

BENEFIT OF 5S SYSTEM IN WASTE ELIMINATION: A CASE STUDY IN FABER MEDI-SERVE SDN BHD

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ABSTRACT

5S system has been implemented in the manufacturing field to help eliminate the waste and to improve the productivity for an organization. The highlight and objectives for this paper is to show the implementation of 5S system in helping Faber Medi-Serve SDN.BHD to improve; the performance of work done, service quality and elimination of waste. This project employs qualitative methods in the data collection stage, in the form of interviews. This project has reviewed the current practices of Faber Medi-Serve SDN. BHD. and has proven that 5S system is successful in developing good practice and deliver good result for the organization performance.

Keywords

5S, lean manufacturing, effectiveness and efficiency, eliminate waste, productivity

1.0 INTRODUCTION

This project is discussed about the concept and philosophy of 5S system of lean manufacturing. (Gouse, 2003) advocate the application of 5S system of lean manufacturing is a production practice that considers the expenditure of resources for any goal other than the creation of value for the end customer who consumers a product or service, value is defined as any action or process that a customer would be willing to pay for. (Womack and Jones, 2003) derived the lean manufacturing from the Toyota Production System is a process of management philosophy, are more focusing on giving higher value with less work. Lean manufacturing are well known focus on reduction of the original seven wastes to improve the overall customer value. (Wong and Ali, 2009) derived that the adoption of lean manufacturing in exploring the 14 key areas of lean manufacturing namely scheduling, inventory, material handling, equipment, work processes, quality, employees, layout, suppliers, customers, safety and ergonomics, product design, management culture, tools and techniques. All the 14 key areas are investigating

serve as a useful guide for organization when they are adopting lean manufacturing. Therefore, lean manufacturing is a strategy that had been used in the system to minimize the cost and waste. This is in order to remain the competitive in the global market.

1.1 PROJECT BACKGROUND

Explanations of the concept lean manufacturing and other term which is included in lean manufacturing such as 5S, kaizen, which is applied in the company to help improve their performance (Detty and Yingling, 2000), as well as derived techniques such as 5S inventory displays being utilized. It is a good practice use to describe the workplace safety, production lines, material flow, quality measurement and others information. Moriones (2010) defined 5S as a system to reduce the waste and optimize the productivity and quality through maintaining an orderly workplace and using visual cues to achieve more consistent operational results. 5S is the acronym for five Japanese words which is seiri, seiton, seiso, seiketsu and shitsuke. Thus the benefit for implemented in this 5S system is to maximize the efficiency and effectiveness by reduce people's workload and human errors mistakes. Besides that, 5S also maximize the effectiveness and enhancing the transparency and lastly promote discipline through training and education to enhance the level morale which increased the quality of work standard.

1.2 PROBLEM STATEMENT

The employee of the Faber Medi-Serve Sdn. Bhd is desired to work in the fresh, clean working environment. So the attitude and the mindset of the worker as well as the top management are desired to push the company environment into the ISO standard in order to make the working environment more convenience to them to produce more effective work done and eliminate the waste. So, a clean and tidy environment will reflect how the employee and top management show them care about their jobs.

People who are working such a tidy and nice environment will produce more effective work done compare to others those who work in messy and disorganized work areas. However, according to Olofsson (2009) there are companies who refuse to acknowledge their part in keeping the workplace more people friendly and instead put the blame on the perceived laziness of employee when it comes to housekeeping.

1.3 OBJECTIVES

The main goal of the study is to highlights the benefits of applying the 5S system to eliminate the waste in the Faber Medi-Serve (M) Sdn.Bhd. Overall the area of concern of this project is how the implemented of 5S system are improving the performance work done of the worker and help them to eliminate the waste, increase the effectiveness of workload in the company. The specific objectives of the study are as follows:

- To investigate the practice of 5S system in improving the customer service quality,
- To determine the best way to provide the quality working environment in supporting with the 5S system.
- To understand the methods in maintaining the 5S system.
- To understand how does the organization apply 5S to eliminate the waste.

