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Productivity Improvement in Vishal Agro Industry Khurai through 5S Methodology

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ABSTRACT

5S is an essential establishment of Lean Manufacturing structures. It is a tool for cleaning, arranging, putting together and giving the essential basis to work piece improvement. This paper treated the implementation of 5S techniquewithinside the small scale industry. By following the 5S methodology, it indicatesmassiveupgrades to safety, productivity, performance and housekeeping. The tendenciesearlier than and after 5S implementation is proventhroughimageswith inside the paper.It additionally intends to construct a more potentpaintings ethic inside thecontrol and employees who could be anticipated to preservethe coolest practices.5S is the beginning of a productive life for everyone. 5S tool has been advanced from Japanese control techniques. It is widely applied in various small scale industry, manufacturing and business sectors. The system helps to organize a workstation for improved efficiency, decrease unwanted, optimize quality, increases productivity and more satisfied consumers. Results have shown that 5S can be applied to the service manufacturing with beneficial effects.

Key Words: 5S, Productivity, Efficiency, Customer satisfaction, Quality, Safety, Analytical Hierarchy Process, Kanban, kaizen.

1. INTRODUCTION

5s is a prominent lean manufacturing strategy that has helped a variety of industrial, educational, healthcare, and other organizations enhance their production and presentation while lowering processing costs, flaws, errors, and waste. The 5 S method is used to organize, arrange, clean, standardize, and continuously enhance a work environment. 5S isn't only about cleaning; it's also one of Lean Manufacturing's most efficient tools. The name of the program comes from five activities that begin with the letter S and are taken from five Japanese words. Sort, Set in Order, Shining, Standardize, and Sustain are the phrases Seiri, Seiton, Seiso, Seiketsu, and Shitsuke, which mean Sort, Set in Order, Shining, Standardize, and Sustain, respectively. Kindness enables the removal of all unneeded elements while ensuring that only what is required remains. Set specifies the locations and quantities required for effective operation. The term "shine" refers to the act of drawing something by looking at it. Make visible gear presentations and controls more consistent. Sustain enables for the preservation of the affiliation headache in the area through education and overall hand engagement.

2. PROBLEM STATEMENT

Small-scale manufacturing occupies a prominent and distinctive position in India's budget. In comparison to agriculture, it has emerged as a controlling mechanism in delivering considerably greater employment. Global markets are constantly changing and requiring high-value, low-cost products. Small businesses in India rely heavily on their ability to innovate, improve operational performance, and raise productivity to survive and grow.

3. LITERATURE REVIEW

To achieve desired outcomes, a manufacturing quality problem-solving model or tool is based on using five features of manufacturing, namely Manpower, Machine, Medium, Work, and Management.

The 5S-Beginning Lean's

5S is one of the most important measures in establishing a thriving Lean culture (Cooper. Et. al 2007). It lays the groundwork and gives a workplace for people to change how they approach their desired future state. According to Van Pattern (2006) and Samuels (2009), 5S is sometimes misunderstood as a simple approach for cleaning the workshop floor, but it can be a powerful tool for building a successful firm and implementing innovative working practices. A 5S program will help to support a clear picture of the workplace when everything has a place and everything has a position.

Sort

Sorting is the first stage in implementing 5s in a company. It is described as the process of removing unnecessary items from a product that do not contribute value. Tools, inventories, machineries, furniture, and other items may be among the undesired items.

Set in Order

The second stage in implanting 5s is to put them in sequence. It is a method of removing the randomness from a system or workplace. This step involves a systematic arrangement of all the elements required to add value to the product.

Shine

Shine is the third step in the 5s process. Cleaning and sparkling of the work area, system, and surrounding environment takes place throughout this process. It increases the positive energy and morale of the organization's employees, resulting in improved performance.

Standardize

The fourth phase in the 5s process is to standardize. It is primarily concerned with the methodical planning and implementation of processes, ideas, and tasks. It aids in the maintenance of a disciplined environment and work culture among personnel and management, which aids in the execution of pre-planned tasks within a set time frame.

