

A study on Implementation of 5S in warehouse of Win Agency, Theni.

Surya M R¹, Dr. Vinayaga Sundaram R²

¹ Final year student of MBA, Operation Department, KCT Business School, Tamil Nadu, India

² Associate Professor, Operation Department, KCT Business School, Tamil Nadu, India

ABSTRACT

This paper deals with the implementation of 5S in warehouse of an Agency. Warehouse is used to store products and provide information about the conditions of inventory stored in warehouse, so that we can easily access to anyone needed. This project describes about the application of the 5S work culture in the warehouse area. The implementation of 5S concept is proven to eliminate waste. After getting order from the retail stores, it is odd for the employee to search the product in the huge warehouse and it also takes lots of time and movement while searching. In order to eliminate the time-consuming and reduce the movement. It is necessary to improve by the 5S implementation principles, namely Seiri (sort), Seiton (Set in order), Seiso (Shine), Seiketsu (standardise), and Shitsuke (Sustain).

Keyword: - Implementation ,5S, improvement and Effectiveness.

1. INTRODUCTION

In the era of industrialization there was a sudden increase in the number of industries. And they were not able to promote and deliver their product to their customer in every place, in which they take help from an agency to promote their product to the retail stores and to the customer. The role of the agency is to buy bulk order from the company and then they split the product and sell to the retail store owner. Agency are the major players for the company to sell/delivery their product to their customers.

Agency warehouses for store their product while they get order from the retail stores, it is odd for the employee to search the product in the huge warehouse and it also takes lots of time and movement while searching. In order to eliminate the time-consuming and reduce the movement. It is necessary to improve by the 5S implementation principles, namely Seiri (sort), Seiton (Set in order), Seiso (Shine), Seiketsu (standardise), and Shitsuke (Sustain).

1.1 ABOUT THE STUDY

In this paper, the study is about implementation of 5S in warehouse of Win Agency, Theni.

1.2 STATEMENT OF THE PROBLEM

- Product in the warehouse was not arranged properly. They are arranged the product according to the time when they get product from the company.
- Consuming more time while taking the product and also, we need to search for a while to get a correct product for delivery to the retail store.
- While searching for the product the movement of the employee is also high and they get tired very quickly.

1.3 OBJECTIVES OF THE STUDY

Implementation of 5S

- Product should be arranged properly according to FMCG, FMCD, etc. So that employee can get product easily.
- Therefore, employee movement inside the warehouse can be reduced.
- Searching time for the product in the warehouse can be eliminated by using 5S.

2. INDUSTRY PROFILE

Name of the company	:	Win Agency
Year of establishment	:	2013
Authorized person	:	Mr. Udhayakumar M
Address	:	1, Rotary Charitable Trust Building, Theni Main Road, Chinnamanur, Tamil Nadu - 625515
Mobile	:	8098846124
Email	:	winagency46@gmail.com

2.1 Products:

A.V. Thomas & co

- Ghee
- Tea

FINOLEX CABLES LIMITED

- Cables, Bulb & Bulb holder.
- Switch Board.

DABUR

- Paste
- Hair oil
- Face wash

DETTOL

- SOAP
- HAND WASH
- SANITIZER

MEDIMIX

- SOAP AND FACE WASH

3. REVIEW OF LITERATURE

J. Michalska and D Szewieczek (2007), the aim of this work is to present the 5S methodology. In this study, 5S rules were analyzed and implemented into the manufacturing process. Based on our research, we have come to the conclusion that the application of 5S rules leads to big changes in the company, for example: improving processes by reducing costs, increasing the efficiency and effectiveness of the process, maintenance and improvement of machines. efficiency, safety and pollution reduction from industry, discretionary procedures. The 5S methodology allows for the analysis of processes in the workplace. 5S is a methodology for creating and maintaining well-organized, clean, high-performance and high-quality jobs. Our own research has convincingly shown that teaching 5S work rules is very important. The key is to break the activity down into several key steps and maintain continuous improvement. The 5S method launches every improvement program in the company [1].

