

Implementation of 5s and Kaizen Technology: A Case Study

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Abstract - The purpose of this study is to implement some of the 5S and Kaizen Principles to assist small scale manufacturing organization to become more efficient and more productive. The paper on 5S and Kaizen Systematically categories, analyses and reviews methodically the published literature. In the frame of the case study, the 5S and Kaizen rules in the organization have been analyzed and implemented. On the basis of case study ,it can be stated that introducing the 5S and kaizen rules brings great changes in the organization ,for example, increasing of effectiveness and efficiency in the process, Improved visibility of the process, Improved Morales and safety of the employees, reduced delays ,searching time and dangerous conditions.5S and Kaizen is a powerful tool and can be implemented in any industry ,whether it is micro, small, medium or large enterprises.

Index Terms - 5S; kaizen; continuous; improvement; organizational effectiveness.

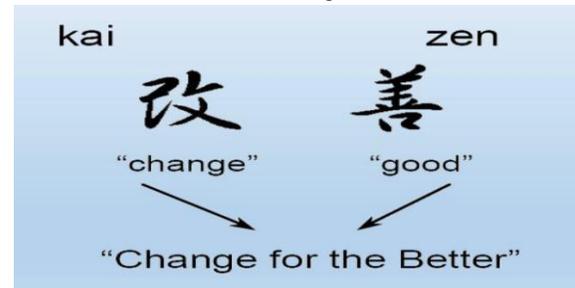
I.INTRODUCTION

In order to stay triple-crown, businesses should become additional economical, scale back waste and thereby scale back price.

The popular belief is that the japanese made-up the 5S Methodology as a result of the letter “S” stands for 5 Japanese words, that once translated to roman script, begin with the letter “S”. The 5S is that the form of 5 Japanese words that stands for Seiri (sorting), Seiton (set in order), Seiso (sweep), Seiketsu (standardise), Shitsuke (sustain). within the middle Nineteen Fifties, 5S was 1st employed in Japan within the producing sector (Korkut et al., 2009). 5S is that the start to the continual improvement. 5S implementation ensures continuous improvement in housework and ends up in higher setting and safety standards there's want of developing a typical language that's understood by all, so humans will communicate with one another within the company but 5S may be a follow that can't be

enforced while not a self-discipline (Pheng, 2001). several issues will be resolved by organizing the 5S Organizing 5S team can end in maintaining a top-quality setting within the firm. Quality setting includes each order and cleanliness 5S becomes more practical once it's integrated to management system . Support from management level is significant to own potential edges from 5S implementation. Homes, schools, communities and workplaces all of them will be improved by 5S activities.

A kaizen study is structured associated centered improvement project employing a team that is cross purposeful to boost a targeted workspace in an accelerated timeframe. In several Western corporations the word kaizen has become additional common because it indicates a method of continuous improvement. The word kaizen may be a compound word that involves 2 ideas, Kai (change) and Zen (good) for higher. Kaizen desires attaching nice price to the small print and customary sense to form each worker cleverer within the organization .



II. LITERATURE REVIEW

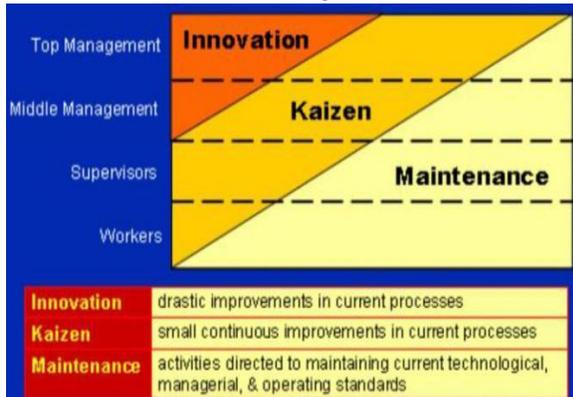
It is the primary ‘S’ and its main focus is to eliminate the excess things from the geographic point. Red tagging is completed to the things that square measure excess.

