BENEFITS OF STANDARDIZED WORK: A STUDY

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Abstract - Now a day’s companies are facing tough competition worldwide. To survive in this cutthroat competition companies are looking the ways to improve the overall productivity. Standard work is one of the ways to achieve this goal. Standard work is defined as specific instructions that help to make a product in the most efficient way. By implementing standardized work employees will increase production, improve quality, and performance. This paper deals and highlights the conceptual importance of standard work followed by potential benefits achieved through the implementation of standardized work

Keywords - Standard Work practice, Lean Practice

1. ORIGIN AND HISTORY OF STANDARD WORK PRACTICE

Although there are instances of rigorous process thinking in manufacturing all the way back to the Arsenal in Venice in the 1450s, the first person to truly integrate an entire production process was Henry Ford. At Highland Park, MI, in 1913 he made consistently interchangeable parts with standard work and moving conveyance to create what he called flow production. The public grasped this in the dramatic form of the moving assembly line, but from the standpoint of the manufacturing engineer the breakthroughs actually went much further. Ford lined up fabrication steps in process sequence wherever possible using special-purpose machines and go/no-go gauges to fabricate and assemble the components going into the vehicle within a few minutes, and deliver perfectly fitting components directly to line-side. This was a truly revolutionary break from the shop practices of the American System that consisted of general-purpose machines grouped by process, which made parts that eventually found their way into finished products after a good bit of tinkering (fitting) in subassembly and final assembly. The problem with Ford's system was not the flow: Henry Ford was able to turn the inventories of the entire company every few days. Rather it was his inability to provide variety. The Model T was not just limited to one color. It was also limited to one specification so that all Model T chassis were essentially identical up through the end of production in 1926. (The customer did have a choice of four or five body styles, a drop-off feature from outside suppliers added at the very end of the production line.) Indeed, it appears that practically every machine in the Ford Motor Company worked on a single part number, and there were essentially no changeovers. In essence this system shifted the focus of the manufacturing engineer from individual machines and their utilization, to the flow of the product through the total process. Toyota concluded that by right-sizing machines for the actual volume needed, introducing self-monitoring machines to ensure quality, lining the machines up in process sequence, pioneering quick setups so each machine could make small volumes of many part numbers, and having each process step notify the previous step of its current needs for materials, it would be possible to obtain low cost, high variety, high quality, and very rapid throughput times to respond to changing customer desires. Also, information management could be made much simpler and more accurate.

2. LITERATURE REVIEW

Standardization of work processes is needed to facilitate efficient, safe work methods and eliminate wastes, while maintaining quality (Kasul and Motwani, 1997). Standardized work practice is easy to use for any company as suggested by Wong et.al that the five most adopted tools among the beginners in lean manufacturing were Standardized work, SS, Kaizen, Kanban, and PDCA. This is understandable since most of these tools are simple techniques which require less time to be planned and implemented. Emiliani (2008) presented the practical framework for implementing standardized work which is created in relation to the strategic and day-to-day tasks of executive leadership by providing a new definition of leadership, a precise description of business principles, and a standard skill set for executives. Various researchers carried out the number of study and presented how standard work is implemented and the potential benefits are achieved through its implementation.

3. NEED OF THE STANDARDIZED WORK

No Improvement is possible unless the standardization is there in the organization and continuous maintenance and up gradation of the standards takes place through plan – do – check –act cycle on the establish standards. Five factors that facilitates the successful implementation of standardized work:

a) Ownership
b) Real Need
c) Focus Area
d) Champions.

Champions should be created and middle management and supervisors must give full support and regular training should be carried out of champions. There are some steps which
show how Standardized work lead to better utilization of works efforts

a) The workers knew exactly what to do to obtain the desired result.
b) Reduces waste time.
c) Helps the works to be consistent
d) Reduces the non-value added activities for which customer does not pay.

It is the foundation for continuous improvement as it provides consistency in work process and leads to desired level of improvement. The need of the standardized is also essential in implementing of the following principles of Toyota Production System (TPS)

1. Reduced Set up Time

All setup practices are wasteful because they add no value and they tie up labor and equipment. By organizing procedures, using carts, and providing training to workers to do their own setups, Toyota managed to slash setup times from months to hours and sometimes even minutes.