S. B. Khedkar et al (2012), discussed that 5S is the basic foundation of a lean manufacturing system. It is a tool to clean up, categorize, organize, and create the necessary foundation for improving your workplace. This study focuses on the implementation of the 5S methodology. inside the S.P.Plastic Industry MIDC, Hingna Road, Nagpur 16. A detailed description of the 5S system is provided. This will affect trainers and industry workers working in the selected location. Consistent with the 5S methodology, this study could show significant improvements in levels of safety, performance, efficacy, and purity. The study documents improvements through the use of before and after images, and aims to build a stronger work ethic among workers and engineers who are expected to continue practicing [2].

Arash Ghodrati , Norzima Zulkifli (2013), discussed 5S as a systematic method used by organizations, comes from five Japanese words; Seiri, Seiton, Seiso , Seiketsu and Shitsuke . This system helps organize the workplace to improve efficiency, reduce waste and optimize quality and productivity by monitoring an organized environment. It also provides useful visual evidence for stronger results. Empirical research is needed in the field of new management systems and their impact on the company's performance. 5S on Organizational Performance, this document aims to define the elements and characteristics of activities in industrial organizations and determine the impact of 5S implementation on organizational performance. The survey method used and data collection was carried out by distributing questionnaires among five target organizations that have implemented the 5S methodology. Target organizations are selected from different industries and areas of work. and after the introduction of 5S. The results of this study show that 5S is an effective tool for improving the performance of an organization, regardless of its type, size, production or service. Consequently, 5S practices will strongly support the organization's goals of continual improvement and outstanding performance [3].

P. M. Rojasra and M. N. Qureshi (2013), discussed small industries that play an important role in the Indian economy and have become a powerful tool for generating relatively more employment alongside agriculture. It accounts for over 50% of industrial production in terms of value added and a third of export earnings. The global market is constantly changing and requires high quality and inexpensive products. Such products can be produced using Lean manufacturing methods, the 5S Management is a fundamental Lean tool for cleaning, organizing and providing the necessary basis for improvement. Method 5S at Krishna Plastics, Udyognagar, Amreli, Gujarat. Among the various lean manufacturing methods available, 5S offers good potential for improvement on demand. A company in the business conducted a 10-week study, and the results after the implementation of 5S showed that the efficiency of the production system increased from 67% to 88.8% the next week [4].

Vipulkumar C. Patel and Dr. Hemant Thakkar (2014), this study explains the methods and techniques for using 5S to improve the efficiency of all processes in a company, with a particular focus on implementing the 5S system and eliminating losses in the company. The result is an efficient organization of the workplace [5].

Soumya R. Purohit and V. Shantha (2015), demonstrated that 5S is a step-by-step method for removing unwanted items, reducing the time spent searching for items, checking during cleanup, standardizing layouts to avoid wastage, and more. the above through self-discipline. This simple cleaning method effectively reduced waste and increased productivity. Over the past decade, it has become popular in India and has helped many industries grow without much investment. This document provides the step-by-step implementation guidance required to successfully incorporate the five principles into day-to-day management practices. This document shows how to organize each component of the 5S Seiri, Seiton, Seiso, Seiketsu and Shitsuke methodology in the industry. This document also shows the results of the phased implementation of the 5S methodology at Sphoorti Machine Tools Private Limited, Bangalore, India [6].

Saad Shaikh et al (2015) discussed that small businesses play an important role in the Indian economy, the quality of organization and productivity are paramount. production, working conditions, cleanliness, etc. This case study looks at the adoption of 5S in an industry where the implementation of 5S can lead to significant improvements in environmental performance in addition to improvements in cleanliness, health and safety, quality, productivity and productivity. conditions in organizations [7].

