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SIX SIGMA- AN IMPORTANT TECHNIQUE OF BUSINESS

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Abstract: *Current era is global and technical era. Competition in every field is very tough. Quality maintenance is the major affecting factor to this competition standing in the market. There are different meaning by different scholars on the quality and quality maintenance. Japan is the fastest growing country in the world in all aspect. Continues disaster is the natural tragic part of this country. Yet Japanese techniques in industrial management are on the topmost level at world-wide including Material management, market management quality management etc. To stand strongly in the competitive era, business processes the use their maintenance effort in businesses i.e. DuPont Chemicals, Toyota of Japan, Meridian Energy in New Zealand, the Maintenance Group is answerable to make the business more successful. No matter what kind of business is i.e. the soul business or partnership or cooperative sectors, quality maintenance is on priority to achieve the desired target of the business sectors. Six Sigma is one popular Japanese techniques of quality product. Six sigma is related to zero defect product. This does not limit with the quality of product, it's related to zero defect product which includes customers' satisfaction. Six Sigma is a highly controlled methodology with a set of tools and techniques for the procedure improvement and which enables the organizations deliver close to perfect products or services with nominal defects. Current paper is an attempt to focus on six sigma and zero defect products.*

Key words: *Quality technique, management, customer, zero defects, six sigma etc.*

Introduction: Industrial growth changed human life in a large scale. It has given ease way of living life, comfort life and saved time also. Customers' satisfaction should be prior need of and quality of manufacturing industries. Although firms have thought-about common internal control and method improvement ways, there is still a necessity for additional affordable and effective strategies as all the specified standards and shopper satisfaction have not continually been reached.

There is still a necessity for a necessary analysis that may be related to management and its factors which poignant concrete cracks and slippage between concrete and steel. This term is defined as Zero defect product. It is defined with the quality 99.9999 perfect product. When conducting a case study on TinjinXianyi Construction Technology Co, Ltd., it absolutely was found that construction time and construction waste were reduced by twenty six.2% and sixty seven consequently when adopting six letter. Similarly, Six letter implementation was studied at one in all as the most important engineering and construction firms within the world: Bechtel Corporation, wherever when Associate in Nursing initial investment of $30 million in a very Six letter program that enclosed characteristic and preventing work on and defects, over $200 million were saved. Therefore, Six sigma is one of the major techniques of quality management.

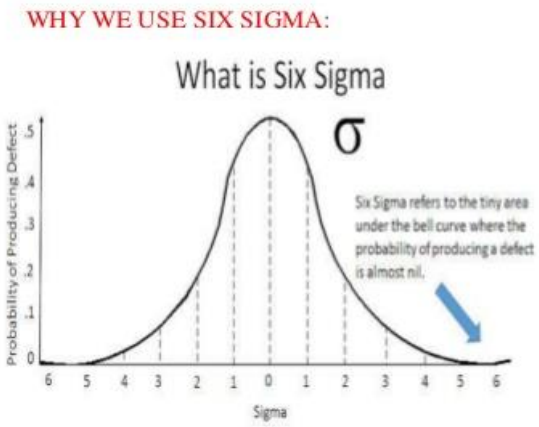
History of Six Sigma:

Sig Sigma is used by Motorola Company and defined by Bill Smith early in the 1980s. This is originated from terminology related with statistical modeling of industrial processed. Basically, Six Sigma is a box of a lot of excellence tools. .This term is called as defect-free outcome. This concept is outcome of the statistics. It is used in statistical quality control, which evaluates process capability. It has been referred to the capacity of industrial manufacturing processes to produce a very high amount of output within specification. “Six Sigma" was registered June 11, 1991 as U.S. Service Mark 1,647,704. In 2005 Motorola attributed over US$17 billion in savings to Six Sigma[3]”After its initial application at Motorola within the late Nineteen Eighties, different internationally recognized companies presently recorded high range of savings when they stared to apply Six letter. Sample example of this is Johnson and Johnson, with $600 million of reported savings, American state Instruments, which saved over $500 million additionally as Telefónica Diamond State European nation, which reported €30 million in savings within the initial ten months. On high of this, different organizations like Sony and Boeing achieved massive percentages in waste reduction.

