

Lean Manufacturing Implementation Methodology

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Overview of Lean Elements

Lean ideas are generally developed from Japanese businesses particularly from Toyota. Lean Manufacturing is viewed as a waste decrease method as recommended by many creators, yet practically speaking lean assembling boost the worth of the item through minimization of waste. Lean standards characterizes the worth of the item/administration as seen by the client and afterward making the stream in-accordance with the client get and taking a stab at flawlessness through ceaseless improvement to wipe out squander by figuring out Value Added activity(VA) and Non-Value Added activity(NVA). The hotspots for the NVA movement squanders are Transportation, Inventory, Motion Waiting, Overproduction, over handling and Defects. The NVA movement squander is crucial obstacle for VA action. Disposal of these squanders is accomplished through the effective execution of lean components. Different Survey show that a large portion of the specialist center around a couple of components for discovering the presence of squanders and recommend their perspectives on executing these components.

The significant components considered by the prior specialists for the execution of the lean assembling framework are Value stream Mapping (VSM)which characterizes esteem stream as "Every single action including Value-Added action (VA) and Non-Value-Added action (NVA) needed to change over the natural substance into completed item through the planning of interaction and data streams fundamental for each item", Push and Pull System which portrays, the Pull framework depend on client prerequisite while push framework depend on foreordained timetable. Cell Manufacturing characterizes the office gathering to create the item with least interaction time, holding up time, and transportation by smoothen the cycle stream. Further fluctuating line stream is improved by U-line idea and line adjusting concept, Kanban is Material Flow Control component (MFC) which conveys the right amount of parts at right time [3]. Phases of this Kanban execution are creation stage and withdrawal stage. One piece flow ensure in the nick of time creation framework to embrace clear timetable without interference, discharge or scrap, loosening up the Takt time and diminishing the danger of machine disappointments and administrator botches. Single Minute Exchange of Dies (SMED)/One-Touch trade of Die (OTED) is orderly decrease of changeover time by changing over conceivable inside setting time (Carry out during machine stoppage) to outer time (performed while the gear is running) and to rearrange and smooth out the leftover action. Creation Leveling enhances production volume just as creation blend and creation proficiency through lessening waste, lopsidedness, and overburden of individuals or hardware. Evening out of parts prompts effective execution of Every Part Every Interval (EPEI) concept, Employee insights incorporate Belief, responsibility, work technique and correspondence, for lean progress the inspiration for social change is expected to further develop worker discernment. The other supporting components, for example, TPM, TQM are

not considered in this survey article.

The idea of lean assembling was produced for expanding the asset use through minimization of waste, later on lean was planned because of the fluctuating and serious business climate. Because of quickly changing business climate the associations are compelled to confront difficulties and intricacies. Any association whether assembling or administration situated to endure may at last rely upon its capacity to deliberately and ceaselessly react to these progressions for improving the item esteem. Consequently esteem adding measure is important to accomplish this flawlessness; subsequently executing a lean assembling framework is turning into a center skill for associations to support. Most of the review centers around single part of lean component, truth be told, not many spotlights on more than one part of lean components, however for the effective execution of lean the association needed to centers around every one of the viewpoints, for example, Value Stream Mapping (VSM), Cellular Manufacturing (CM), U-line framework, Line Balancing, Inventory control, Single Minute Exchange of Dies (SMED), Pull System, Kanban, Production Leveling and so on, In this paper, an endeavor has been made to foster a lean course map for the association to carry out the lean assembling framework. Examinations of the exploratory study results are summed up in this paper to represent the execution succession of lean components in unpredictable business climate and the finding of this audit was integrated to foster a bound together hypothesis for execution of lean components.

The ideal endeavor of the assembling framework can be accomplished through effective execution of lean components. Larger part of the overview on lean components centers on just a couple of component or blend of a few components. For effective execution of lean, basically need consolidation of every lean component and sequencing of execution task. This writing survey clarifies the consolidation and sequencing of lean components during execution period alongside execution issues.

- Scheduling
- Employee perceptions
- Value stream mapping (VSM)
- Takt time
- Bottleneck process
- Group Technology
- Cellular manufacturing (CM)
- U-line manufacturing system
- Line balancing
- Flow Manufacturing
- Quick Changeover/Single Minute Exchange of Die
- Small Lot size/Small Batch
- Pull System with One-Piece Flow
- Kanban
- Production Leveling/ Heijunka
- Quality at source
- Standardized Work

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Menden in 1983 introduced Standardized Work Chart (SWC), Standardized Work Combination Table (SWCT) and Standard Operation Sheet (SOS) are useful for analyzing and improving the standardized work. The purpose of SWCT is to identify the waste such as WIP, waiting and overburden of work. Finally, the work instruction of the operation is described by SOS.

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