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Review on Implementation and Barriers Affecting 5S Methodologies

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***Abstract*: 5S is an important tool in changing worker attitudes and the workplace to the best suited environment. There are certain barriers that makes the implementation of 5S a difficult one. The aim of the study is to interpret 5S implementation techniques and the barriers affecting the implementations.**

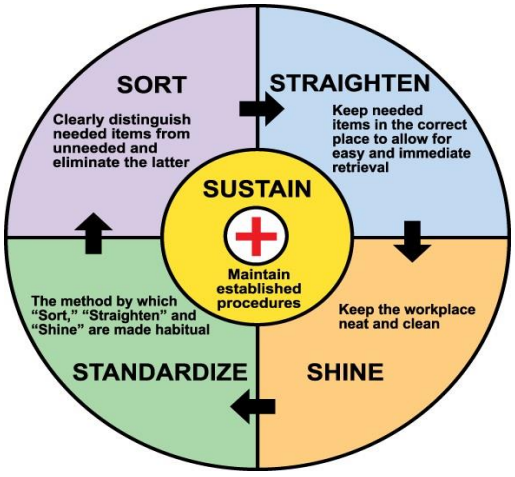
I. INTRODUCTION:

5S is a set of management techniques that are to be implemented in industries, factories or companies to achieve systematic work environment and efficient process layout for the effective progess.5S refers to the five Japanese terms.

-SEIRI
-SEITON
-SEISO
-SEIKETSU
-SHITSUKE

5S is a system to reduce wastes and optimizing quality to obtain better results. Regarding the importance of 5S implementation in today's organizations, this study aims to review previous studies about 5S implementation and barriers for implementation in an organizations.

II. INTERPRETING THE CONCEPTS



A. SEIRI: SORTING

Seiri means SORTING. The elimination of unnecessary goods, resources and products from the workstation for the effective processing and best results. Sorting helps in determining the necessary product required at present and helps in storage of goods needed for the future ***[1].*** The items that are not needed in the workstation will be segregated and disposed ***[3].*** Keeping the products which are not used often will affect the work efficiency ***[9].***

B. SEITON: SET IN ORDER

The objective is to achieve a well systemized workplace where everything is placed in a defined order as conceived. It is carried out by categorising the item that are often used and seldom used ***[2].*** Implementing seiton refines the visibility of resources required for the job. Implementation of visual control is encouraged for the early identification of problems and missteps during operation. Tool shadowing is a concept in seiton which helps in early detection of the missing tools ***[11].***

C. SEISO: SHINE

After the implementation of seiri and seiton the immediate next step in 5S is seiso. Seiso defines about the cleaning standards that are to be tracked ***[7].*** The process of cleaning should become a day to day activity. The tools and equipment that are used should be restored at their own place after use.

D. SEIKETSU: STANDARDIZE

It involves in the establishment of standard rules and strategies that are to be followed in order to achieve a safe and hygienic environment. The standards that are established should be clear, communicative and easy to carry-on ***[15].*** It requires active participation of all the workers in the course.

E. SHITSUKE: SUSTAIN

The program carried out by the management to train the employees to follow 5s techniques continuously is called

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as SHITSUKE. As far as concerned this S is most difficult to stimulate and succeed ***[3].*** Motivation and Discipline are the important tools to reinforce the concept 5S ***[12].***

III. IMPLEMENTATION OF 5S:

STEP 1: GATHERING BASIC KNOWLEDGE ON WHOLE PROCESS.

Before implementing these techniques in any industry or factory one should monitor the overall step by step process which the industry follows to convert the resources into finished products. Basic knowledge about the whole process makes the implementation easier.

STEP 2: IDENTIFYING NEEDS.

The first step is to identify

-What is needed?
-When it is needed?
-The amount needed?

STEP 3: IDENTIFYING AND DISPOSING WASTES.

Red tagging strategy is commonly used to specify the necessary items and wastes. The wastes should be moved to the disposal area there by ***[4].***

STEP 4: SYSTEMIZING THE WORK PLACE.