Sustain

Sustain is the fifth step in the 5s implementation process. It refers to the rules and regulations that must be followed in order for the 5s to be successful in the organization. The goal of maintain is to make 5s a long-term program or work culture rather than a one-time event. To achieve this goal, the organization's management and employees must work together.

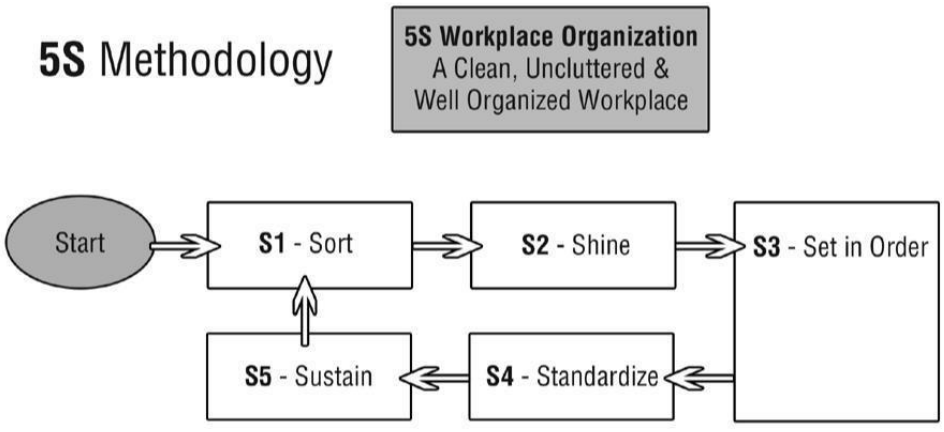
Many studies have investigated and analyzed the impact of implementing 5S in various organizations. Some of their research and discoveries are covered in this article-

Abhishek Jain et al. (2014) investigated the benefits of implementing the 5s phenomenon in an Indian manufacturing company, finding increases in the organization's overall productivity as well as the work cultural environment.

Ghodrati and Zulkifli (2013) conducted a comparison study in an organization before and after the 5s were implemented. As a result, the organization's overall productivity increased. Regardless of the size or type of service provided, 5s has been found to aid in the education of productivity enhancement.**Mohd Nizam Ab Rahman et al. (2010)** analyzed the benefits of deploying 5s technology in two similar organizations, finding that the 5s improved worker health, workplace cleanliness, and safety from accidents.

The impact of implementing the sort component of 5s technology in an organization was investigated by Oleghe Omogbai (2015). The sort aspect was found to be very helpful in greatly boosting the system's performance, and other aspects of the 5s approach can also be used to improve the organization's overall performance.In their study, **A.M. Văduva (2011**) demonstrates how to deal with change and adopt lean in several sections of the organization. In the banking industry, a special emphasis has been placed on 5S implementation. **S. Erdem and K. Aksoy (2009)** conducted research in Turkey's banking sector to eliminate waste using lean approaches. Customers, personnel, and activities in a branch of a nationwide state bank in the Aegean region were observed. Following the analysis of the acquired data, certain improvements were seen as a result of the elimination of needless activities. It was established that fundamental operational costs were lowered, with a high degree of customer satisfaction. The usage of 5S in healthcare services was examined by **F.Y.F. Young (2014).** There was a review of information about 5S, Lean principles, approaches to implement 5S in healthcare settings, combinations of 5S and other tools, and suggestions to improve the success of 5S in healthcare services. It concludes that 5S can be beneficially applied to healthcare services.In this work, **S.P. Kaluarachchi (2009**) describes how a Sri Lankan public hospital's TQM implementation efforts were combined with an attempt to reform its culture. The use of Japanese 5S based TQM activities resulted in a change in the clinic's social values, according to the study. The hospital's service performance improved as a result of successful TQM adoption.

