

Application and Usefulness of 5S and KAIZEN for Library Space Management

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Abstract: This paper will briefly discuss on the kaizen formula and 5s of Japanese strategies for the improvement in space management of any organization. This paper explains about the various aspects of kaizen, its meaning, history, PDCA cycle and 5s in detail. The 5S are sort, straighten, shine, standardize and sustain. KAI means change, ZEN means good that is change to good, its definition tell us about it is a small improvement bring it by every employee on daily basis that brings continuous improvement. 5S engages people through the use of standards and discipline. 5S is the abbreviation of Japanese terms with five initials of S. These are 1. *Seiri* 2. *Seiton* 3. *Seiso* 4.*Seiketsu* 5. *Shitsuke*. The first step Seiri means sort, that is sort out and separate that which is needed and not needed in the area of the library organization.

Keywords: Kaizen, 5s, PDCA cycle, TQM, Gemba,

1. Introduction:

5S and kaizen are the two basic methods of the Total Quality Management(TQM). 5S engages people through the use of standards and discipline. It is not just housekeeping, it is more than that of following the standards and discipline to manage the organization. Space management and cleanliness and other continual improvements are achieved by upholding and showing respect for the Gemba (workplace) every day. The 5S methodology is a very good philosophy that goes beyond just making workplace clean. **Sort (Seiri):** Sort out the needed and not needed in the area. Anything that is not needed at the workplace is removed to be stored, disposed or destroyed. **Straighten (Seiton):** Arrange items are set in order that area needed so that they are ready and easy to use. Clearly identify the location for all items so that anyone can find them and return them once the task is completed. **Shine (Seiso):** Clean the workplace and equipment on a regular basis in order to maintain standards and identify defects. It also sets the standards that should be there in the *Gemba* daily. **Standardize (Seiketsu):** Repeat the first three steps of 5S on a frequent basis and conform the condition of the *Gemba* (working place) using standard procedures. **Sustain (Shitsuke):** Rules have to be maintained and its standard and continue to improve every day. Audits are done by the employee with the standard rules. Kaizen practitioners may get confuse with housekeeping or cleaning only. 5S is a simple way of installing discipline in the workforce at the same time motivating employees to creatively solve the problems at the work place. Kaizen is recognized worldwide as an important pillar of an organization long term competitive strategy. Kaizen is the practice of continuous improvement that is based on the following principles. 1. Good processes bring good results. 2. Manage by

facts and collect data. 3. Analysis the current situation and grasp matter. 4. Action should be taken to correct root causes of problems. 5. Work as a team. 6. Kaizen is every day business. Most important feature of kaizen is that big results come from many small changes accumulated over time; it has been misunderstood as small changes.

2. 5s steps:

- ❖ Sort: Sort out the needed and not needed in the area. Anything that is not needed at the workplace is removed to be stored, disposed or destroyed
- ❖ Straighten: Arrange items are set in order that area needed so that they are ready and easy to use. Clearly identify the location for all items so that anyone can find them and return them once the task is completed.
- ❖ Shine: Clean the workplace and equipment on a regular basis in order to maintain standards and identify defects. It also sets the standards that should be there in the Gemba daily.
- ❖ Standardize: Repeat the first three steps of 5S on a frequent basis and conform the condition of the Gemba using standard procedures.
- ❖ Sustain: Keep to the rules to maintain the standard and continue to improve every day. This is done using audits which are done by every employee.