Definition of Six Sigma:

The term six sigma has various meaning. Few scholar defined it as, “The use of teams that are assigned well-defined projects that have a direct impact on the organization's bottom line.[4]” Continues Improvement in the product quality considering customers’ satisfaction is basic aim of six sigma.

Graph and Table of Six Sigma:



Sigma Level	Defects *per million*	Defects *percentage*
1	691,462	69%
2	308,538	31%
3	66,807	6.7%
4	6,210	0.62%
5	233	0.023%
6	**3.4**	**0.00034%**
7	0.019	0.0000019%

TABLE

Table and Graph of Six Sigma 0.1 (Source –Internet)

As given in the above table six sigma is connected with Zero Defect project and its seven steps where mean is of 3.4 which is called as Six Sigma. Following are the principles of Six Sigma.

Principles of Six Sigma: There are main five principles of Six Sigma:

a. **Concentration on the Requirement of the Customers:** As customers are the soul of any organization, their satisfaction is very important.

b. **Errorless Analysis:** Project perfection means to identify the errors or the defect. Therefore second principle of to identify the errors, reason behind the errors and remedies to overcome these errors for manufacturing zero defect errors.

c. **Proper Improvement Process:** Continues improvement is the main motive of any organization. It should be maintained and followed by each part of organization. Therefore, to follow the technique of six sigma, it proper improvement process.

d. **Utilization of Human Resource Management:** Human Resource Management means proper utilization of manpower of organization. The psychological aspects of employees effect to product quality. Therefore in the maintenance of quality of product, hierarchy of the manpower should be identified by the leader and they should be motivated for work proper initiative.

e. **Flexibility:** Rules and regulations are essential part of any organization, but timely and need based flexibility for the smooth running of the function is required to maintain the quality of product.

f. **Consumer Focus:** Why Product? Customers are the target group of product, hence in quality management of the product, the principle of customer focus should be followed.

g. **To understand the work reality:** It is always found that, there is difference between theory and actual practical work. Hence, the work reality, its nature of work, plan according to work are important aspect during the actual performance of the work.

h. **Minimize the wastage at workplace:** maximum wastage minimum output as a part of profit. Hence six sigma follows the principle of minimum wastage as workplace.

Apart from these, Overcoming defect of product, Collaborating selling and purchasing process, Use of systematics and scientific method of management, Smooth flow of Working at workplace etc. principles of the management are the part of six sigma- the technique of quality management in an organization.

Sigma Level and Sigma Belt: Sig Sigma Level is exciting in profession at each level with different role. There are six belts r levels of six sigma which are given in the below table:

S.No	Level of Sigma	Function of Level
01	Black Belt	Aims to complete the project Training to develop the skill of proper decision making power.
02	Green Belt	This is connect with data collect. Helps to collect the data. Helps to analyse the data. Monitor to the black belt to complete the product. Generally, green belt leads the team to complete the project
03	Master Belt	This can be called as trainer group. It trains the group of black belt and green belt. It acts as the technologist and internal consultant in Sigma work.
04	Yellow Belt	Participating team Process Improvement Team

05	White Belt	This is the local problem solving techniques. Overall supporting team to complete the project. It has to maintenance perception of awareness.
06	Brown Belt	This is not used in all organization. Few organization use it. This is the person who passed the exam of black belt certification only. Apart from it, no other certificate or exam is passed.

Table 0.2 The sigma level.

The table 0.2 is the description of various courses and level of Six Sigma.

Method of Six Sigma:

There are two major method of Six Sigma projects in which is defined by Deming's Plan-Do-Study-Act Cycle.

