

Improving Productivity by Using Quality Tools

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Abstract - Total quality Management as a philosophy seeking to integrate all organizational functions in all areas of productions and services become an important attractive research field. It encourage Researchers to address many topics related to Total Quality management and Continuous improvements. Each has his own approach. Each reveals findings and results. service. The ultimate aim This paper is to study the impact of total quality management (TQM) concept and argues that its application is the critical need of our industries. The global marketplace to continuously adapt their products to meet new market demands in order to stand their ground in a highly competitive environment. Management"; and the third, presents some of the benefits that were realized by international organizations implementing TQM. TQM technique using tools like JIT techniques to assist and make further development in manufacturing organization to enhance and improvise the efficiency of system. .Proper functioning of the tools and liable guidance for workers so that increases the efficiency and good decision making skills. Producing high quality of products and services is one of the key concerns in order to keep up with the competition in the global markets.

Keywords— Continuous Improvement, JIT, TQM.

I. INTRODUCTION

The growing competition in the current global market is an issue translating into a vast need for the continuing evolution of the industry. Therefore, world business is continually in search for the competitive edge due to the growing demands of customer needs and expectations. Quality has an important role in the business process across the entire organization, to be more efficient and effective in the global market, thus improving productivity and customer loyalty as well as increase market share. It is not only necessary to reduce the wastage, but also to satisfy customer's expectations, continuous cost reductions and continuous improvements to survive in highly competitive environment.

1.1 QUALITY CONTROL TOOLS AND TECHNIQUES ARE:-

Understanding processes so that they can be improved by means of a systematic approach requires the knowledge of a simple kit of tools or techniques. The effective use of these tools and techniques requires their application by the people who actually work on the processes, and their commitment to this will only be possible if they are assured that management cares about improving quality. The tools and techniques most commonly used in process improvement are: • Process flowcharting • Cause & effect diagrams • Brainstorming • Pareto analysis • Control charts • Check sheets • Scatter diagrams • Histograms • FMEA.

II. QUALITY CONTROL TOOLS

Q.C.Tools can be applied Production and Marketing. The main aim is to satisfied the customers and delivery of defect free product. The aimed to the successfully implementation of quality control tools in manufacturing industry.

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- Process Flowcharting
- Cause & Effect Diagrams
- Brainstorming

- Pareto Analysis
- Control Charts
- Check Sheets
- Scatter Diagrams
- Histograms
- FMEA

Benefits of Quality Control tools and Techniques:-

Quality Control tools implementation is important as it could improve process performance by reducing product variability and improves production efficiency by decreasing scarp and rework.

- Helps in Minimization of the rejection and rework.
- Helps in Enhance customer satisfaction by reduction in customer Complaints.
- Beneficial for reducing the production cost.
- Helps in finding the root causes of problem and improving production performance.

III. IMPLEMENTATION OF TOOLS

3.1 CAUSE AND EFFECT DIAGRAM

Cause and Effect Diagram (also called fishbone diagrams, herringbone diagrams, or Fishikawa) are causal diagrams created by Kaoru Ishikawa (1968) that show the causes of a specific event. Common uses of the Cause and Effect Diagram are product design and quality defect prevention to identify potential factors causing an overall effect. Each cause or reason for imperfection is a source of variation. Causes are usually grouped into major categories to identify these sources of variation. Causes can be traced back to root causes with the 5 M's technique. Cause and Effect Diagram are Machine , Method, Material, Man power , Measurement.