1.4 SCOPE OF THE PROJECT

Many organizations in Malaysia are practicing using the 5S system into their working place. Therefore the focus on this research that is Faber Medi-Serve Sdn.Bhd. this organization was consider as a part of the government sector but the process and procedure of the organization are undergo to private. It has many small branches around Malaysia, and the branch has been chosen which is located in hospital Kangar, Perlis. Before this Faber Medic Serve Sdn.Bhd is not practice the lean manufacturing into the organization, it is hard to practicing this system such as kaizen, 5s. The reason is due to the hard understanding from the worker and the culture of worker, so make the 5s system hard to launch and practicing well. Thus it affects the performance of the organization. Therefore, through this project research is to find out the research output after the application of 5s, how the system create the better environment for the worker and also for the organization. How the systems help improve the performance of the worker, and how the system brings the impact for worker to produce the more healthy and safety working environment. How the system help the organization to eliminate the waste and increase the productivity.

2.0 LITERATURE REVIEW

The literature review will be discussing about the 5s system. Deeply understand about the definition of 5s system, which is included the principle of 5s system, the plan of 5s system launch, and the background of 5s system in Faber Medic Serve Sdn. Bhd organization. 5S stand for the: seiri, seiton, seiso, seiketsu and shitsuke. Translated to English become: Sort, Set (in place), Shine, Standardize and Sustain. 5S isa manageable process that is relatively easy for people, and is was also a method to organize and manage the workspace and work flow with the intent of improving efficiency and eliminating the waste, improving work flow and reducing process inefficiencies.

Japanese term	English equivalent	Meaning
Seiri	Tidiness	Throw away all the rubbish and unrelated material in workplace.
Seiton	Orderliness	Set everything in proper place for quick retrieval and storage.
Seiso	Cleanliness	Clean the workplace
Seiketsu	Standardization	Standardize the way of maintaining cleanliness
Shitsuke	Discipline	Practice "Five S" daily-makes it a way of life (commitment).

Table 1: 5S definition (Adapted from SiliconFarEast.com, 2003)

2.1 Definition of 5S

- I. Seiri (Sort) was a first step of the 5S system, which is refer to the act of throwing away all unwanted, unnecessary, and unrelated materials in the workplace. Eliminating tools, materials, fixtures or any items not used in the process. It helps to maintain the clean workplace and improves the efficiency of searching and receiving thing, it makes shortens the time of running the operation
- II. Seiton (Set in place), helps to identify the places of storage of each material or transport ways orderliness, it also concern

to efficiency. The process became quick to access an item or material, it will make the work flow become efficient and the worker becomes productive.

- III. Seiso (Shine) consists of cleaning up the workplace and giving it until "shine". Everyone must help to make a good impression through clean the workplace. Regular cleaning permits are to identify and to eliminate the sources of disorder and to maintain the clean workplaces.
- IV. Seiketsu (Standardized) defining the standards by which personnel must measure and maintain 'cleanliness'. It encompasses both personal and environmental cleanliness. Personnel are trained to detect abnormalities using their five senses and to correct such abnormalities immediately. Standards should be very communicative, clear and easy to understand.
- V. Shitsuke (Sustain) are denoted commitment to maintain orderliness and to practice the previous first 4S as a way of life. This emphasis of shitsuke is elimination of bad habits and constant practice of good ones.

2.2 How to Launch 5S

5S system only involve low cost to implement, it require changes to the work habits of employees and needs the support and reinforcement of management. Thus really needs a big support from the management level to make sure 5S systems are success to launch. The activity can be run through training and education, self-involvement in 5S activity planning.

