



## Implementation of 5S: A Study

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**ABSTRACT:** Now a day's companies are facing tough competition worldwide. To survive in this cutthroat competition companies are looking the ways to improve the overall productivity. These can be done by the number of improvement technique and one of the techniques is 5S which is basically a collection five Japanese language word and if any company implement this 5S systematically then its productivity will automatically improves considerably. In this way 5S is an improvement method and it shows the continuous improvement in the safety, cleaning, productivity, efficiency and the housekeeping.. This papers deals about the theoretical concepts as well practical approach towards the 5S implementation. This paper also concludes the potential benefits from implementing 5S.

**Keywords:** 5S, Continuous improvement

### I. INTRODUCTION

5S means performing ones job happily, at low cost with safety and certainty by eliminating wastage. It is not just arranging things beautifully in order or doing cleaning job. 5S is a participation program. It is a very effective approach to improving our work environment and total quality. It becomes a base for continuous improvement in the organization.

**First S (Seiri):** It means clear distinction of the items needed from those, which are not needed, and to dispose off all the unnecessary items that do not belong to the work place. It includes the sorting out what is really necessary and eliminate waste, discard the broken and useless items and remaining needed items must be sorted and arranged by frequency of use. This can be done by developing some rules i.e. Low priority items may be stored in a distant place and high priority items may be kept in a designated area.

**Wastage due to lack of Seiri:** In many companies we find the shelves, bins and stores in a messed condition. With this the possibility of occurrence of a defect is very high. The following are the some types of wastage's due to lack of Seiri

- (i) Wasted space.
- (ii) Waste from excess bins and shelves.
- (iii) Wastage's from obsolete parts.
- (iv) Waste from excess transportation due to improper storing location.
- (v) Waste from controlling unnecessary items.
- (vi) Waste from extra task of inventory management.

**Second S (Seiton):** Seiton means having items accessible for everyone to use. This means arrange the required things in the appointed place in such a manner that they can be instantly picked up when required i.e., "A place for everything and everything in its place". In simple terms, seiton emphasis on Workplace organisation to fix the layout of tools and equipment and everything should be readily available when needed. When some item is needed by operator then it should be "easy to see, easy to retrieve, easy to use, easy to return". This can be done by adopting following check points

- Are tools divided into "specialised use" and "regular use" items?
- Is the number of tools required kept to a minimum?
- Are pallets, waste bins, hoses always placed in the correct location?
- Is anything stored around safety or fire fighting equipment?
- Are positions of main corridors and aisles clearly marked?
- Can you immediately and safely find the items you need?

**Wastage due to lack of Seiri:** There are following waste occurs generally in a company due to improper seiton:

- Wasting time to look for items.
- Waste from defect generation.
- Waste from over buying the items which is already in a store.
- Waste from change in plan

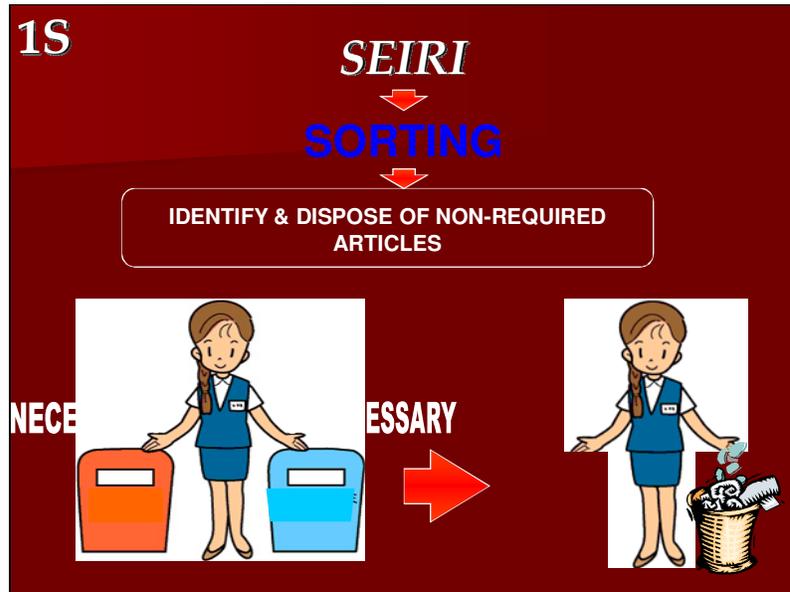


Fig. 1. First S.



Fig. 2. Second S.

**Third S (Seiso):** Seiso is to create a Dust free work place. Seiri & Seiton will make needed items accessible. However work place must allow these items to be used efficiently and correctly. Cleaning sounds simple enough, but it involves following activities:

- Removing from the workplace everything that should not be there
- Maintaining everything (that should be there) in the best possible condition by constant checking and constant care
- Ultimately then "cleaning is careful checking"



Fig. 3. Third S.

