

5S Japanese Approach

Shaik Asif Basha

Abstract: Due to the insufficient production systems and their setups the small and medium scale organizations (SMES) are facing problems of product accuracy and quality in par with the customer satisfaction and competitor's impact also, which leads poor market values in their product. In another way, Due to increased customer demands, high product variety, and a push production system, the organizations have been suffering from excessive wastes, poor work stations set up, and its environment. In such cases continuous improvement process using advanced manufacturing technologies are most useful. 5S techniques would strongly support the main objectives of SMEs organization to achieve continuous improvement and higher performance.

Keywords: Quality, 5s, production, organisation, improvement

1. Introduction

In current situations, the organizations are based on the certain standards which pursuit to the continuous improvement on the basis of Total Quality Management. Here maximum equipment efficiency can obtain in an organizations, where an integrity of effective and autonomous maintenance is considered through the small group activities. TPM is a protective maintenance system requiring the participation of all departments in order to obtain maximum equipment efficiency in an organization, which involves all human resources, but further improvement in this regard on operating level in work atmosphere will becomes more popular called as 5S first developed by Hiroyuki Hirano. Initially this technique was originated from Japan. The 5S is the methodology of creation and maintaining well organized, clean, high effective and high quality workplace. Its result is the effective organization of the workplace, reduction of work's environment, elimination of wastes in manufacturing process, which leads to the quality and safety of work. The concept centres around good housekeeping that will result in reduction of waste, better cleanliness and creation of a culture to sustain long time.

The philosophy of the 5S has its roots in Japan, which is an effective tool in lean manufacturing for the programme of improvement in the quality and accuracy in products. 5S is required where the organization can organize and manage companies which require less space, human effort, time, quality and capital to make products with less faults and make a workplace well ordered, disciplined and clean. actually in first stage the requirement to the work place is decided, next stage providing best support to the functions and finally identification of root cause and best solution is provided. The total study of the 5s aims to analysis of previous drawbacks in the process of work stations and improve its efficiency of an organization. 5S is a Japanese Management Philosophy for safe Working Environment suited for especially shared work place like shop floor, office space, originated from Japanese house-keeping idea. The 5s consists of Seiri (sort), Seiton (set in order), Seiso (shine), Seiketsu (standardize), Shitsuke (sustain) which are used for reducing ineffective time or waste in process.

5S application will improves personal standards and motivation to operators in their workplace and definitely which is an high impact on work area, work safety, quality, efficiency through the continuous observation with team

work soul regarding the importance of 5S implementation in today's organizations.

Elements of 5s

5S is a Lean Tool which is implemented for obtaining a clean, effective and pleasant work environment w hich is the first step of approaching the Lean Manufacturing. 5S is a strategy that delivers results by a systematic approach of planning and organizing the activities. 5S is a system to decrease wasting and optimize quality and productivity via monitoring an organized environment and use visual evidences to obtain more firm results. In routine activity of every organization, daily works that support company and neatness are fundamental to efficient activities flow. 5S is a philosophy rooted from Japan and branched into other countries. 5S is an acronym for the following Japanese terms:

There are five 5S phases. They can be translated from the Japanese as "sort", "set in order", "shine", "standardize", and "sustain".

Sort (Seiri)

Seiri is sorting through all items in a location and removing all unnecessary items from the location.

Goals:

- 1) Reduce time loss looking for an item by reducing the number of items.
- 2) Reduce the chance of distraction by unnecessary items.
- 3) Simplify inspection.
- 4) Increase the amount of available, useful space.
- 5) Increase safety by eliminating obstacles.

Implementation:

- 1) Check all items in a location and evaluate whether or not their presence at the location is useful or necessary.
- 2) Remove unnecessary items as soon as possible. Place those that cannot be removed immediately in a 'red tag area' so that they are easy to remove later on.
- 3) Keep the working floor clear of materials except for those that are in use to production.

Set in Order (Seiton)

Seiton is putting all necessary items in the optimal place for fulfilling their function in the workplace.

Goal:

Make the work process smooth and simple.

Implementation:

- 1) Arrange work stations in such a way that all tooling / equipment is in close proximity, in an easy to reach spot and in a logical order adapted to the work performed. Place components according to their uses, with the frequently used components being nearest to the workplace.
- 2) Arrange all necessary items so that they can be easily selected for use. Make it easy to find and pick up necessary items.
- 3) Assign fixed locations for items. Use clear labels, marks or hints so that items are easy to return to the correct location and so that it is easy to spot missing items.

Shine (Seiso)

Seiso is sweeping or cleaning and inspecting the workplace, tools and machinery on a regular basis.

Goals

- 1) Improves the production process efficiency and safety, reduces waste, prevents errors and defects.
- 2) Keep the workplace safe and easy to work in.
- 3) Keep the workplace clean and pleasing to work in.
- 4) When in place, anyone not familiar to the environment must be able to detect any problems within 50 feet in 5 sec.

Implementation

- 1) Clean the workplace and equipment on a daily basis, or at another appropriate (high frequency) cleaning interval.
- 2) Inspect the workplace and equipment while cleaning.

Standardize (Seiketsu)

Seiketsu is to standardize the processes used to sort, order and clean the workplace.

Goal

Establish procedures and schedules to ensure the repetition of the first three 'S' practices.

Implementation

- 1) Develop a work structure that will support the new practices and make it part of the daily routine.
- 2) Ensure everyone knows their responsibilities of performing the sorting, organizing and cleaning.
- 3) Use photos and visual controls to help keep everything as it should be.
- 4) Review the status of 5S implementation regularly using audit checklists.

Sustain/Self-discipline (Shitsuke)

Shitsuke or sustain the developed processes by self-discipline of the workers. Also translates as "do without being told".

Goal:

Ensure that the 5S approach is followed.

Implementation:

- 1) Organize training sessions.
- 2) Perform regular audits to ensure that all defined standards are being implemented and followed.

- 3) Implement improvements whenever possible. Worker inputs can be very valuable for identifying improvements.
- 4) When issues arise, identify their cause and implement the changes necessary to avoid recurrence.

The Key Benefits of 5s:

- 1) Less Waste (Improved Efficiency)
- 2) Reduced Space Used For Storage
- 3) Improved Maintenance
- 4) Improved Safety
- 5) Better, More Committed Employees
- 6) Improved Quality

Application of 5s:

5S methodology has expanded from manufacturing and is now being applied to a wide variety of industries including health care, education, and government. Visual management and 5S can be particularly beneficial in health care because a frantic search for supplies to treat an in-trouble patient (a chronic problem in health care) can have dire consequences. Although the origins of the 5S methodology are in manufacturing, it can also be applied to knowledge economy work, with information, software, or media in the place of physical product.

2. Conclusion

The 5S practice is a well-recognized methodology used by the Japanese for improving the work environment. It was found to be key to quality and productivity. The 5S practice helps everyone in the organisation to live a better life.