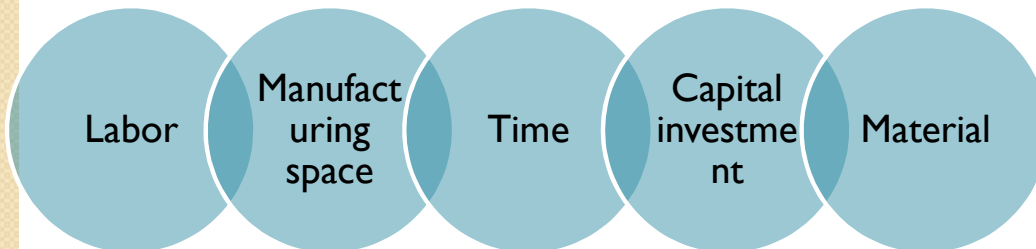
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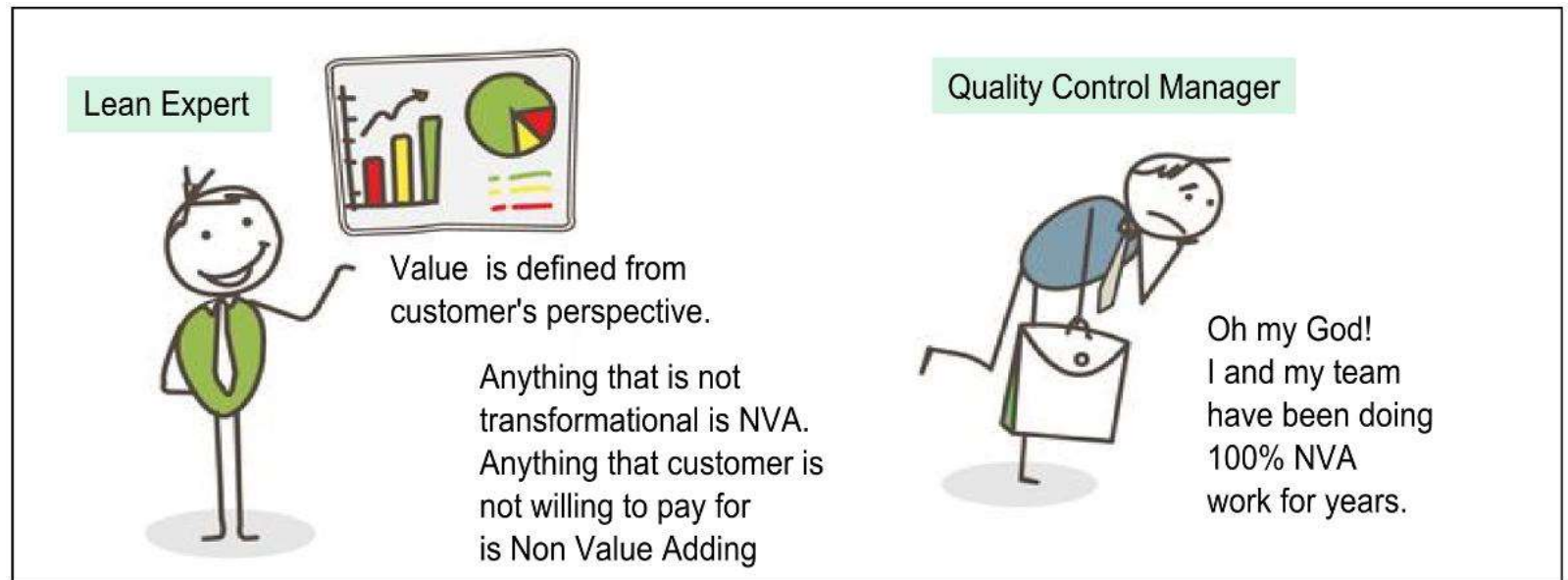


What is Lean?