(Peterson and Smith, et al., 2001):The things that square measure often used square measure enraptured to a additional unionized space cargo area cargo deck cargo hold\hold\enclosure outside of the work area. Things that square measure fully excess square measure disposed.

(Peterson and Smith, et al., 2001) (Harrington, et al., 2000): “A place for everything and everything in its place” is that the phrase similar temperament for 2d S. It focuses on effective storage and segregation of things is finished Activities enclosed during this are labelling every item, use color for fast identification, store similar things along, and store totally different things along, golf stroke names and numbers on everything, painting floors, and use of rack or shelf and shadow boards for tools (Dudek-Burlikowska, 2006; Lancucki, 2001).

(Deniels, 1996; et al., Reid, 2006): Many industries will take pleasure in kaizen events as a result of it leads to increase of the productivity within the company and additionally it helps in manufacturing top quality merchandise. advantages from kaizen activities are often achieved with minimum efforts.

(Wickens, et al., 1990): Success of kaizen activities performed extremely depends upon the contribution of cooperation. each member’s role associate degreed responsibility has been delineated by taking an example of Nissan Motor Plant in Britain. Direct contact and communication between the worker and boss is essential for palmy implementation of kaizen activities within the organisation.



III. METHODOLOGY

UNIT OBSERVATION	
Total Income	10,000 Crore
Total Workers	6000
Enterprise	Organised
Literature	Not developed
Quality System	ISO ,5S ,Kaizen
Marketing Network Strategy	Nicely Developed
Consumer	Various Jewelry seller across India

Achieving targets is the biggest productivity, to achieve it we have to go through a strict action plan, proactive mapping of tags , proactiveness in habit to get useful of the 5S and kaizen system is must. Sincerity of following each and every steps of the systems brings and opportunity to expand, grow and explore the satisfying results of work expenditure .

IV. CASE STUDY

Reports are issued through the observations created within the production website so as to spot and take away the negativities moving the standard and that they are conferred to the highest management. during this study to see the performance of organization, performance factors were known by studies of literatures and experts’ opinion, judgement and confirmation. The performance factors ar qualified into the following: Setting up the new goals, deciding and leading the organization Safety and environmental problems Communication and knowledge management Customer satisfaction Quality of product/ service Efficiency (avoid duplicating, reworking, rejection and failure in activities) Decreasing prices, life cycle time and loss of resources Motivation of personnel and employees’ job satisfaction. In this study the organization performance was measured by applying performance indicators that ar directional.



As we can see the fig before the tool area was messed and after setting the tools in proper manner it gives a different passion to work technique set in order gives a great after results to the department.

1. Arrange items for convenience when using.
2. Eliminate wasting time looking for certain tools and items.
3. Simplify the work process by making it easier to find necessary tools.
4. Create a plan to help the workplace stay in this new organization.

5S AND KAIZEN Benefits

Future analysis can also be applied for the other business and organization to realize best kind of relationship among directional indicators and overall performance so on. Learning success factors and their effects on organizations or comes may be investigated and everyone details which can lead to competitive advantage of company are suggested for future study. 5S implementation conjointly ensures safer work setting (Chapman, 2005). Reduction in waste, time and price is another superb, good thing about 5S (Hough, 2008). Sharrock (2007) discovered 5S implementation leads to improved quality, productivity and potency.

The second and main objective of this analysis, that was characteristic effectiveness of 5S implementation on the organization performance, has been achieved by employing a comparative measure between performance of organization before and once 5S implementation motor-assisted by SPSS and stand out software's.

As technology transfer and pedagogy manual of national capital TVET Agency in 2010 declared that, 5s could be a system of steps and procedures which will be employed by people and groups to rearrange work areas within the best manner to optimize performance, comfort, safety and cleanliness. alternative writers like Foss (2004) citation, 5s could be a philosophy and listing permanently work to attain bigger order, potency and discipline within the geographical point. Kaizen even includes social activities. it's an inspiration that's applied in each side of a human life.

