

ORIGINAL ARTICLES

Case Report: Experience of 5S Implementation

¹Shahryar Sorooshian, ²Meysam Salimi, ¹Shanthi Bavani, ³Hasti Aminattaheri

¹Business School, Taylor's University, Malaysia

²Graduate School of Management, Management and Science University, Malaysia

³Department of Mechanical and Manufacturing Engineering, University Putra Malaysia

ABSTRACT

One of the major challenges of business leadership in this millennium is to manage the quality of the work environment. 5S is known as an extremely effective technique to manage the work environment quality. In this study, the experience of implementing a 5S program involving the real case practice is presented, specifically the influence of 5S on some basic work environment problems and the compensation power on the choice of implementation of 5S.

Key words: 5S, TQM, implementation, Experience, Report.

Introduction

TQM (Total Quality Management) is an approach in management that began in the 1950s and its popularity has been growing since 1980s (Wong *et al.*, 2010). Total Quality amounts to the attitude and the culture and structure of an organization that intends to provide customers with services or products that satisfy their needs. The culture needs quality in every aspect of the operation of the company with the processes conducted in the right manner the first time and waste and defects are eradicated from the operations. TQM is an approach through which the employees and the management can be involved in the constant enhancement of the manufacturing of products and services. It is a mixture of quality and management tools targeting the increasing business and decreasing losses owing to wasteful practices (Andersen *et al.*, 2004).

5S is one of the TQM tools and was firstly introduced to companies in Japan in the early 1980s. Now, many agencies in the Public Service and Private Service practice 5S fact. 5S is a methodology or tool through which the management can create an environment where quality work is comfortable, clean and safe in the organization and it can ensure the compliance to standards and will further foster continuous improvement (Okhovat, 2007). 5S management ensures the efficiency and effectiveness to achieve the characteristics of quality in the workplace as follows:

- i. The work environment is clean, tidy and safe
- ii. storage and document management are more effective

To answer: "What is 5S?" We review Akhovat's writing (2007) to present each S of 5S, as follows:

Seiri: Sort:

Sorting items which are not necessary and segregating and disposing of goods that are not needed at work systematically are considered here. The sort of work that needs goods and is not required from the basket of goods in the workplace. Separation process is helpful in determining the necessary materials at the present or the future and should be stored in a designated storage area. Unnecessary items will be disposed. The benefits are

- Saving space
- Stock control and efficient products
- Searching time is fast
- Safer Workplace
- More comfortable working environment
- Easily detect the place / equipment / material damage early

Seiton: Set in Order:

Neatness: This means preparing the necessary items neatly and systematically so that they can easily be taken and returned in the original place after use. It includes preparing and storing neatly, easily collected and

stored back into place. Organizing and labeling was done after all the items that do not have to be separated. The composition of goods should be carried by the same group. The main objective is to develop economical use of space and the storage of goods is neat and orderly, and facilitates the process of locating and obtaining goods in the future. Some examples can be based on the application and give benefit to worker:

- The process works faster
- Errors and mistakes will be avoided
- Loss rate lower equipment
- The working environment will be more convenient
- Educating employees positive discipline
- Among employees to generate creative ideas
- Higher employee moral

Seiso: Shine:

Cleaning: Clean and inspect the work in details so that no dust or dirt is on the floor, equipments and the working environment. The purpose of sweeping is to remove dust or dirt that sticks on the floor, the machine at work or goods that have been sorted and arranged. A checklist should be placed to guide the employees on what to do in the future in this activity. Fundamental points, equipment, areas should be swept and cleaned at all times with an effective maintenance schedule. Some examples are based on application which can benefit the worker includes:

- Low-cost equipment failure
- Improved product quality
- The work environment is more comfortable and cheerful
- Workers continue to produce creative ideas
- High employee morale
- Safety at work

Seiketsu: Standardize:

Uniformity: To establish standards of the best practice in the workplace and to ensure that the standards are complied and to guarantee that the workplace is clean and tidy at all times. Examples of storage of equipment and documents that is clear. Uniforms can only be done after sorting the activities, collated, and the sweeping was completed. Maintaining a clean uniform or work at home is important so that every effort is made in the three previous activities is not in vain. Activities conducted by the nature of each worker would instill a sense of belonging and love for cleanliness in the workplace.