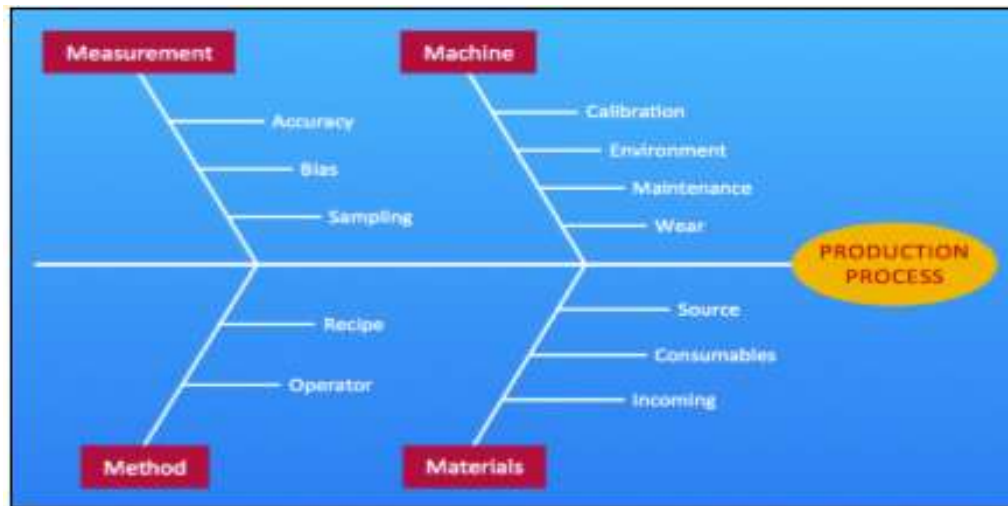


Fig 3.1 : Cause And Effect Diagram

3.2 HISTORY

Histogram is a kind of bar chart which is used for measurement of data and showing a distribution of variables or cause of problems. A Histogram shows history representation of the distribution of numerical data. It is an estimate of the probability

distribution of a data (continuous variable and quantitative variable) and was first introduced by Karl Pearson . To construct a histogram, the first step is to "bin" the range of values that is, divide the entire range of values into a series of intervals and then count how many values fall into each interval. The bins are usually specified as consecutive, non-overlapping intervals of a variable. The bins (intervals) must be adjacent, and are often of equal size.

However, bins need not be of equal width; in that case, the created rectangle is defined to have its area proportional to the frequency of cases in the bin. Histograms give a rough sense of the density of the underlying distribution of the data, and often for density estimation: estimating the probability density function of the underlying variable. The total area of a histogram used for probability density is always normalized to 1. If the length of the intervals on the x-axis is all 1, then a histogram is identical to a relative frequency plot

The histogram is one of the seven basic tools of quality control. Histograms are sometimes confused with bar charts. A histogram is used for continuous data, where the bins represent ranges of data, while a bar chart is a plot of categorical variables. Some authors recommend that bar charts have gaps between the rectangles to clarify the distinction. But it is not required to give the gap between them.

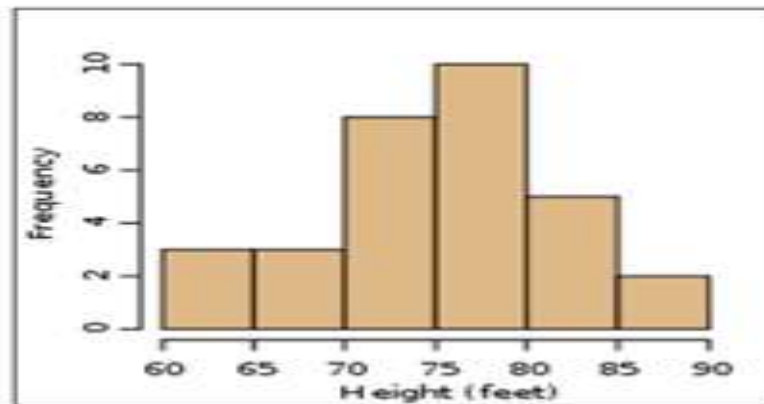


Fig :3.2 Histogram

3.3 CONTROL CHART

The control chart is a graph used to study how a process changes over time. Data are plotted in time order. A control chart always has a central line for the average, an upper line for the upper control limit and a lower line for the lower control limit. These lines are determined from historical data. The control chart was invented by Walter A. Shewhart while working for Bell Labs in the 1920s. There many charts of Control chart like : X , R, s, p, np, c, u charts.

It helps the process perform consistently and predictably.

- It can minimise the variation in output.
- It can help to achieve lower product costs.

IV. CONCLUSION

A conclusion section must be included and should indicate clearly the advantages, limitations, and possible applications of the paper. Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions. In the Quality management system. Quality tools can be much wider applied with certain success. Quality tools are not so wider spread as expected although they are quite simple for application an easy for interpretations. Quality Control Tools could improve process performance by reducing product variability and improves production efficiency by decreasing scrap and rework.

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