R. S. Agrahari et al (2015), discussed 5S adoption in small industries and showed significant improvements in the industry. Quality assessment is the first step of 5S. Here, the items are classified into necessary and unnecessary categories. This improves work efficiency by removing obstructions and avoiding the accumulation of unnecessary items. Here, cleaning is done as a check, a cleaning checklist is designed to ensure proper cleaning, Shine makes the workplace safe and easy to work with. Rather than in the standardization phase, standard rules are established to follow best practices in the workplace. For everything to be in order and in its place, it is necessary to follow the standard rules, and outdated rules should be discarded. Maintenance is a difficult stage 5S, here it is necessary to ensure that all the above stages are completed, adequate training of workers so that they can follow the process, perform periodic checks to check the actual condition [8].

M.Wasi Baig et al (2015), discussed that standardizing our labs with 5S can provide tremendous benefits in terms of efficiency and shortened delivery times. We need to consider introducing standard operating procedures for this process. All laboratories have office instructions, but in most cases, they are organized on a departmental basis

rather than according to actual procedures such as theoretical sequences in practical aspects. if we follow the specified process and remove all useless steps. Therefore, in this document, we are moving towards our process, as in 5S [9].

Ravi Chourasia and Dr. Archana Nema (2016), discussed evaluating the implementation of the 5S approach as one of the lean management tools in the service sector. It is one of the fastest growing sectors of the Indian economy. It accounts for about 52% of GDP. The 5S process is a core component of the Lean philosophy. 5S is the beginning of a productive life for everyone. The 5S system is designed based on Japanese management methods widely applied in manufacturing and business, helping to organize the workplace to improve efficiency, reduce waste, optimize quality, improve high productivity and customer satisfaction. The results show that 5S can be applied in the service industry with positive effects [10].

K. Balasundaram et al (2017), discussed the workplace as one of the main factors of productivity in any industry, be it micro, small, medium or large. The 5S method is one of the best workplace organization methods for creating the best working conditions in the workplace. The 5S methodology allows you to analyze the processes that identify and eliminate unnecessary products, tools and general clutter; at the same time, it will further develop new designs, better storage systems and new, better methods for identifying precision parts. This case study focuses on the adoption of 5S in the industry by OK Plastics, a corporation based in Addis Ababa, Ethiopia. This article explains the techniques and techniques for using the 5S to improve the efficiency of all processes in a company. The introduction of 5s shows that the application of 5S rules has brought big changes to the company, increased the efficiency and effectiveness of processes, improved structure, productivity, and improved the quality and working conditions in the company [11].

D. Selwyn Jebadurai et al. (2017), discussed the implementation of 5S in commercial warehouses in the manufacturing industry, which eliminates waste observed in the warehouse and its systematic disposal through 5 steps of 5S. Little use of space, unnecessary items, lack of proper hygiene. Outdated working rules are the main waste seen in the warehouse. By implementing multiple 5S steps, specific waste is eliminated and better space utilization is achieved [12].

Md Abdur Rouf et al (2017) discussed the registration of quality analyzes by hospitals that have implemented the 5s methodology. The 5S methodology helps achieve the goal of reducing time, waste and inactivity. This means cost savings and good service for your patients, improved staff productivity, and improved organizational efficiency and effectiveness [13].

Vikram Singh et al (2018), studied 5s systems methods and techniques used to improve the efficiency of all processes in the industry. The main goal is to reduce losses in the industry and implement the 5s system. It can be seen that thanks to the application of the 5-hour rule, the company has made big changes, for example: reducing costs, increasing the efficiency and effectiveness of processes, efficient maintenance and repair of machines, safety, accuracy and quality. and contamination control, optional. 5s to analyze current workplace processes and create clean, efficient and high-quality workplaces. Research clearly shows that worker training is so important to the 5-hour rule that it's important to break down actions into several key steps and continually improve. This method can be used in all companies, resulting in an efficient workplace organization [14].

I Rizkya et al. (2021), describes the assessment and application of a 5S work culture in a warehouse. 5S is a proven concept for reducing waste. One of the factories for the production of packaging for oils has a small area of spare parts and is not well maintained. As a result, problems such as damage to spare parts that require special handling in the warehouse due to crushed metal arise. correct address. As a result, finding what you need is not easy. The assessment is carried out at the warehouse according to the 5S criteria. The development of the rating gives 1.82 points. This means that the use of 5S in the warehouse is more in line with the current concept, so there is a need to improve the principles of 5S implementation, namely Seiri, Seiton, Seiso, Seiketsu and Shitsuke [15].