**Fourth S (Seiketsu):** Seiketsu means to thoroughly enforce Seiri, Seiton, and Seiso. In other words maintaining Seiri, Seiton, and Seiso leads to Seiketsu. This is the state that exists when the first 3 S's are properly maintained i.e. make sure that clearing,

organising and cleaning are being maintained and incorporated into everyday activities and also identify, eliminate or take preventive action to help prevent 3S conditions to deteriorate. People should have clear job assignments based on their own workplaces.



Fig. 4. Fourth S.

**Fifth S (Shitsuke):** Shitsuke means conditioning oneself to accurately follow what has been decided faithfully. In other words, it means to create a habit that everybody can practice it. Lack of Discipline would result in the following problems:

- The workplace would become dirty and chaotic again.

- Unneeded items would soon begin piling up.
- People would neglect to wear their PPE and eventually sustain an injury.
- Equipment malfunction and defective products
- Customers would become disgusted by our dirty and disorganised factory.



Fig. 5. Fifth S.

In every organization 5S is the method or an approach to clean, organize, order, standardized and continuously to improve the work area. The method of 5S is not only the housekeeping method but it is also an efficient method of the lean manufacturing widely used in the industries.

## II. LITERATURE REVIEW

Michalska and Szewieczek (2007), suggested that The 5S methodology relies on the creation and keeping well organized, clean, high effective and high quality workplace. The 5S method begins each programme of improvement. It is the tool for helping the analysis of processes running on the workplace. 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 losses connected with failures and breaks, improvement of the quality and safety of work {Urbaniak, (2004), Ho, (1996) Karkoszka and Szewieczek (2007)}.

## III. OBJECTIVES OF 5S

The methodology that organizes workstation, department or individual is 5S. The main objective of the 5S is to increase the efficiency of the industry by keeping their platform clean, orderable and accessible. The main objectives of implementing 5S are as follows:

- High Productivity.
- High Quality.
- Reduced cost
- Ensures Delivery On Time
- Enhanced Safety for employees.
- Enhanced morale in the workforce.

#### IV. POTENTIAL RESULT OF IMPLEMENTATION OF 5 S IN THE INDUSTRIES

Table 1 is showing the potential results that can be achieved by implementing the 5S methodology.

<b>Table 1: Potential result from the implementation of 5S</b>	
<b>First S (Seiri)</b>	<b>Second S (Seiton)</b>
<ul style="list-style-type: none"> <li>• Better use of workplace.</li> <li>• Stock conformation.</li> <li>• Process development due to reduction in the cost.</li> <li>• Prevention for losing tools.</li> </ul>	<ul style="list-style-type: none"> <li>• Efficiency increases</li> <li>• There is saving of the time in searching of the necessary things.</li> </ul>
<b>Third S (Seiso)</b>	<b>Fourth S (Seiketsu)</b>
<ul style="list-style-type: none"> <li>• Improvement in the working condition for the workers.</li> <li>• Cost for the machine maintenance is decreased.</li> <li>• There is increase in the customer's satisfaction because of neat and clean plant.</li> </ul>	<ul style="list-style-type: none"> <li>• The standard of the company moves to the next level of growth.</li> <li>• Safety in the industry is increases and there are less accident occurs in the industry.</li> <li>• Travel time for the material is reduces.</li> </ul>
<b>Fifth S (Shitsuke)</b>	
<ul style="list-style-type: none"> <li>• There is reduction in the workers absentees.</li> <li>• There is increment in the moral and the awareness.</li> <li>• Merging the gap between the lower management and the top management</li> </ul>	

#### V. CONCLUSION

In the present study it is concluded that for every industry 5S is the basic foundation for the lean manufacturing system, and the present study reveals the potential benefits with the implementation of the 5S methodology in industries are significant improvement in safety, efficiency, productivity and finally housekeeping. The 5S methodology can be applied in any industry of any size.

#### REFERENCES

[1]. J. Michalska and D. Szewieczek (2007). "The 5S methodology as a tool for improving the organization", *Journal of Achievements in Materials and Manufacturing Engineering*, Volume 24 Issue 2, pp 211-214.

[2]. M. Urbaniak, (2004). "Quality management – theory and practice", Difin, Warsaw.

[3]. S.K. Ho, (1996). "TQM an Integrated Approaching – Implementing Total Quality through Japanese 5S and ISO 9000", Kogan Page, London.

[4]. T. Karkoszka, D. Szewieczek (2007). "Risk of the processes in the aspect of quality, natural environment and occupational safety", *Journal of Achievements in Materials and Manufacturing Engineering*, vol 20, pp 539-542.