2.1.1 Educate our self in 5S

Getting more knowledge about the 5S system before take action and deeply understand the company culture and environment is important key to success road before implement 5S system. Explanation about the 5S systems are needed in how the system will improve the productivity and quality, promote safety, lower costs involved to implement and the potential saving, make the workplace cleaner, safer and more pleasant for employee. Such as purchase book and do more online research, try to write out the overview of the 5S system and think it how to implement and figure up in the company.

2.1.2 Create 5S System Plan and 5S Team

Planning of paper work proposal or suggestion, walking around visit other company working place to have a look how they implemented the 5S system. Explore

whole work area to rearrange the setting with new plan. And take it as an example as a reference for the company. Actually 5S system needs the participation from every people in the organization in order to sustain it. 5S team members should be select from a core group people in various workstation, this is because different people will have different opinion and experience from past. We have to gather all the people and point. They should be well in organized and good sense for the workflow.

Valuable members such as long term employees and someone who has not been around long can add a set of 'fresh eyes' and new blood idea into team. Once the team is intact, series planning sessions will be needed. Thus as usual, the first step with the 5S team will be educated those on what 5S is and the benefit of implemented the 5S system. Therefore everything need to implemented and monitor well, continuously improved was an important steps to make sure 5S system are running well and acceptable for everyone in company.

3.0 METHODOLOGY

This chapter discusses the methodology methods that use to get data in this research. Data collection from journals and article in the internet resources was a main precondition to complete this project report. The data collected must fulfill certain standards and requirements that meet the specifications of good data. In this study, this research conducted study on study on collected the 5S system. The analysis is done by journal, books, magazines, reference book at library and resources from the internet.

3.1 Research Design

Research design was a plan to collect and utilizing the data or information had obtained with sufficient precision or the hypothesis that can be tested properly and accurately. Eight elements have to follow to produce the final project or result outcomes. The eight elements of research are come out from: select topic, literature review, devise conceptual framework, decide research question, list of information needs and operationalize, research strategy decided, conduct the research and come to the last is finding the report.

Data collections have been divided by two types that are data *qualitative* and data *quantitative*. Data qualitative is one of the method are most appropriate which can be used for this case study. The one of the benefit of qualitative method which is can direct

get the information through interview to get the latest information about the company's performance, organization structure and their operation system.

3.2 Data Collection Method

Data collection normally had been divided by two types of sources: primary data and secondary data. Duval (2005) mentioned that primary data collection is the necessary data that is when a researcher cannot find the data needed in secondary resources. Secondary data is an existing data that has been exist somewhere else. In this case study, qualitative data collection method has been used. Qualitative data collection method was a way of method to use for this study. Qualitative data may give a depth of understanding in terms of the inner part of the company working environment. Primary data are represented we need to collected by run through interviewing and observation. Other than that method, secondary data collection also used for the study purpose. There are two types of data sources that had used to obtain the necessary input for further and depth analysis of study. Besides that, book and journals are also has been used to find the information regarding to these research. Data collection methods of qualitative research that had been used in this case study are through textual data utilized, visual material oriented, online material and electronic resources.

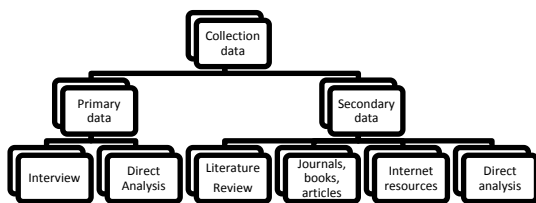


Figure 1: Data Collection Method

3.2.1 Primary Data

Primary data collections involve the data which is collected by the researcher. Normally the information is obtained directly through from first hand sources that is interview by face to face or observation the event. This data collected for a specific research need and customize the collection procedures. Primary data are used to collected data for specific task.