The term “**Lean**” is used because Lean Manufacturing uses “**Less**”



Basics of LEAN Manufacturing



It means



Eliminate work processes that add no value to product

Simplify those processes that add value

Think Lean i.e to "do more with less"



Lean Elimination of waste Active involvement Non-stop improvement

Non-value added- activity that takes time, resources or space, but does not add to the value of the product or service itself

Adds to the Cost without any value addition

Lean

*A systematic approach to identify and eliminate waste (**non-value-added activities**) through continuous improvement by flowing the product at the pull of the customer in pursuit of perfection"*

Non-Value added

Value added

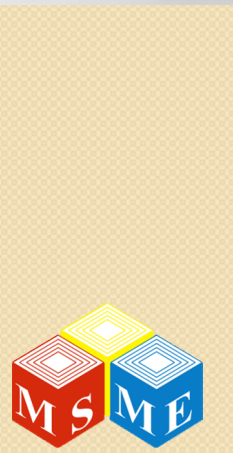
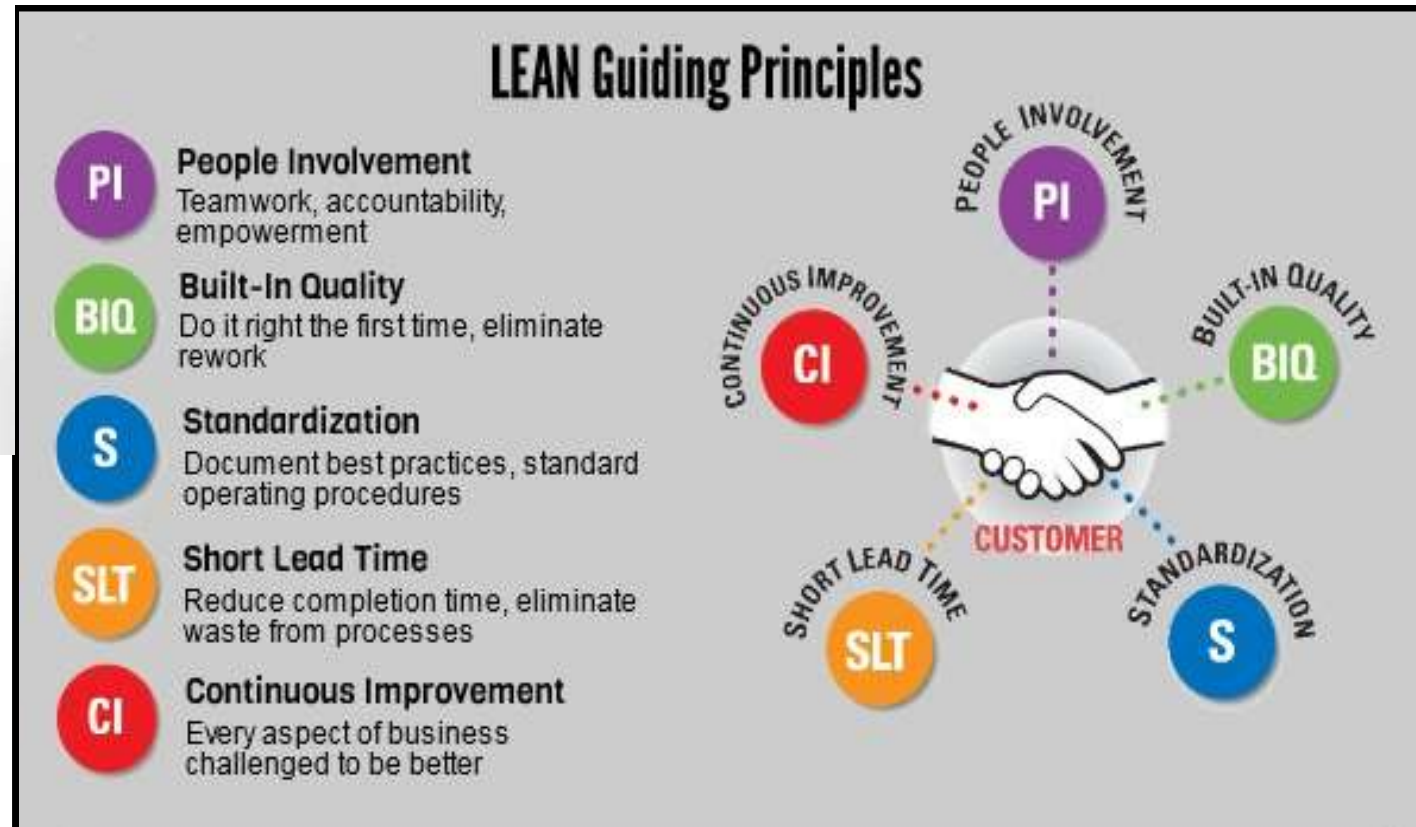
Value-added - activity that transforms or shapes raw material or information to meet customer requirements