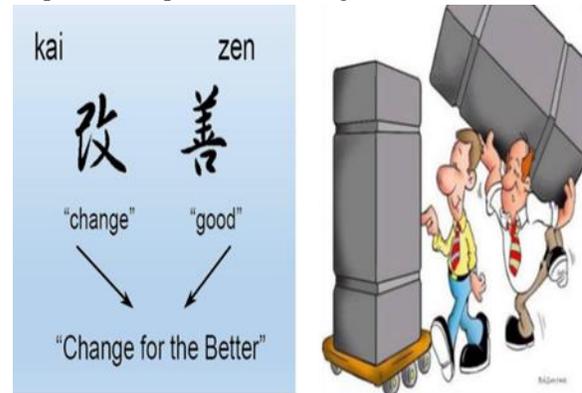
In business Kaizen encompasses several of the parts of Japanese businesses that are seen as a vicinity of their success. Kaizen implementation isn't once in an exceedingly month or once in an exceedingly year

activity. it's continuous. Imai (1997) expressed that the speed of the employee participation in terms of providing vital suggestion for his or her organization and Japanese corporations, (such as Toyota and Canon, a complete of sixty to seventy suggestions per worker p.a. square measure written down, shared and implemented). In most cases these aren't concepts for major changes. Kaizen is but, supported creating very little changes on a daily basis particularly,

V. RESULTS AND DISCUSSION

From the above procedure we determine the following results of Kaizen or 5s procedure.

I applied this technique on the real diamond jewelry in respective shops. The following result were obtained.



Kaizen encourages scrutiny of processes in the diamond jewellery production shop so that mistakes and waste can be reduced when i applied this process. Inspection needs are lessened because errors are reduced. Employee morale grows because it can bring about a sense of value and purposefulness. Teamwork increases as employees think beyond the specific issues of their department. Client focus increases as customer requirements awareness are raised. Systems are in place to ensure improvements are encouraged both in the short term and the long term. These are following results can bee gained by following:

- 1.Reduced inventory
2. Improved quality
3. Lower costs
4. Reduced space requirements. Shorter lead time.
6. Increased productivity.
7. Greater flexibility.
8. Increased capacity.
9. Better use of human resources

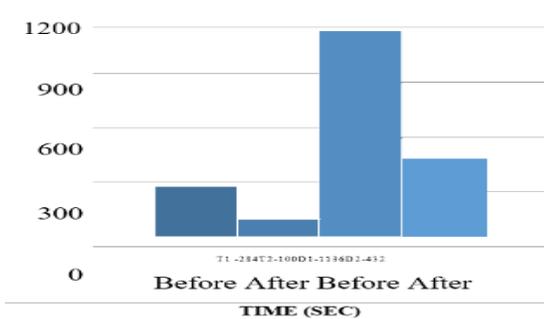


Manufacturing Unit	Availability	Work Status	Question Raised	Answer
Raw Material	Sufficient	Processed	Why?	PASS
Storage	Available	Imperfect	How?	FAIL
Designing, Moulding, Waxing	Incomplete	Delay in Work	Why?When?	FAIL
Preparing And Checking Material	Inappropriate	Delay in Work	Why?When?	FAIL
Initial Polishing	Not done	Delay in Work	Why?When?	FAIL
Diamond ,Sorting and Setting	No work progress	Delay in Work	Why?When?	FAIL
Final polishing	Not Started	Delay in Work	Why?When?	FAIL
Quality And Certification	Pending	Delay in Work	Why?When?	FAIL
Dispatch And Payment	Pending	Delay in Work	Why?When?	FAIL