4. RESEARCH METHODOLOGY

Poor workplace conditions can lead to increase in wastes such as time wasted in searching for needed items or motion to avoid obstacles. It can also cause an accident Implementation can start by creating a good and clean

working environment. 5S is a Lean workplace tool that is essential for implementing lean strategies. 5S is a reference to five Japanese works which described standardized cleaning. The 5S are

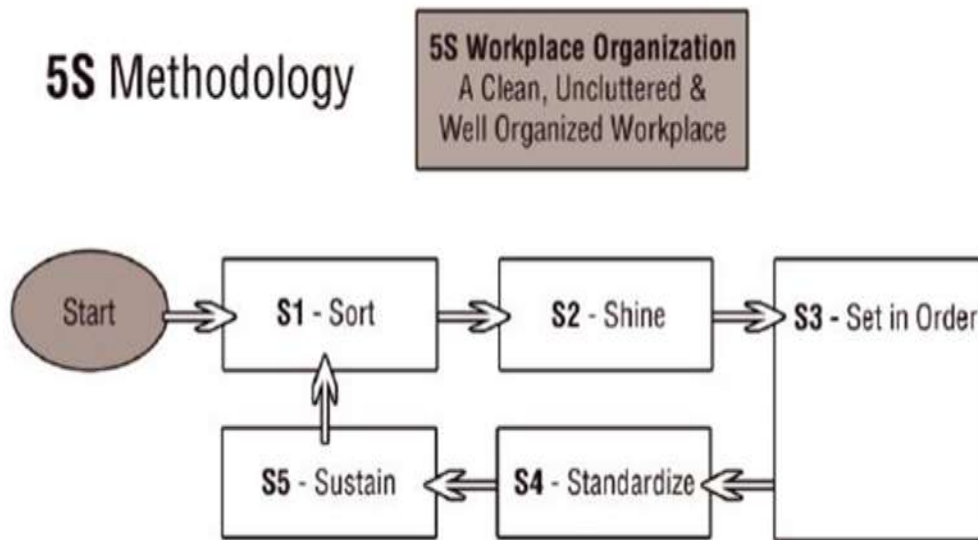


Fig -1: The 5S system

4.1 1 S – Sorting/ Seiri :

Seiri (sorting, organizing the workplace, removing unnecessary materials). This applies to the practice of sorting all tools, materials, etc. in the work area and storing only the essentials. The remainder is kept or thrown away. This reduces the danger and clutter that interferes with productive work.

Benefits:

- Improves processes by lowering costs,
- Reduces inventory,
- Uses a better work area,
- Prevents tool waste.

4.2 2 S – Set in order / Seiton

Seiton (set in order, place for everything). Focuses on the need for order in the workplace. Tools, equipment and materials should be organized for easy and efficient access. There must be a place for everything, and everything must be in its place.

Benefits:

- improved process (increased efficiency and effectiveness),
- reduced time to find what is needed,
- improved safety

4.3 3 S – Shine / Seiso

Seiso (shine, cleaning, removing of wastes, dust etc.). Indicates the need to keep the workplace clean and tidy. Cleaning in Japanese companies is a routine job. At the end of each shift, the work area is removed and everything is put in place.

Benefits:

- Improves machine efficiency,
- Keeps equipment clean,
- Efficiency,

- Keeps the workplace clean, easy to inspect,
- Quickly repair damage (potential sources of damage),
- Improve working environment, eliminate the cause of accidents

4.4 4 S – Standardize / Seiketsu

Seiketsu (standardize, constant place for things, constant rules of organization, storage and keeping cleanness). Ensures control and consistency Basic cleanliness standards will be applied throughout the facility. Everyone knows their responsibilities for sure. Taking care of your home is part of your regular job.