The user is required to be followed by employees to guarantee the required quality and standards been reached. Some examples based on application and benefits to worker include:

- Low maintenance costs
- Low overhead costs
- Increased process efficiency
- Increased production quantities
- Educating employees positive discipline
- Workers continue to generate creative ideas
- Increasing workers' skills
- Employee loyalty to the organization
- Enhancing the image of the organization

Shitsuke: Sustain:

Always Practice (Shitsuke): Train employees disciplined for practicing 5S system continuously so that the habits and culture within the organization will include

- Low production costs
- Increased labor productivity
- Quality products and services
- Get a Certificate of increased 5S
- Zero Accidents at work

Benefits:- Workers will be more creative and innovative

- Increasing workers' skills
- Employee loyalty to the organization
- High teamwork

This paper presents the results and findings obtained from the observation of the environment at Milad Company on March 2012. Milad Company is a small-sized company fully owned by the private sector, with 15 employees. This company works in marketing service and its main activity is to act as a business consultant industry. Data analysis and presentation of the findings are based on the problem statement that was formed and reported in the next chapter.

Virtually, every week staff of the company goes to the compactor room or file room to find the “approval letter of undertaking” and “case consulting form” because most vendors need to claim to the company. Sometimes, they do not have enough data and they might lose documents. The problem will happen every day such as missing the letter of undertaking, vendors need to check any other chargers and the researcher needs to amend and then fax back. That is the problem that researcher faces; the effective using of 5S for white paper in file room. File rooms is the place that the problem is focused and can be solved through 5S method. The facility on that place does not have enough space and the environment is very crowded with a lot of boxes, files and other similar office equipments. The arrangement of the situation is extremely messy. For the management and the staff of the company, it is very difficult to locate the documents that need to be found. Now, the department has changed from level 2 to level 1. After consulting with experts, the management of the company realized that 5S is a technique which can help them to solve this problem and they decided to experience 5S in their company. The Authors of this paper also decided to report this experience and the findings of the effects of 5S.

Methods:

Methodology is a defining element to make sure that the obtained results are highly reliable. Therefore, the collection of data and its analysis should be in line with the objectives of the study (Creswell, 2009). This will result in a reduction of the inaccurate and an excessive amount of information.

Research design also discusses the proposed design for tasks such as sample selection and size and also instrumentation or data sources. In the purpose of this study, the research design that has been used was descriptive and qualitative data. Descriptive research is conducted to discover and determine the characteristics of a population or phenomena (Frankfort-Nachmias and Nachmias, 2000).

The research design is a procedure of analytical steps of the network through informal processes scientifically. Overall, the study design allows the researchers to conduct studies and provide the researcher with the opportunity to discover the appropriate method to carry out the research. Through the design, the researcher will determine how the variables are controlled.

The design for this research was carefully organized in order to aid the researchers to collect the data required for such study. Because the study is a research field whose purpose is to understand the improvements of white paper in files room, the research design was chosen in the form of observation research.

The observation method was selected since its reliability is high and also it is a cost efficient process. Scientific observation is a process of observing and recording the behavioral patterns among the people, occurrences and objects without asking questions or communicating with them (Frankfort-Nachmias and Nachmias, 2000). Applied research is carried out in cases that the decisions are to be made on the particular real-life problems or to decide upon a specific course of action of policy (Davis and Cosenza, 2000). In this research, applied research method will be employed to get information about the improvement of the white paper in file's room at TL Offshore.

As in 5S practices it is generally known; the File Room is a protected environment and is exclusively prepared for archiving, storing and shredding of the documents. Providing a personal first class service with collection and retrieval are among the other uses of the file room. The time of the staff can be saved by having an effective and organized method of storing the files with our office storage solution. That can hold more documents due to increasing the legislation through our secure document archiving services.

Also the white paper is in 5S practices known as it is business benefits documentation that initiates an issue confronted by those who read it and consequently, justifies why a special method for solving the problem is proffered. IT usually proposes an answer to a problem; however, it can also introduce a novel issue and how to conduct a technical task. Among the significant breadth of content available to IT professional, vendor white paper are more frequently read than reviews, analyst reports, product literature, web site, articles or case studies.

In this paper, all the data are original and were collected by the researcher. The data is collected mainly from the feedback of the observations. A great range of different information about the behaviour of objects and people can be observed. The greatest advantage of the observations studies over survey is the fact that the data will not be distorted, inaccurate and there will be no response bias mainly due to the memory error, social desirability and so forth. Figure 1 shows one of documents for implementation comparison of 5S implantation.



Fig. 1: 5S Implementation experience

Results:

This organization embraced the idea of 5S and without any complaints or objections has employed this system ever since. Nevertheless, numerous grave issues have been observed while the study was being conducted. Thus, as outlined below, the reports to the company managers highlights the need of 5S.

- File are not arranged in order, are not easily accessible and are not stored in a systematic manner
- There is no plan or layout of floor plan file to be displayed.
- The Movement file is not recorded whether the file uses the docket or file. Normally the file is not reorganized in the original place after use.