The elements contributing to the sustainability of 5S programs in government hospitals were discovered by K.W.C.U. Kendangamuwa et al. (2015). According to the study, the established 5S programs were sustained in eight out of ten hospitals, with an overall success rate of 80 percent. Ten elements were investigated as potential contributors to the 5S's long-term viability. The key contributing elements, according to the study, were corporate leadership, customer satisfaction, community participation, and organizational culture.



4. IMPLEMENTATION OF 5S

4.1 Guidelines for practicing SORT

The first S focuses on eliminating unnecessary items in the workplace. It is the series of steps which keep only

• what is needed

• the amount needed and

• when it is needed

To implement the first S the Red-Tag process is commonly employed. The Red-Tag strategy helps to identify unwanted items and determine their usefulness. There are six steps involved in creating a successful Red-Tagging process.

Step 1: Launch the Red-Tag Development This is usually done by the Steering Committee by creating holding areas and planning for the disposal of unwanted items using the Red-Tag form.

Step 2: Identify the Red-Tag Targets Specify the type of items and the physical work areas to be evaluated.

Step 3: Set Red-Tag Criteria Three questions need to be asked to determine if an item is necessary.

• Is it useful ?

• How often is it required?

• How much is needed ?

Step 4: Attach the Tag. The Red-Tagging event must be speedy and decisive. The target scope must be completed before the Lunch.

Step 5: Evaluate Red-Tagged Items. Decide what to throw and the actions required

Step 6: Document the Results of Red-Tagging. Results must be logged for accounting purposes so that the organization can measure the improvements and savings realized through the process.

Efficient, spotless, high successful and great working environment is the production of 5S technique. The review was completed in the assembling organization Vishal agro industry . During the review it was executed that determination of interaction boundaries/technique in picked creation process, on every work environment. The 5S strategy was acquainted with laborers and control questions have been inquired.

Case study

The 5S approach produces an efficient, clean, high-performing, and enjoyable working environment. The audit was completed at Vishal Agro Industry, an assembling company. During the review, the determination of interaction boundaries/technique in the chosen creation process was carried out in each work environment. Laborers were educated on the 5S method, and control questions were asked. Each criterion has been followed, and the results have shown up in the form of astonishing alterations in the data.

5S Approach in Industry

The goal of our study was to increase storage space by 30%, create and retain workshop-specific standards and service procedures, cut unproductive time by 10%, redefine access, working and storage spaces, and reposition the workshop. Changes that occur as a result of the 5S implementation During the exercise, all marks that were not required in the workshop were given red labels.

1S: During the activity, any marks that were not required in the workshop were given red labels.

All unnecessary items have been sorted and discarded, and the explanation for the sparse buildup has been discovered.




2S:

- The inappropriate objects have been taken inventory of
- In the workshop, the location of all necessary items have been defined and marked.


3S:

- Washing of floors was done.
- All floors have been cleaned.
- All storing shelves have been cleaned.




4S:

The daily checklists were carried out.

- The specific process was followed.
- Totally obligatory rules in the company are obeyed.
- Rules and regulations of the enterprise were followed.
- Establishment of Rules and Standard Operation Procedure (SOP)


5S:

- It gives a scope for Labours participation in the work area design and repairs.
- Workers absenteeism has been lowered down.
- Team spirit and discipline were developed.
- 5S slogans and posters were introduced.
- Enhancement of operation effectiveness in a better working atmosphere was created

5. CONCLUSION

The advantages from implementing the 5S rules:

1S:

- Process improvement through cost reduction
- Stock confinement

2S:

- Process growth
- Increasing Efficiency
- Shortening of time required for searching necessary equipment

3S:

- Improvised working conditions for workers.
- Machine maintenance cost has been reduced.

4S:

- The standards of the company came to next level.
- Improvement in safety has supported in reducing the injuries of labours.
- Slips and falls of the material have been reduced.

5S:

- It gives a scope for Employees participation in the work area design and maintenance.
- Labours absence has been lowered down.
- Increasing of the awareness and morale.

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