

## Analysis of 5-S stages for an Indian small scale manufacturing industry

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### Abstract

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The reason for this investigation is to implement a portion of the 5S and kaizen standards to help small scale industry to turn out to be more proficient and progressively productive. The report efficiently classifies, examinations, and reviews. In the edges of a contextual investigation, the kaizen and 5S rules in the company have been analyzed and implemented. Based on the contextual analysis, it tends to be expressed that presenting the kaizen and 5S rules get incredible changes the association, for instance, expanding of viability and effectiveness in the procedures, improved efficiency, improved clarity of the procedure, improved confidence and wellbeing of the workers, decrease in delays, looking through time and hazardous conditions

**Keywords:** 5-S, Implementation, Industry, Kaizen

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### 1. Introduction

Industry comes from the Latin words industria which means diligence, hard work etc. Sharma & Sharma, (2020) Analysis of facility layout using MCDM approach. Industry is defined as where the production of goods in factories take place, for the production of goods we require people and some type of activities or services (Sharma, et al., 2013; Sharma, et al., 2015; Sharma et al., 2016). In the other words an industry is sector that produces goods or related services within economy or we can say that an industry is a combination of companies that are interlinked on their business pursuit, companies are divided into an industry according to their revenue Sharma & Singhal, 2016; Sharma & Singhal, 2017; . Sharma, (2018) Implemented simulation for the analysis of available layout alternatives of manufacturing plant

## 2. Phases of 5S

5S is a system for organizing spaces so work can be performed efficiently, effectively, and safely. This system focuses on putting everything where it belongs and keeping the workplace clean, which makes it easier for people to do their jobs without wasting time or risking injury.

The term 5S comes from five Japanese word. In English, these words are often translated to:

- Seiri      ➡ Sort
- Seiton    ➡ Set in Order
- Seiso     ➡ Shine
- Seiketsu ➡ Standardize
- Shitsuke ➡ Sustain

Let's take a closer look at each of the parts of 5S.

### 1. Sort :-

The first step of 5S, Sort, involves going through all the tools, furniture, materials, equipment, etc. in a work area to determine what needs to be present and what can be removed. Some questions to ask during this phase include:

- What is the purpose of this item?
- When was this item last used?
- How frequently is it used?
- Who uses it?
- Does it really need to be here?

These questions help determine the value of each item. A workspace might be better off without unnecessary items or items used infrequently. These things can get in the way or take up space.

### 2. Set in Order :-

Once the extra clutter is gone, it's easier to see what's what. Now work groups can come up with their own strategies for sorting through the remaining items. Things to consider:

- Which people use which items?
- When are items used?
- Which items are used most frequently?
- Should items be grouped by type?
- Are more storage containers necessary to keep things organized?

During this phase, everyone should determine what arrangements are most logical. That will require thinking through tasks, the frequency of those tasks, the paths people take through the space, etc.

### 3. Shine:-

- The Shine stage of 5S focuses on cleaning up the work area, which means sweeping, mopping, dusting, wiping down surfaces, putting tools and materials away, etc.

- Shine also involves performing regular maintenance on equipment and machinery. Planning for maintenance ahead of time means businesses can catch problems and prevent breakdowns. That means less wasted time and no loss of profits related to work stoppages.

#### **4. Standardize:-**

- Standardize makes 5S different from the typical spring-cleaning project. Standardize systematizes everything that just happened and turns one-time efforts into habits. Standardize assigns regular tasks, creates schedules, and posts instructions so these activities become routines. It makes standard operating procedures for 5S so that orderliness doesn't fall by the wayside.
- Depending on the workspace, a daily 5S checklist or a chart might be useful. A posted schedule indicating how frequently certain cleaning tasks must occur and who is responsible for them is another helpful tool.

#### **5. Sustain:-**

- Once standard procedures for 5S are in place, businesses must perform the ongoing work of maintaining those procedures and updating them as necessary. Sustain refers to the process of keeping 5S running smoothly, but also of keeping everyone in the organization involved. Managers need to participate, as do employees out on the manufacturing floor, in the warehouse, or in the office.
- Sustain is about making 5S a long-term program, not just an event or short-term project. Ideally, 5S becomes a part of an organization's culture. And when 5S is sustained over time, that's when businesses will start to notice continuous positive results.

### **3. Industry benefits**

#### **1. Increased Productivity**

Every organization works towards achieving increased productivity, after all, productivity increases the overall return on investment. According to global research done by various consultancy firms in the US, it has been found that effective implementation of 5S lean manufacturing resources provides this improvement.

#### **2. Improved Safety**

Improved safety is yet another benefit of 5S implementation. A clean workplace environment, especially in a manufacturing unit can result in significant reduction in the number of injuries sustained by workers. Most often, unattended chemical spills increases the chances of slips and falls.

#### **3. Reduction in Waste**

Implementing 5S will also yield a fair reduction in lost and damaged items in the workplace.

A clear and organized workplace with proper labeling provides workers the flexibility to replace damaged items in the designated places, thereby minimizing the total number of misplaced and lost tools and equipment. Further, the appropriate management of equipment also minimizes damages that are generally caused to various parts of the products during the production process.

#### **4. Worker Commitment**

Achieving worker commitment is one of the major goals of implementing **5S lean manufacturing training**.

This is because the workers would be largely responsible for using it on the ground. 5S emphasizes on worker participation by streamlining their work and allowing them to provide inputs to make productive changes in the overall design of the workplace and also to carry out its maintenance tasks.

#### 4. Conclusion

The focal points from recognizing the 5S guidelines:

Process development by cost decrement. Stock restriction, Better utilization of work territory. Prevention of lost commodities or apparatus. Process Advancement, Augmented Efficiency. Time required for looking through important things is minimized. Improvised working habitat for workers. The quantities of clients are expanded in the wake of keeping up a spotless and flawless design. Machine support cost is diminished. The gauges of the firm came to next level. Advancement in security has upheld in minimizing the wounds of workers. Slips and falls of the material is now minimized. Travel time of materials is minimized which prevented decrease of work dangers.

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