The figure 3.1.1 shows that the primary data has been divided into two types that is interview and directly analysis, directly analysis also means observation. Data collection methods and analysis techniques are included in the case study method. It brings the opportunities to triangle and figure up the data in order to strengthen the research findings and conclusions.

i. **Interview**

Interview has many advantages that is get the valuable information can be gained from the participants because of the position that they hold on either in financial, storekeeper, manager, or administrative realms. On this study, the researcher are going through the interview section with the Mr.Arif Osman to get more information and the gained the information about the 5S practice in the organization. The informant has provided overall view of an organization relationship the 5S system. Through the interview section, more depth information can get for this research, such as at the early stages of the implementation and problems encountered. The data collection through interview method are begin with more assumption that the participants' perspective from meaningful, knowledge, and are more capable to make explicit.

ii. **Observation**

Observation is a method which an individual collect the data first on programs, processes and being studied. The researcher is observing the activities and the working place directly. Thus observation approaches are allowing the evaluator to learn and get something about the participants or staff may be unaware of what they are unwilling or unable to discuss during the interview. Observations are reserve the every single action of the event or people and get some information from the behavior of that people or event. Through the observation from the job activity get know the process of the job flow and the details of the job scope.

3.2.2 Secondary Data

Secondary data is an information resources that has been collected or search from the other alternative. The resources such as literature review, journals and books, internet resources, and direct analysis. The application of secondary data has been used on this research, much information has been search and find about the latex supply and the natural resources through internet resources that had been existed. This research gets data from the literature review from the journals and articles that different author in the internet resources and books. The whole information and data collected is vital essential to ensure that the research can be done and complete. The secondary data to be done purposely for making a comparison between the actual world and the thesis based on the theory on books. Thus,

secondary data collection was been used to complete this research.

3.3 Data Analysis

Data analysis is a process of inspecting, cleaning, transforming and modeling the data with the goal of highlighting the useful information, suggesting conclusions and decision making. So data analysis has multiple approaches and encompassing a diverse technique under a variety social science domain. Thus, data mining is a particular data analysis technique that focuses on modeling and knowledge discovery for predictive rather than purely descriptive purpose. The terms of data analysis also used as a synonym for data modeling. Data analysis is a process which is within several phases can be distinguished like data cleaning, initial data analysis which is assessment of data quality. Main data analysis is the answer the original research question, and the final data analysis are the data necessary additional analyses and report (Ader, 2008). Data integration is a precursor to data analysis and the data analysis is more closely linked to the data visualization and data dissemination.

4.0 FINDINGS AND DATA ANALYSIS

In this chapter will discuss about the data analysis and information that given by the interviewer. The data and information that get are included finding the information, company background, objective of 5S in Faber Medi-Serve SDN.BHD, the slogan and policy of the company. Beside this, the information collected also include the benefit of implemented the 5S system in the company.

4.1 Company Background

The data analysis is relevant about the Faber Medi-Serve SDN.BHD which is located in Hospital Perlis, was a small outlet out of 100 branches in Malaysia. It was only one company who provide the wellness facilities and management for the Hospital Perlis. Beside this, it also provide a complete one-stop solution which is included the Clinical Waste Management (CWMS), Bio-medical Engineering Management (BEMS), Building and Facility Engineering Management (FEMS), Cleansing and Janitorial (CLS), and Linen and Laundry (LLS) to help customers optimize the use of their resources and assets and concentrate on delivering the value optimum to their customers.

The company has they own 5S organization system; below was the figure of the organization chart.

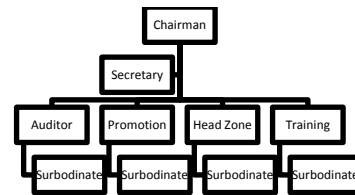


Figure 2: Organizational Chart of FMS.

4.2 Committee of 5S in FMS

Committee of 5S in FMS was officially established on 3rd March 2011. The committee was form by eight people which is included the Chairman. It is a supplement committee that responsible to support and control the implementation of 5S system in the organization. The responsible of the 5S committee to the FMS are as below:

- i. Planning the activities that will run in the organization.
- ii. Assist the zone department carry out the 5S activities.
- iii. Monitor the progress of 5S activity in the organization.
- iv. Advice the zone department that facing the problems regarding to the 5S activities.
- v. Find the way to improve the 5S activities
- vi. Conduct the periodic inspection of every part and make a report for the improvement.