2. Small Batch Size

Producing things in large batches results in huge setup costs, high capital cost of high-speed dedicated machinery, larger inventories, extended lead times, and larger defect costs. Because Toyota has found the way to make setups short and inexpensive, it became possible for them to economically produce a variety of things in small quantities.

4. DEFINITION OF STANDARDIZED WORK

Standardized work is a document centered on human actions that combines the element of a job to do in most effective sequence, without waste, to achieve the most efficient level of production. Standardized work is distinct framework which includes three critical elements: Takt Time, standard work, and job sequence.

The Most Critical factor in applying standardized work is to impart training to the work force. This creates awareness and understanding among employees as they know what to do and how to do the job. Standardized work is one of the most powerful but least used lean tools. By documenting the current best practice, standardized work forms the baseline for kaizen or continuous improvement. As the standard is improved, the new standard becomes the baseline for further improvements, and so on. Improving standardized work is a never-ending process. Basically, standardized work consists of three elements:

a) Takt time, which is the rate at which products must be made in a process to meet customer demand.
b) The precise work sequence in which an operator performs tasks within takt time.
c) The standard inventory, including units in machines, required to keep the process operating smoothly.

Establishing standardized work relies on collecting and recording data on a few forms. These forms are used by engineers and front-line supervisors to design the process and by the operators to make improvements in their own jobs. Standardized Work concentrates on the most efficient humanized sequence for each process, using synchronous production speeds, flowing work sequence design and standard work in process stocks. It is the foundation stone, providing a solid base to build the never-ending continuous improvement house of lean. Standardized operations are the backbone of continuous improvement (Kaizen) systems. Standardized work is the documentation of the process. Standardized processes provide companies a platform from which they carry out continuous improvement.

A standard operating procedure is a set of instructions that provide direction covering those features of processes that lend themselves to a definite or standardized approach for optimization and consistency of output. Well-written standardized work procedures provide direction, improve communication, improve efficiency, improve safety, improve quality, improve capacity, reduce training time, and improve work consistency.

5. BENEFIT OF STANDARDIZED WORK

The benefits of standardized work include documentation of the current process for all shifts, reductions in variability, easier training of new operators, reductions in injuries and strain, and a baseline for improvement activities. Standardizing the work adds discipline to the culture, an element that is frequently neglected but essential for lean to take root. Standardized work is also a learning tool that supports audits, promotes problem solving, and involves team members in developing poka-yokes. The benefits of standardized work include the work instructions of current processes themselves covering all processes, all employees and all shifts therefore reducing variation, making training much easier. The features of standardizing includes safe systems of work, quality assurance and control, the movement of employee process elements to organizational documented process elements, providing the benchmark or baseline for all future improvement. A standardized work approach is a disciplined approach, an essential foundation for LEAN to take root. In summarized way following benefits of standardized work are enlisted:

a) Builds in quality – Every operator is an inspector to fix problems in station before passing them on. If defects do get passed on, they are detected quickly and problem can be immediately diagnosed and corrected.
b) Creates flexibility – Standardized work leads to create the flexibility due to shorter lead times.
c) Improves productivity – Very easy to spot the busy or idle station and easier to calculate the value-added work.
d) Frees up floor space – Because of inventory storage reduction.
e) Improves safety – Smaller batches means simpler transportation system and less accident because of forklifts.
f) Improves morale – People do high percentage value-added work and can see the results of their work faster.
6. TERMINOLOGY IN STANDARDIZED WORK PRACTICE:

There are following term which frequently used in this thesis, has been given below as follows:

1. Takt Time: Takt is a German term for rhythm. Takt time is the allowable time to produce one product at the rate customers is demanding it. This is not the same as cycle time, which is the normal time to complete an operation on a product.

2. Cycle Time: The normal time to complete an operation on a product. This is not the same as Takt time, which is the allowable time to produce our product at the rate customers are demanding it.

7. CONCLUSION:

In this way it is concluded that by implementing standardized work concepts, companies can achieve many potential benefits such as improved safety, increased productivity, and higher quality. This is also supplemented by augmenting the moral of the workforce. Hence standardized work is a powerful tool of lean manufacturing to increase the overall performance of the company.

REFERENCES