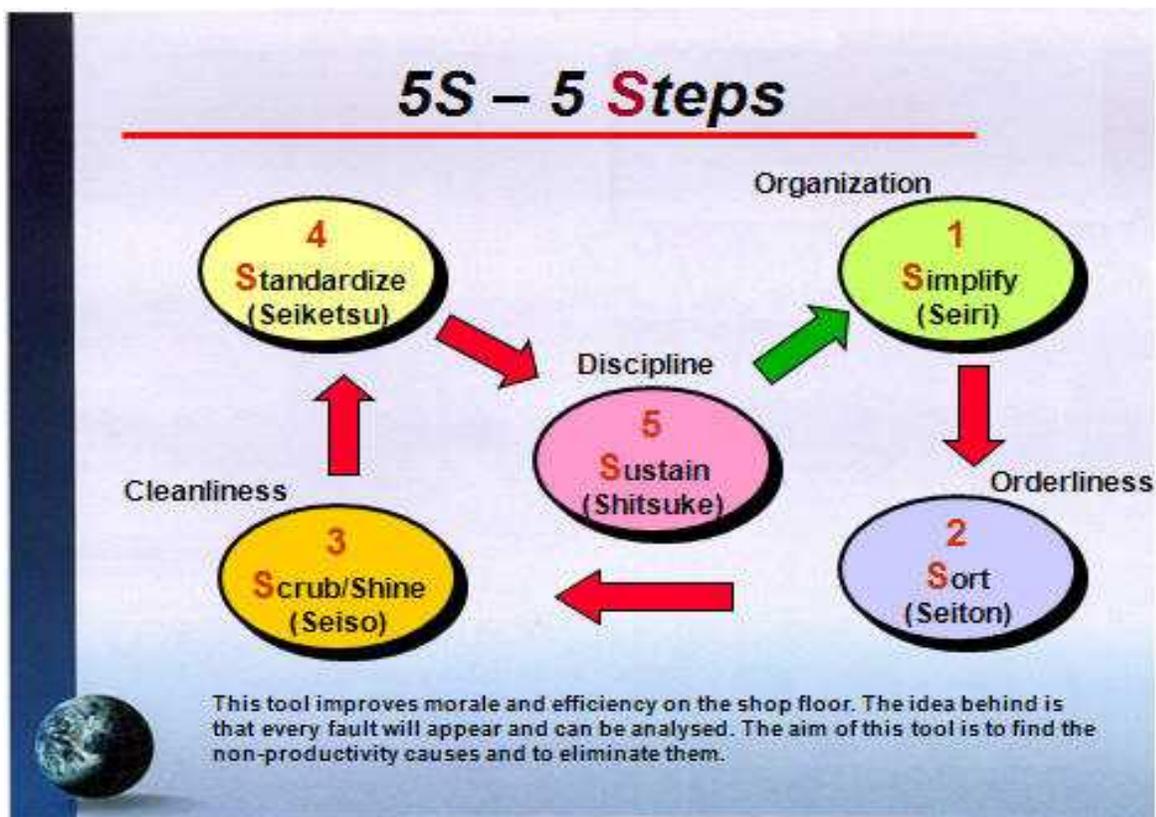


Library preparation for a 5S program: 5S procedures are a starting point for any kaizen program because of the following:

- Sort out the needed and not needed in the library, mainly the withdrawn and weed out books are removed away. It created the lot of Space in the library to keep the other things.
- Straightening the items like file and registers made us to provide place for each and every thing by giving numbers to each one. This procedure also made some place to accommodate some more files and registers in the same area.

- The main Gain that is achieved during the exercise help to get things from the general work place. It makes cost benefit and also arranges for some more space for the particular section of the library.
- Training should be given to all the workers to drive 5S initiative can be done within a short time. Inter personal relationship and communication developed rapidly due to the frequent training programs.
- Team Spirit is achieved when workers are involved in any joint activity. The Librarian should select and prepare a small team for the 5S program before it can start. There are several steps that must be taken when starting a 5S program. They are management decision, getting buy-in from staff, team selection and training.
- Totally the 5S program makes any organization to clean neat and tidy environment along with the customer satisfaction.

3. 5 Steps in 5S in A Diagram



Benefits of 5S process for any organization like Library: the advantages are

- Give standards and disciplines to the employees.
- **Space reduction is the main advantage.**
- Inventory reduction leads to capital reduction to some extent.
- Clean and pleasant work environment.
- Health and safety is enhanced.

- Production or services increases due to flow management.
- Quality improves as abnormalities are identified and rectified.
- Economic benefit is high when this is compared with the new building.
- Cost effective in the implementation.

5S and kaizen are the Total quality management tools that bring customer satisfaction. TQM serves as best tool to bring zero defects and zero effect. Our Prime Minister Honorable Narendra Dhanmodar Modi in his Independence Day speech, he mentioned about Zero defect and zero effect. This is basic Taranga mantra of TQM. Make India self-sufficient in making all electronic goods instead of importing it. “We should manufacture goods with zero effect that they should not have a negative impact on the environment” (Narendra Modi on August 15 2014.)