What is Waste





LEAN Guiding Principles



How to be Lean ??

After LEAN



Before LEAN



Before Lean

After Lean

Excessive inventory

Forecast driven

NVA activities

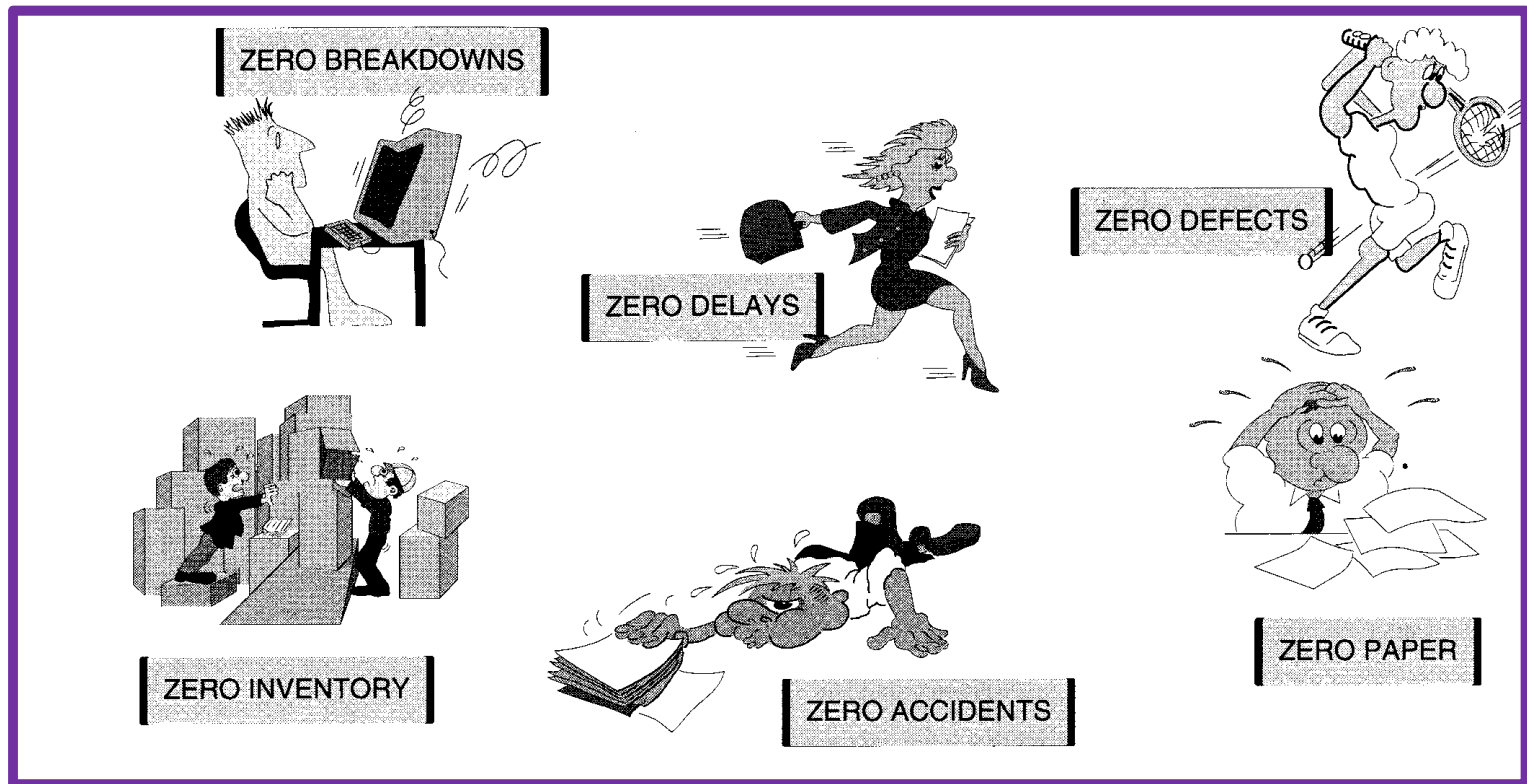
Inventory as needed

Demand driven

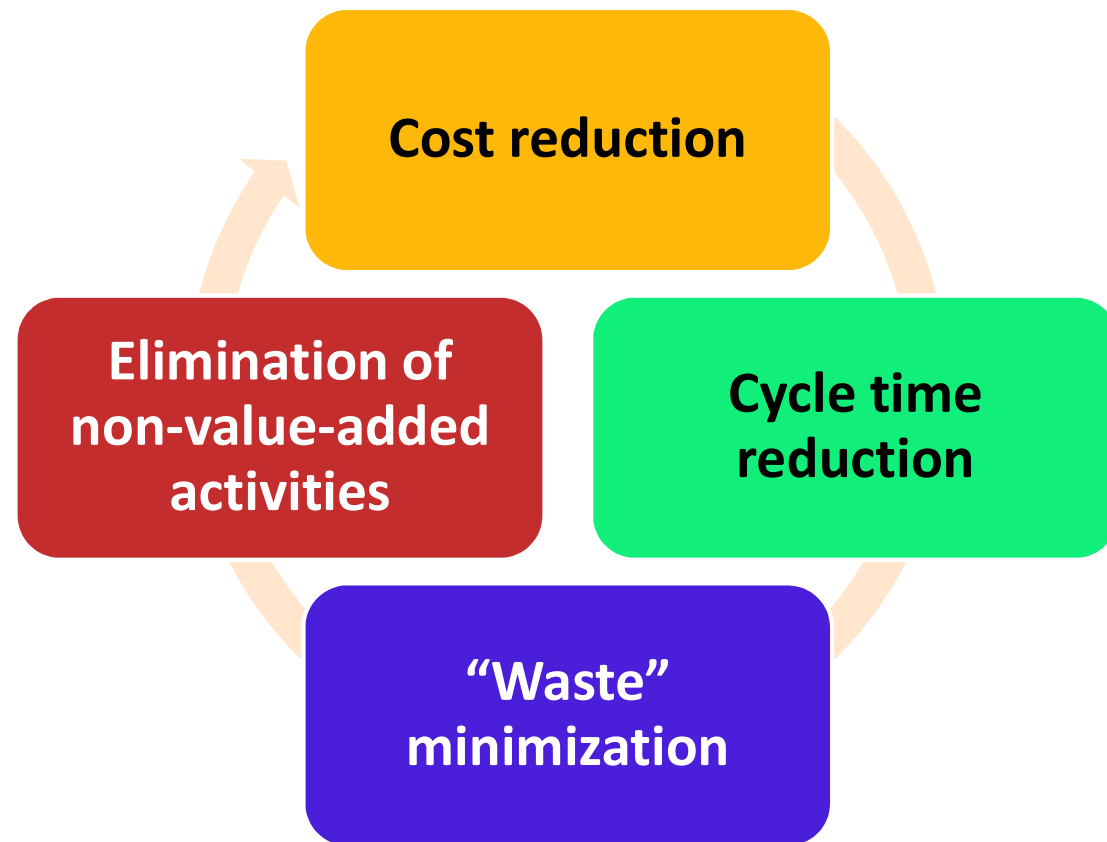
Value added activities

Become sustainable(people,
profitability & planet)