Now the workplace will have only necessary items. But the items won't be in a systemized order. As a result, the accessibility of tools and equipment becomes little confusing. So that the next step will be arranging and ordering the tools and equipment in a way that can be easily handled and visualized by the workers ***[5].***

How to systemize:

-Naming or numbering the tools.
-Organise similar items together.
-Use cupboards or racks for different types of items. Do not merge items.
-Use different colours on tools for easy identification.
- Follow standard layouts.

STEP 5: CLEANING BRINGS COMFORT.

Everything looks systemized at first but it requires regular check-up and cleaning to maintain the standards similar like first day. Preparation of Tools and appointing workers for regular cleaning of the work plant ***[6].***

How to achieve cleanliness:

- Cleaning procedures should be fairly defined.
- Cleaning tools and materials should be maintained ***[8].***

STEP 6: FORMING STANDARDIZED IDEAS.

Standardizing the ideas or maintaining strategies starts by making a day to day checklist. The checklists should be made very clear and displayed at respective workplaces ***[11].***

STEP 7: RECHECK WITH THE STANDARD.

Once the standards are established, have a routine check and update the standards, so that they can be apt for the current scenario and trends of the industries.

STEP 8: SUSTAINING THE IMPLEMENTATIONS.

To maintain the standards established, the most important things required is self-discipline and team spirit. Creating awareness among the workers to take care of the environment and to sustain the implementations are made ***[13].***

IV. BARRIERS IN IMPLEMENTATIONS OF 5S:

The implementation of such universally accepted techniques is a challenging one because it involves change in attitude, cultures, process layout etc.

1) RESISTANCE TO CHANGE:

The management or sometimes the employees may resist to update themselves to the changing trends. They are adopted to the regular working environment, any changes done on the work environment may make them uncomfortable and difficult to follow ***[14].***

2) TECHNOLOGICAL ADVANCEMENTS:

The customer's need is a continuously changing one. To cope-up with them and to stand among their competitors, companies are focussed on faster and efficient production facilities. It is not easy to update all the advancements ***[16].***

3) AFFECTS PRODUCTION:

If the industry is about to implement the recommendations based on 5S, it suffers a loss in production for a period of time (implementation period) ***[18].*** Even if the implementation period is less, the company is very much concerned about its production loss, which makes the management to oppose implementation of 5S.

4) NEED FOR TRAINING:

Before the implementation of a new technique, the organisation should take survey on the skills that the employers possess. Then the organisation should be willing to train their employees to update them with the new skills and trends ***[18].***

5) LACK OF TOP MANAGEMENT COMMITMENT:

Since it is a management process, a fully supportive and committed management is required for the successful implementation of 5S ***[17].*** The 5S implementation will undergo a premature death without the proper commitment of top level management.

6) NO PROPER VISION AND MISSION

The missions carried out by the organisation should help it to progress towards its goal. Without clear Vision, a proper mission cannot be declared for the progress. Improper vision and mission results to a confusing environment to the organisation ***[5].***

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7) LACK OF COMMUNICATION

Employees must be well communicative to build a good relationship among various departments. Good relationship helps in identifying the problems and to solve the problem mutually. Employees should communicate to the top level management about the continuous improvement thereby ***[20].***

8) FINANCIAL CONSTRAINS

Implementation of 5s requires technological advancements. The organisation should be financially stable to support the implementation ***[20]***. Industries with insufficient resources, may suffer a budget issue on implementing 5s.

9) LACK OF MOTIVATION

Motivation is an intention and inner drive that makes a person to do something or get a certain way. Employee motivation is considered as a key factor in an organisation's success or failure. Motivation changes the behaviour of the workers towards the work from negative to positive ***[21].***

V. CONCLUSION:

The survey states that there are obstacles in implementation of 5S. Another important obstacle is the space between shop floor employees and managerial level and the poor training and awareness of 5S.The key for 5S success is training. Without proper training 5S implementation is not possible.5S is adopted by most organisation in order to reduce the production cost. Once the barriers are identified and solved, then the result obtained by 5S implementation will be more than the expected level.

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