4.4 Policy of 5S System in FMS

Faber Medi-Serve Sdn.Bhd is committed practicing and maintaining a high standard of 5S principles at the workplace through self-discipline, teamwork and creativity to:

- i. Achieve the safe and healthy working environment.
- ii. Eliminate the waste
- iii. Increase the productivity
- iv. Achieve the quality services to the customer

The objectives were set by the Chief Executive Officer in 2008, to make sure every worker has to practicing 5S system and achieve the organization goal.

4.5 The Advantages of 5S System in FMS

The practicing of 5S system will bring the benefit and positive impact toward the organization management. It is including the aspect of cost reduction, stock or inventory control, maintenance and business systems and processes. According to the Mr.Arif Osman, there were some positive effects that showing out after implemented the 5S system in the organization. The positive impact such as:

- i. *Improve the image of the organization FMS*
People are more understand about the organization, and increasing the collaboration business with people, worker are more happy working in the neat and tidy environment.
- ii. *Reduce customer complaints*
The efficiency and effectives of the worker help improve the productivity of work, the lead time to deliver the product is short, it satisfied the customer need.
- iii. *Improve spirit of teamwork among staff*
With the running of 5S activities, it increases the relationship among the staff and the spirit of teamwork is increasing from day to day.
- iv. *Optimum use of the department space*
With practicing of 5S, throw out the unwanted and unused thing in the workplace and arrange it. The zone departments gets more free space, all thing equipment and tools are placed well make the worker are easy to find the equipment with the labeled.
- v. *Establish clear standards of work*
The nicely document arrangement and equipment shows the effect of 5S before and after launch.
- vi. *More effective in controlling the job scope*
Staff will more easy to control the job scope, what they need to do and what they want to do.
- vii. *Reduce the cost*
With the health and safety environment, it will reduce the accident happen. By reducing the accident happen, thus is directly reduce the compensation to the worker. Thus it also reduce the risk and dangerous happen onto the worker in the working environment.
- viii. *Make the workplace more clean, neat and tidy*
By practicing of 5S system, it reduces the rubbish and get rid all the dust. Thus produce the healthier working environment, make the workplace more clean, neat and tidy. Spirit to work is increasing.

- ix. *Increase the productivity and quality of workplace*
With the best environment provides, it increase the effectiveness and efficiency of the organization among the worker.

5.0 DISCUSSION

Through this study, researcher realizes that there are many benefits after implement the 5S practice in the organization. The 5S practice helping keep the working environment safety and health but it also help in eliminate the waste and keep the equipment and tools orderly. Worker will be more satisfy working in this environment and increase the productivity, efficiency and effective in serving the customer. The key factor success of 5S practice in an organization was the behavior of the worker to follow the rules. Other than that the involvement of top management and all staff supporting and commitment make this system are launch successfully. Have a well and effective planning the system and training are given to the staff.

6.0 RECOMMENDATION

5S system involves small cost to implement in an organization. Researcher suggest that this 5S system should be implement in the small medium enterprise in order to make success their organization in term of save cost and increase the productivity. Besides that, research suggest that the organization whose implement the 5S should keep update with 7S to make their organization more competitive and efficiency. And doing more researches at the same time to keep updates the performance of the organization. Or try referring the other organization as a depth study to improve the inner problem in the organization and encounter it with the better solutions.

7.0 LIMITATION

The limitation of the research is the finding the latest 5S system journals and article. There just a few journals can found that related to the researcher study. Some of the method in the journals may not be suitable for the researchers study. Beside this, the time constraints in doing the study, there are lacking of time to make a good research, the approve letter from the organization are taking a lot of time to get the confirmation and waiting for reply.

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