A. DMAIC: This method is used for those projects which has aim to improve an existing business process. In this method following are five phases:

1. In this phase, work start with the Definition of the system, the voice of the customer and their requirements, and specifically, the project goals.
2. In this phase, the including with Measuring key aspects of the existing procedure and collection of relevant data and finally, the calculation of the 'as-is' Process Capability.
3. Analysing the data for investigation as well as verifying the causes and effects of relationships. Determination about what kind of the relationships are as well as which attempts are included to ensure all factors related to quality of the process have been considered.
4. Data analysis using the techniques as the design of experiments, poke yoke or mistake proofing, and typical work to produce a new, upcoming state procedure to expand or enhance the existing method based upon the set up pilot runs to establish process capability.
5. Controlling the future state procedure to the safeguard which in any deviations from the target are modified before they result in defects. Implement control systems in this phase are used as the statistical process control, production boards, visual workplaces, and these all are continuously

monitored for the quality improvement. This process is continuously repeated till the preferred superiority level is attained.

6. For the application of this phase few industries' add an Identified step at the beginning. This is also recognized as the correct difficult to work on.|

B. DMADV: This method is used for those projects which has the aim to create a new product or process designs: There are main five steps of DMADV

1. To define the designed goals which are constant with consumers' demands and the enterprise strategy
2. Measuring and identifying the characteristics of the Critical to Quality as to measure product capabilities, production process capability, and measure risks are included in this step.
3. To analyse, to grow and design substitutions
4. To define and design an upgraded substitute which will be best suited as per analysis in the first step are involved in this step.
5. To confirm the enterprises' aims, set up test runs and implement the quality process of the production and hand it over to the procedure owner(s).

Etymology of "six letter process":

The term "six letter process" comes from the notion that if one has six commonplace deviations between the method mean and therefore the nearest specification limit, which has not fail to fulfil specifications and customers' satisfaction. This is often supported the calculation technique utilized in method capability studies. Capability studies live the quantity of normal deviations between the method mean and therefore the nearest specification limit in letter units, diagrammatical by the Greek letter σ (sigma). As method variance goes up, or the mean of the method moves off from the middle of the tolerance, fewer commonplace deviations can match between the mean and therefore the nearest specification limit, decreasing the letter range and increasing the chance of things outside specification. One ought to additionally note that the calculation of letter levels for a method information is freelance of the information being commonly distributed. In one in all the criticisms to 6 letter, practitioners victimisation this approach pay a great deal of your time remodelling information from non-normal to traditional victimisation transformation techniques. It should be aforementioned that letter levels may be determined for method information that has proof of non-normality.

The things involved in the customers' Satisfaction:

a. **Attending the Call:** This is the important process of Customers' satisfaction. If customers are calling regarding the product, its quality, complaints.
b. **Servicing/Maintenance:** In this part of customers' satisfaction, if they need service and maintenance in their desired time, they should provide. If they are asking on immediate base, it must be provide soon.
c. **Replacement:** If customer has purchased item/product and within very few days, there is problem and they want to replace, product must be replaced rather than repairing. Because their satisfaction is on prior level in this technique.

Thus, these all and other factors which are connected with mental physical and other needs of customers are measured and according to it, the required service of it is provided to the customers in this Six Sigma technique.

Conclusion

Thus, Six Sigma is an important term used in organization/business sectors because it has an important part of customers'' satisfaction. Mouth publicity about the product plays an important role in the selling product. It above mentioned or other same as it are the problems' of the customers' and they are solved by the companies/organizations or industries, then and then only customers' get satisfied and they conveys to others also about their own experiences which they got from the used product. Knowingly and unknowingly they work as an advertisement tool and it has long lasting effect on the product and its selling. Therefore use of Six Sigma technic in industrial sector is now popular and important tool for customers'' satisfaction and workout as Zero Defect product in this competitive and global era. Thus, the role of six sigma plays a vital role in an organization. It is very useful in supply chain to achieve the aim of zero defect product. There is necessity to maintain the quality of a product. Mouth publicity work as a major tool in the product selling. If customers are not satisfied with their purchased product, they always talk about it with other individuals. This will work as a road break in the profit gaining motif of organization.

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