4. Comparison of 5S and kaizen:

S.No	5S	5S Explanation	Kaizen	Kaizen explanation
1.	Seiri	Sort: Sort out the needed and not needed	Identify the problem (Plan)	Acknowledge the problem openly and take action and correct root causes of problems
2.	Seiton	Straighten: Arrange items that is give place for each thing.	Focus on customer (Do)	Customer satisfaction is main and make improvement in it.
3.	Seiso	Shine: Clean the workplace regulary	Openness and talk (chek)	Fact finding in the sections and interpersonal relation improves
4.	Seiketsu	Standardize: Repeat the first three steps	Team work to execute good process (Act)	Create big team work and manage projects cross functionally.
5.	Shitsuke	Sustain: Keep to the rules to maintain the standard	Kaizen for every employee	Develop self-discipline and kaizen for every employee and everyday business.
6.	Advantage	Space reduction	Advantage	Sharing space which is available.

Kaizen for library management: Kaizen is a system of continuous improvement in quality, technology, processes, company culture productivity safety and leadership. Kaizen was created in Japan following World War II. It comes from the Japanese words KAI which means “Change” and ZEN means “Good” that is change to good. 5S and kaizen makes whole system to work in a systematic procedure. System improvement is the basic improvement of any total quality management policy.

5. Kaizen Principles and its impact on the Library:

- ❖ Focus on customers and make improvement unceasingly.
- ❖ Acknowledge problem openly and take action and correct root causes of problems
- ❖ Promote openness and talk with data and manage by facts.
- ❖ Create work teams and see current situation and also grasp matter
- ❖ Manage projects cross functionally and good process bring good results
- ❖ Develop self-discipline; inform every employee and kaizen for everyday business.

Kaizen is a system that involves every employee - from upper management to the cleaning crew. Everyone is encouraged to come up with small improvement suggestions on a regular basis. This is not a once a month or once a year activity. It is continuous. Japanese companies, such as Toyota and Canon, a total of 60 to 70 suggestions per employee per year are written down, shared and implemented.

Focus on the readers and customers who serve the library and made some improvement in the process. The problem faced by the regular readers where spoken openly and took action to solve the problem. Open meetings where conducted to the users to talk freely on the problematic issues and this enables the librarian to find out the facts. Team work was enhanced by the management to promote good process and as a result kaizen brought higher improvement in circulation of books and usage of e journals was also enhanced. The overall appearance and space allotment for bags and foot wares were also managed carefully with kaizen.

For example: Due to Kaizen, the Isetan management and union hereby declare that, sharing the same workplace, we will join hands to develop our natural personalities and capabilities to the fullest extent in our daily lie and to create an environment conducive to development. Sharing the same place in the library is done in the technical section and acquisition section.

Another example: NUMMI (New united motor manufacturing Inc.) and a joint venture with Toyota has taken up Kaizen process. The union has accepted the management role in Kaizen and workers participation in Kaizen, which leads to upgraded work standards. This brings intercultural communication and better performance and filling the gray gaps is done by the kaizen in the library also in-between the section officers.

5.1. Kaizen instruments and its usage in library:

- Quality control circles
- Process oriented Management
- visible management
- cross functional management (CFM)
- just in time (JIT)
- Kanban
- Statistical process control
- PDCA cycle

These are the few instruments which are very useful to implement the kaizen in the library. Quality Control Circle: In 1950 Dr. Deming delivered his lectures on statistical control and use of control charts and sampling for quality checking to union of Japanese Scientist and this lead to the growth of quality circles. By 1962 Japan has developed fully evolved QC circles. This

consists of groups of volunteers led by a senior shop floor employee whose task is to resolve local quality problems as part of the countrywide pursuit of the national quality goal.

Process oriented Management: (POM) Kaizen managers or team leaders are overly oriented towards the process achievement of the required results.

Visible Management: This is the consequences of POM. When the team leader or librarian involves in kaizen, he instructs members openly and they are said to be visible. Visible management helps employees to maximize their productivity and holistic qualities.