Goals of Lean Manufacturing



Benefits of Lean Manufacturing



Lean Manufacturing Tools

5 S	Visual Control	Standard Operating Procedures (SOPs)	Just in Time (JIT)	Kanban System	Cellular Layout	Value Stream Mapping	Poka Yoke/ Mistake Proofing	Single Minute Exchange of Dies/ Quick Changeover
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Case Study

- ❖ In kaizen approach- Reduction of material loss was the 1st target
- ❖ Before applying lean tool the size base plate was (9X8.5inc) & weight was 1.060g
- ❖ But after applying lean tool (with change in design of base plate) the size was reduced to (8.5X6.5inc) and weight to 820mg
- ❖ The target was to reduce weight & root cause was to change the design
- ❖ Net savings = Rs.11.5per plate {As weight reduced from 1.060g to 820mg}

Before



After



- **The Moonlight Engineering Industries, at Rajpur, 24 Pargana(S), West Bengal** coming under small manufacturing enterprise producing oil dispensing pump and supplying it to different parts of the country.
- To compete with the oil company giants, they started application of lean tools in their manufacturing unit to reduce the wastage and improve the productivity within the existing facilities



- ❖ The 2nd kaizen target- To reduce the cost of dial frame material
- ❖ The existing dial frame was made up of Al & cost was Rs.105/set
- ❖ The new dial frame is replaced with rubber bedding and cost reduced to Rs.35/set
- ❖ Therefore after applying lean concepts the net cost savings became= Rs.70/set



Before

Key Projects

Promoting Innovative Clusters in India,

funded by Department of Science & Technology (DST)

- ❖ The 3rd kaizen target- To de-skill the job by changing some process
- ❖ The kaizen idea was to develop a process for cutting
- ❖ Earlier they were making bacalite sheet by using template and then cutting by knife, breaking by hand and then all edges have been finished by rubbing with emery paper
- ❖ But now they developed an attachment of an inter bacalite sheet in required measurement in it and then cutting the sheet by cutter which takes 1 minute
- ❖ Earlier with 5min the cost was Rs.2/ and now when it takes 1min the cost reduced to Rs.0.4/paise



Before

Scaling Up Sustainable Development of MSME Clusters in India,
co-funded by EU



FMC- A Lean Manufacturing Consultant

Foundation for MSME Clusters is empanelled Lean Manufacturing Consultant with Quality Council of India (QCI) and National Productivity Council of India (NPC)

Empanelled lean consultant with FMC

More application for empanelment of consultant is under process



Role of Association in Implementing LMCS

Convince MSME members for taking up the lean manufacturing under Lean Manufacturing Competitiveness Scheme

Handhold Mini Cluster in selection of competent consultant through competitive selection process as per scheme

Ensure cooperation of cluster members during the implementation stage with LMC

Convince cluster members for investment and implementation of projects suggested by LMC

Participate in monitoring the overall implementation of projects at each stage

Participate in the post implementation verification and audit with other associated agencies (NMUI, SSC etc.)

Convince the newly formed cluster for depositing upfront payment (20%) as per the scheme



Foundation for MSME Clusters (FMC)

- ❖ Development of MSMEs through cluster development approach
- ❖ 4 functional cells: Energy & Environment, Infrastructure, Policy & Research, Training & Capacity Building
- ❖ Provided broad range services to MSME's, BMO's, Technical agencies, Financial institutions and Government
- ❖ Advocacy, implementation & coordination, training and research
- ❖ More than 190 clusters nationally & globally across 10 countries
- ❖ 10 publications and 3 methodology documents
- ❖ 1st Cluster observatory of India (www.clusterobservatory.in)



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