

A Review on 5S Implementation in Industrial and Business Organizations

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Abstract: 5S is a systematic technique used by organizations comes from five Japanese words: Seiri (sort), Seiton (set in order), Seiso (shine), Seiketsu (standardize), and Shitsuke (sustain). This system helps to organize a work space for efficiency and decrease wasting and optimize quality and productivity via monitoring an organized environment and use visual evidences to obtain more firm results effectiveness. As importance role of 5S implementation in today's organizations, this study aims to review previous studies about benefits of 5S implementation and its efficiency in organizations. Consequently 5S can support the objectives of organization to achieve continuous improvement in performance and productivity.

Key words: 5S, quality, efficiency, implementation, organization.

I. Introduction

5S system is a method using for set up and keeps quality of working environment in an organization. Such organization can organize and manage companies which require less space, human effort, time, quality and capital to make products with less faults and make a workplace well ordered, disciplined and clean [1].

5S is a system to decrease wasting and optimize quality and productivity via monitoring an organized environment and use visual evidences to obtain more firm results [2]. The columns of 5S are sort (Seiri), set in order (Seiton), shine (Seiso), standardize (Seiketsu), and sustain (Shitsuke). In routine activity of every organization, daily works that support company and neatness are fundamental to an efficient activities flow [3].

5S is an idea that reshapes how you think about a workplace and provides a foundation for significant improvement but it is not simply about cleaning up a shop floor. The initial stage in 5S is deciding what is essential in the work environment and what is not. The second stage is put the things where they provide the best support for the functions. The third stage is inspection, repairing and cleaning things to find and remove the root causes of damage and dirt. The fourth stage is team working and the members must have consensus on normal and new way of work. The fifth stage is personal discipline to follow the standards and to perform the personal characteristics, cleanliness and neatness of the organization.

Regarding the importance of 5S implementation in today's organizations, this study aims to review previous studies about benefits of 5S implementation and its efficiency in organizations.

II. Review on 5S

5S is a useful method for founding an organization and spread out a design and can improve communication and help employees to develop their characteristics to decrease downtime, lead time, inventory, defect, injury and associated costs [4].

Result of the study indicates that 5S technique is an effective way to improve health and safety standards, environmental performance and housekeeping [5].

5S is a method for development of companies, change and training. Hirano in 1995 regards 5S as an industrial practice that distinguishes an organization from the others [2]. According to the Japanese organisations 5S have two components, a high level of management and organisational system with complexity meaning and it translates to perfect performance and the other one is management provision tools position [6].

Even though the 5S housekeeping program aids production [7] but the 5S technique is one of the most known in industrial and business environment and there is few proofs about its adoption in organizations [3].

Other studies still accept 5S as a method of housekeeping [7-10], however there are other ideas that believe 5S is a supportive way for Lean and TQM [11-14].

From the quality management point of view, order and cleanliness have been considered as a part for continuous improvement [15] and also a point to start continuous improvement and more advancement in organizations [16]. 5S can link with total productive maintenance (TPM) [17] and Japanese management approaches such as TPM, JIT and TQM [6]. Generally, the success of 5S implementation depends on organisational characteristics [18] as this mentioned in many surveys [19]. Survey of one factory in Iran supports pervious findings in this field and indicates that 5S execution provides better condition for implementation of TPM [20]. As it is mentioned in several studies, the 5S method is recorded as a way for

improving health and safety standard and performance in a holistic operation with high level of efficiency [21] and also helps improving data management system in factories [22].

On the other hand, there is correlation between the 5S and TQM which further approve the role of 5S as a training tool for TQM and also the need for a sound approach towards TQM [23]. There is a considerable decreasing in the rate of injuries in the companies where the objective is improving safety through the 5S practice. [24].

The 5S practice is beneficial for every organization, because it helps everyone having a better life [25]. In fact, many successful organizations in the world have already included some aspects of the 5S in their daily activities without complete awareness of its benefits [26]. Indian companies are informed about the quality improvement requirements, although disciplined approach is not yet in place and improvement efforts are not enough to remove weaknesses specially in term of quality [27]. More investigation is needed on implementation of the 5S as an improving tools in a business section and some items like company size and structure could affect application of the 5S and its effectiveness [28].

Actually, there is not much difference between ISO 9001 requirements for implementing quality management system and 5S rules which can be joined by extending the ISO 9000 pattern to combine related 5S rules [29]. This system is beneficial for any workplace to make high quality products and services [30].

5S is applied in most of the factories in manufacturing sections with priority compare to other sections with different ways which can be attributed to the maturity of the 5S programme [31]. Mixing lean manufacturing initiatives through 5S with safety yield safety results that are well aligned with the rest of the organization [8].

Ho in 1998 says the 5S practice is the key to productivity and quality and he also determines the 5S audit methods and reports to adapt and adopt to the business environment via the training sessions and case studies carried out by the industry department. Furthermore he realized that the 5S practice is very beneficial due to its helps for everybody to have a better lifestyle in the organisation [32].

Hamzah believes that the 5S is not new and we have had it for long time. We need the 5S at our workplace because many people do their things without thinking about it. In addition 5S can be a reflection of our behavior. If we have a consideration to 5S, the majority of our routine problems that we face in everyday works could be solved [33].

Hubbard in 1999 showed that orderliness which is one of the five pillars of the visual workplace, intends to eliminate three types of waste: searching waste, difficulty-of-use waste, and the waste of returning items to their proper place [34].

Ho in 1997 presents Audit Worksheet for 5S which is a practical tool for 5S implementation. He also believes Japanese 5S fundamentals that must be used for continuous quality improvement [35].

A useful environmental tool for organization management is 5S, which comes from lean manufacturing process. The 5S practice simplifies the workplace and maintenance system's procedures, decrease waste and non-value added activities. It also improves quality, efficiency and safety. It is the most effective tool of control, which at least reduce or totally avoid different types of pollutions [36].

Ho in 1996 defines five levels of the 5S implementation; top management commitment, a promotional campaign, keeping records, 5S training and evaluation of the results [37].

III. Conclusion

The most important barrier for implementation of 5S effectively is poor communication. Techniques of communication and their efficiency are seldom evaluated and communication faults rarely addressed in an industrial workplace. Poor communication can cause wasting resources, time and money, and lowering moral amongst employees. The results of evolving communication systems in an uncontrolled fashion in industries or business could be confusing and complex. There must be an applicable way for using 5S as an improvement tool for communication system.

The surveys indicate that there are difficulties in the effective 5S implementation. Another significant barrier is the space between managerial level and shop floor employees and the poor training and awareness of 5S. Since some critical decisions of 5S activities, including time and budget performance must approve and support by management, therefore more cooperation is recommended during implementation period [6].

It is concluded that 5S key of success is training. 5S implementation is not possible without proper training and employees are not capable to actively standardize the 5S [26]. Organization should pay attention to this fact that resistance to change is one issue which will be occurring during 5S implementation. Therefore, it is believed that continuous training is the key applying to change the organization culture, and assessment should focus on improvement and progress regarding all input from the organization until complete establishment of 5S system [36].

It is obvious that the target of 5S application is vast and diverse and when effectively implemented, the business improvement can be surprising. However, the total benefits of 5S cannot be imagined in industries and business, until the barriers associated, fully understood, addressed and removed.

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