Cross functional management (CFM) is a formal part of fulfilling kaizen plans, this helps in interdepartmental cooperation and coordination. Just In Time (JIT) is the production system developed by *Taiichi Ohno* at *Toyota*. Just in Time has enhanced the library services like current awareness service, article alert service, and content display service and SMS alert service. Kandan is a manual production scheduling techniques controlled by kaizen operator.

Statistical process control (SPC): Deming introduced this system in USA in 1950. In Japan It was that quality was everyone's responsibility, quality should not be targeted like sales because targets are manipulated.

Deming PDCA cycle is a kaizen instrument that brings endless improvement in the team work. Deming introduced this system in USA in 1950. In Japan It was that quality was everyone's responsibility, quality should not be targeted like sales because targets are manipulated. Deming- A four step problems solving iterative technique used to improve business process. The four steps are plan-do-check-act. PDCA cycle is a kaizen instrument that brings major affects both major performance breakthroughs as well as minor incremental improvements in the project or problems in the library and brings endless improvement.

PLAN: Look forward, identify and understand the problems that come in library. For example space problem in a library can be taken in to account. It is planned to create new mezzanine floor or adding the next adjacent room to the library by having a separate door facility within the library. This facility of mezzanine floor or adding room to library is a fruitful plan it has been approved after discussion in the meeting.

DO: Relevant action should be taken to solve the problem. New mezzanine floor has been created with little cost instead of building a new one for library.

CHECK: Monitor and evaluate effects and evaluate the problem solving technique. The execution has been checked and monitored.

ACT: Promote feedback to upstream teams work. The new mezzanine floor added to the library created 30% more space for the stacking section. This enabled the librarian to accommodate more books in the same library. Photo is attached for your better understanding.

6. Benefits of 5S and kaizen in Library building:

“We shape our buildings and afterwards our building shape us” *Winston Churchill*”.

- Space reduction is the main advantage of 5S program in the library. When sort is conducted in the library it removes the unwanted items and send some items for condemn. This creates some space for the new items.
- Working environment becomes cleaner and tidy along with the principle of each thing has its own place and any library staff can use the items easily and should place it back in the same place.
- Library circulation CAS and SDI service improved much. A new service like content distribution through email has been started by this program.
- Sharing the same work place has been improved because of kaizen process. In the library sharing the same place in the library is done in the technical section and acquisition section. This sharing the work place also reduces the expenditure on construction for some time. Thus reduces the economic burden to certain amount.
- Cost reduction has been visible in this type of quality management.
- Economic benefit of the company or institution is so high when compared this cost with the new building.

For example: In 1965 *Isetan* Department store one of the largest department in Japan (6000 employees), moved to a five day week for all employees. At the same time, labor and management agreed that one of the days off should be used for rest and the other for self-improvement. The Joint declaration of *Isetans* HR policy was as follows. Due to Kaizen, the *Isetan* management and union hereby declare that, sharing the same workplace, we will join hands to develop our natural personalities and capabilities to the fullest extent in our daily lie and to create an environment conducive to development. Sharing the same place in the library is done in the technical section and acquisition section.

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Planning new space is about creating a change to develop an entirely new service that can deliver better quality with improved responsibility and efficiency. The librarian must be provided with leadership quality through ISO standards like kaizen and 5S that brings great deal in utilizing all the staff and users and the space as well. In spite of planning a new building this 5S and Kaizen makes the library staff to create new space and to share the same space for different work with in the same building. A quality of academic library space has a number of important points. It is suggested (*McDonald 2000b-2004*). The important points of library buildings are functional, adaptable, accessible, varied, interactive, conducive, environmentally suitable, safe and secure, efficient suitable for information technology and have oomph.

7. Conclusion:

Kaizen in Japan is a system of improvement that includes both home and business life. It also includes social activities. It is concept that can be applied in every aspect of a person's life. 5S program and kaizen is a part of Total Quality Management, it help the library management to sort, to straighten, to shine, to standardize and to sustain all aspects of management. 5S help us to get space for the better utilization in library. Space reduction is the main advantage of the 5S program. This should be practiced in every body's life either in office or at home. Kaizen brings great development in the library. Sharing the same workplace by different section of library staff has been enhanced by kaizen. Cost effectiveness and economic benefit is high when compared to the new building construction.

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