Benefits:

- improves safety and reduces pollution in industry,
- develops procedures that define processes

4.5 5 S – Sustain/ Shitsuke

Shitsuke (sustain, automatic realization of above-mentioned rules). the above rule It deals with maintaining standards and maintaining facilities in a safe and efficient manner day after day, year after year

Benefits:

- Improved cognitive and moral qualities,
- Reduced errors caused by inattention,
- Decision-making processes,
- Improved internal communication processes,
- Improved human relations.

5. IMPLEMENTATION OF 5S TECHNIQUES:

5.1 Sorting:

Firstly, sort the necessary and unnecessary product available in the warehouse. After that the necessary product available in the warehouse should sorted and classified according to FMCG product, FMCD products. Through the suitable sorting it can be identified as Food products, Cable, Soap, etc... and by this we can eliminate the waste and damage things. It helps to maintain the clean warehouse and improves the efficiency of searching time.

5.2 Set in order:

This means preparing the necessary items neatly and systematically so that they can easily be taken and avoiding time loss while searching for product. The goal is to minimize searching time and the number of moves that a employee moves for taking a product. So, it will help to improving the efficiency of the main objectives. Especially important is visualization of the warehouse. Eg: Providing name board (like Dettol soaps, Dabur paste, etc..) at which the product is kept, by this the product can be easily identified by the employee.

5.3 Shine:

A clean working environment is essential to efficiently performing a task, as dust, dirt and debris are sources of disorder, discipline, inefficiency, production errors and industrial accidents. become an everyday activity. The workplace should be cleaned periodically. To help identify dust, factory floors are often painted in bright colors to enhance the light source inside the factory.

5.4 Standardize:

To establish standards of the best practice in the warehouse and to ensure that the standards are compiled and to undertaking that the warehouse is clean and tidy at all times. Creating instructions and audit sheets for proper maintenance. Creating small road map of warehouse where the product has been placed and it will help employee while searching.

5.5 Sustain:

Compact Self-Discipline involves implementing and enforcing regular cleaning and sorting rules, resulting in increased employee awareness and fewer products and processes. Inappropriate processes, improving internal communication and therefore for improvement. periodic checks should be made on the use of the 5S rule. This

check is carried out using the so-called 5S Radar Chart and Checklist created on its basis, which is used to assess the workplace.



Fig -2: Before and after apply 5S

5.6 Advantages of implementation of 5S:

Successful implementation and implementation of 5S principles in many organizations brings a number of benefits, as outlined below.

1. The concept of 5S is very simple and understandable to everyone, as it requires only general knowledge of the discipline and high commitment. This practice can be done at all levels.
2. 5S will promote teamwork, discipline and a sense of responsibility and kindness towards the company.
3. 5S will create a clean and efficient work environment and provide a world-class distribution system.
4. An ongoing commitment to governance and participation is fundamental to the successful implementation of 5S practices for all citizens.
5. 5S is an ongoing need for great service.

6.RESULT AND DISCUSSION:

Implementation of 5S in Win Agency, Theni, what is effectiveness after implementation of 5S we have compared and recorded it with old records of the effectiveness of 5S before and after implementation is given below Table. 1, Since reading of effectiveness, is given out of 1, for example working environment is taken 0.5 out of 1 before implementation of 5S now after it is 0.9 out of 1, similarly, the other process reading is given before and after implementation of 5S. From that comparison, we conclude that overall change is 80% which means increased it up to 30% after implementation of 5S.

Table -1: PROCESSES EFFECTIVENESS BEFORE AND AFTER IMPLEMENTATION OF 5S

Sr. No.	Processes	Before	After
1	Product Searching Time	0.6	0.9
2	Product Arrangement	0.5	0.8
3	Tool Arrangement	0.4	0.6
4	Working Environment	0.5	0.9
5	Working Efficiency	0.5	0.8
6	Overall Change in Percentage	50%	80%

7. CONCLUSIONS

The study of these papers demonstrates the implementation of 5S methodology practice leads to improvement in working efficiency of the Win Agency, Theni. The 5S improves environmental performance and reduction of time wastes in warehouse. It shows that neatness in the storage products. The 5S implementation leads to the improvement in reduction of products searching time and organization become self-disciplined. The implementation of the 5S system gives the following effects regarding the improvement in quality such as workers get used to ordering and discipline, reduction of physical effort, eliminates unused, unwanted material from the warehouse. The final conclusion is that overall change is 80% which means increased up to 30% after implementation of 5S.