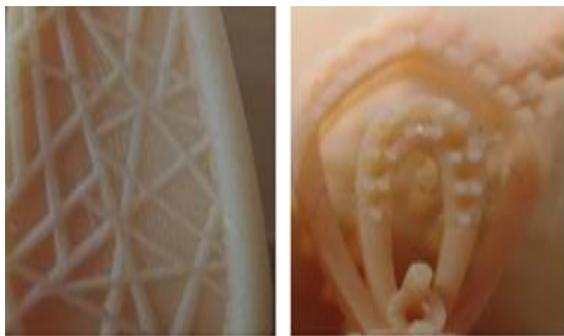
BEFORE

Manufacturing Unit	Availability	Work Status	Question Raised	Answer
Raw Material	Sufficient	Processed	Why?	PASS
Storage	Available	Processed	How?	PASS
Designing, Moulding, Waxing	Complete	Processed	Why?When?	PASS
Preparing And Checking Material	Appropriate	Processed	Why?When?	PASS
Initial Polishing	Done	Processed	Why?When?	PASS
Diamond, Sorting and Setting	Work in Progress	Processed	Why?When?	PASS
Final polishing	Completed	Processed	Why?When?	PASS
Quality And Certification	Completed	Processed	Why?When?	PASS
Dispatch And Payment	Completed	Processed	Why?When?	PASS

AFTER



GRAPH



(a) Cleaning and poor surface quality of RPT due to micron range kept on higher side .

(b) From 40 to 25 only which eliminated roughness, hairline issue.



(a) After filling, magnetic cleaning happen which increase FTR ratio as issue came from next process.

(b) Before and after magnetic cleaning process started in filling area to reduce FTR ratio.

Management techniques that specialize in worker involvement, and authorization through cooperation approach and interactive communications and on rising job style weren't new, however Japanese firms appeared to implement such techniques way more effectively than others .

VI. OVERVIEW

The business lesson of the 1980's was that Japanese corporations, in their seek world aggressiveness, incontestable a bigger commitment to the philosophy of continuous improvement than Western firms did (Bowles,1991). For such a philosophy the Japanese used the term Kaizen. Kaizen means that continuous improvement involving everybody within the organization from high management to managers then to supervisors, and to employees. In Japan, the idea of Kaizen is therefore deeply engrained within the minds of each manager and employees that they usually don't even understand they're thinking Kaizen as a customer-driven strategy for improvement (Imai, 1986). This philosophy assumes that our manner of life – be it our operating life, our social life or our home life – deserves to be perpetually improved (Imai,1987). there's plenty of difference within the literature additionally because the business on what Kaizen signifies.

Kaizen may be a Japanese philosophy for method improvement which will be derived to the that means of the Japanese words the Japanese Zen , that translate roughly into to break apart and investigate and to

improve upon the present situation' (www.kaizen-institute.com). The Kaizen Institute defines Kaizen because the Japanese term for continuous improvement. It's exploitation good judgment and is each a rigorous, methodology exploitation applied mathematics internal control associated an adaptive framework of structure values and beliefs that keeps employees and management targeted on zero defects. It's a philosophy of ne'er being glad about what was accomplished last week or last year (Barnes, 1996). Finally, I was happy to see all the facilities in manufacturing unit which was totally managed under 5S and kaizen System. We can use 5S and kaizen to improve and to reinvent the solution and benchmark of providing quality services. The better and efficient result were obtained under this process.

VII. CONCLUSION

- 1.5S and Kaizen its a great technology to Drive and Improve Safety, Quality, Delivery, value and money to boost Productivity.
- 2.I have studied and worked its efficient processes through elimination of waste. A cleaner & a lot of organized workspace ends up in higher worker morale.
- 3.5S and kaizen implementation is incredibly straight forward as a result of no tough terminologies area unit gift. they're logical, easy and natural to human behaviour. 5S and kaizen shouldn't be thought of as a house keeping exercise.
- 4.The methodology employed in this analysis are often extended for a lot of factors by involving a lot of specialists to induce a lot of correct results.
- 5.Future analysis can also be applied for the other business and organization to realize best style of relationship among directional indicators and overall performance so on.
- 6.Finding out success factors and their effects on organizations or comes are often investigated and everyone details which is able to lead to competitive advantage of company also are counseled for future study.

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