Specifically, the comparison of 5S, prior and after the implementation shows that each concept of 5S helps to resolve the problem and the lack that the company had faced before. The following lines presents the problems there were resolved as a result of the 5S concepts implementation:

1. Sort (Seiri) – Take out unnecessary items & dispose
 - ✓ A lot of unnecessary things were at the workplace
 - ✓ Unnecessary items were disposed, but no right away.
2. Set in Order (Seiton) – Arrange necessary items in good order for use.
 - ✓ Employees often spent time looking for necessary things.
 - ✓ Necessary things were arranged but not in systematic order (not easy to retrieve and use)
3. Shine (Seiso) – Clean your workplace completely
 - ✓ Workplace as well as the machines is dirty and untidy. Many things were scattered around.
 - ✓ Workplace and machines were partially cleaned (Center and surface only)
4. Standardize (Seiketsu) – Maintain high standard of housekeeping.
 - ✓ No attention was given to keep workplace neat and tidy
 - ✓ Workplace was tidy but not completely clean.
5. Sustain (Shitsuke) – Do things simultaneously without being told or ordered.
 - ✓ No work discipline. People did what they like.
 - ✓ People followed rules, but just to start work on time, without enough preparation for the work.

5S solved all mentioned problems. Generally speaking, management of the working environment can be more uniform and systematic when practice 5S. 5S practices can help companies to plan and implement efforts in order to create a workplace environment that is conducive to improving the quality of services.

Several critical success factors of 5S implementation have been observed while conducting this study therefore; the researcher proposes the following recommendations:

1. To make the 5S practices more influential the top management are required to fully support this activity all through the company. However, in the company under study, it was evident that the top management was not fully embracing the 5S practices and their reason was mentioned as the amount of the time and money that would be required to implement the proposed activities in the 5S. In order to make the top management aware of the effectiveness of the 5S, they have to be shown the performance of product quality of this approach.

2. The organization should institute a system of benchmarking with other companies which are successful and make reference on a regular basis with the member of the Quality Team which will provide assistance to the companies in terms of further comprehending its vision and mission.

3. The involvement of all employees in the all departments in the program 5S. All staff should understand the five good reasons 5S program should be practiced at the workplace as it will result in a clean workplace with higher productivity, having a high quality, reducing cost, to ensure timely delivery and consequently, it is a safe workplace.

Also from this experience of 5s implementation, it was found that:

1. 5S concept is easily understood by everyone because this only requires knowledge of the conventional discipline and high commitment. This practice can be implemented at all levels.

2. 5S will foster teamwork, discipline and will increase the sense of responsibility and compassion for company.

3. 5S will create productive work environments and clean and secure the delivery system towards a world-class.

4. Ongoing commitment from management and involvement are the cornerstone of all citizens for the successful implementation of 5S practices.

5. 5S is an ongoing need to maintain excellent service delivery performance.

6. Assessment of Internal Audit will normally move the organization to continually repair the quality and effectiveness of services delivered to customers. Activities are planned and ongoing audit to help people to be prepared to face the real 5S audits by the MPC to obtain and maintain certification of 5S.

Conclusion:

This paper intends to presents the experience of 5S implementation; specifically, the purpose of the study is to closely examine the effects of implementing 5S. The limitations of this study are in terms of its scope as this study is related only to one organization.

Some studies focus on the planning or implementation process, some see the issue from the organizational managers (or organization) perspective and some others see it from employees' perspectives. Some articles also talk about the general issue and some others talk about the short-term and long-term consequences of implementing such programs. The conclusion on such topics needs a very deep review of the related literature as well as enough theoretical and practical experience about the topic. This paper is just a simple representation of basic information gathering about the concept of 5S; In addition, in order to further understand the issues better, one case were brought, summarized, and discussed.

Acknowledgement

Authors thank top managers of Milad Company because of their helpful support.

References

Andersen, H., G. Lawrie and N. Savic, 2004. "Effective quality management through third-generation balanced scorecard." *International Journal of Productivity and Performance Management*, 53(7): 634.

Creswell, J., 2009. *Research design: Qualitative, quantitative, and mixed methods approaches*, Sage Publications.

Davis, D. and R. Cosenza, 2000. *Business research for decision making*, Duxbury Press.

Frankfort-Nachmias, C. and D. Nachmias, 2000. "Research methods in the social sciences." New York.

Okhovat, 2007. *step by step 5S implementation*. Tehran, nashre no.

Wong, C., J. Sim, C. Lam and S. Loke, 2010. "A linear structural equation modelling of TQM principles and its influence on quality performance." *International Journal of Modelling in Operations Management.*, 1(1): 107-24.