8. REFERENCES

- [1]. Michalska, J., & Szewieczek, D. (2007). The 5S methodology as a tool for improving the organization. *Journal of achievements in materials and manufacturing engineering*, 24(2), 211-214.
- [2]. Khedkar, S. B., Thakre, R. D., Mahantare, Y. V., & Gondne, R. (2012). Study of implementing 5s techniques in plastic moulding. *International journal of modern engineering research*, 2(5), 3653-3656.
- [3]. Ghodrati, A., & Zulkifli, N. (2013). The impact of 5s implementation on industrial organizations' performance. *International journal of business and management invention*, 2(3), 43-49.
- [4]. Rojasra, P. M., & Qureshi, M. N. (2013). Performance improvement through 5S in small scale industry: a case study. *International Journal of Modern Engineering Research (IJMER)*, 3(3), 1654-1660.
- [5]. Patel, V. C., & Thakkar, H. (2014). Review on implementation of 5S in various organization. *International Journal of Engineering Research and Applications*, 4(3), 774-779.
- [6]. Purohit, S. R., & Shantha, V. (2015). Implementation of 5S methodology in a manufacturing industry. *International Journal of Scientific & Engineering Research*, 6(8), 225-231.
- [7]. Shaikh, S., Alam, A. N., Ahmed, K. N., Sawant, I., & Hasan, S. Z. (2015). Implementation of 5S practices in a small scale organization: a case study. *International Journal of Engineering and Management Research (IJEMR)*, 5(2), 130-135.
- [8]. Agrahari, R. S., Dangle, P. A., & Chandratre, K. V. (2015). Implementation of 5S methodology in the small scale industry: A case study. *International Journal of Scientific & Technology Research*, 4(4), 180-187.
- [9]. Baig, M. W., Husain, I., & Ahmad, S. (2015). Implementation of 5s to enhance quality for practical excellence of laboratory (A case study at surveying laboratory, integral university campus shahjahanpur). In *2nd*

- International Conference on Recent Innovations in Science, Engineering and Management* (pp. 105-110).
- [10]. Chourasia, R., & Nema, D. A. (2016). Review on Implementation of 5S methodology in the Services Sector. *International Research Journal of Engineering and Technology*, 3(4), 1245-1249.
- [11]. Balasundaram, K., Adugna, A., Gobachew, A. M., & Kumar, M. S. (2017). Implementation of 5s methodology for performance improvement in a medium scale industry: A case study. *International Journal for Research & Development in Technology*, 7(3), 2349-3585.
- [12]. Jebadurai, D. S., Rose, A. R., Atthisugan, I., & Baby, B. (2017). Implementation of 5S in sales warehouse. *JChem Pharm Res*, 2, 113-117.
- [13]. Rouf, M. A., Debnath, S. C., Haque, M. E., Chowdhury, Z. M. R., Hasan, D. M. M., Zannat, T., & Rabby, M. F. (2017). Quality of hospital services in 5S-KAIZEN-TQM implemented secondary level hospital: a cross-sectional study. *Asian Journal of Medical and Biological Research*, 3(3), 335-340.
- [14]. Singh V., Jain P., & Arora A. (2018). Review Paper on Implementation of 5 S in Different Organizations. *International Journal of Engineering Science Invention (IJESI)*, 2319 – 6734, PP 37-43.
- [15]. Rizkya, I., Sari, R. M., Syahputri, K., & Fadhilah, N. (2021, March). Implementation of 5S methodology in warehouse: A case study. In *IOP Conference Series: Materials Science and Engineering* (Vol. 1122, No. 1, p. 012063). IOP Publishing.

