SIX SIGMA – AN INTEGRATED STRATEGY FOR BUSINESS PERFORMANCE

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Abstract

We live in a dynamic world. The trends that existed in a few years ago do not exist today. With the increasing globalization and new communication technologies people's lifestyle is changing. Their consumption pattern and attitude has changed dramatically. They become more quality conscious than quantity or cost conscious. To take competitive advantage and customer satisfaction, corporate all over the world are focusing on quality implementation through six sigma strategy-a strong statistical tool. Six sigma emerged as an integrated strategy for business performance. This paper analysed the theory, its implementation process etc.

Keywords- Quality, QA&QC (Quality Assurance &Quality Control), Customer satisfaction, Quality Improvement, Total Quality management

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Introduction

Corporate all over the globe today increasingly realizing the fact that customers preferences have changed from quantity and cost to quality. Studies proved that people are more quality - conscious than quantity or cost - conscious. To take competitive advantage, companies are focusing on quality implementation. Six sigma has emerged as a strong statistical quality tool for all global organizations. Every organization has its own QA and QC departments to implement quality. Six sigma is one of the most critical and costly adopting processes, but all major corporate of software and manufacturing companies are adopting it to improve product quality and improve customer's satisfaction, to retain more world class companies as their clients, especially in the fields of Banking, Service and Production. It is rapidly becoming a major driving force for many technologies driven and project driven organizations

In India, the term "Six sigma" is derived from a field of statistics known as Process capability studies. Originally, it refers to the ability of manufacturing processes to produce avery high proportion of output, within specifications. Processes that operate with six sigma quality over the short - term are assumed to produce long - term Defect levels below 3.4 defects per million opportunities (DPMO). Six sigma's implicit goal is to improve all processes to that level of quality or better.

Six sigma was originally developed as a set of practices designed to improve manufacturing processes and eliminate defects, but its application was subsequently extended to other types of business - processes as well as, anything could lead to customer dissatisfaction disregarding manufacturing or services.

It is a set of tools and strategies for process - improvement originally developed by Motorola in 1986. Six sigma became well known after Jack Welch made it a central focus of his business strategy at General Electric in 1995 and today it is applied in different sectors of the industry. Six sigma was heavily inspired by six preceding decades of Quality improvement methodologies such as Quality control, TQM and Zero defects based on the work of pioneers such as Shewart, Deming, Juran, Ishikawa, Taguchi and other quality gurus.

Six sigma assures

- Continuous efforts to achieve stable and predictable process results (ie, reduced process variation), which are very important for business success.

- Manufacturing and business processes have characteristics that can be measured, analyzed, improved and controlled.
- Sustained quality - improvement requires commitment from the entire organization particularly from top - level management.
- A class focus on achieving measurable and quantifiable financial returns from any six sigma projects
- An increased emphasis on strong and passionate leadership and support.
- Peculiar commitment to making decisions on the basis of verifiable data rather than assumption and guess work.

Literature review

Six sigma uses a set of quality management methods including statistical methods and creates a special infrastructure of people within the organization who are experts in these very complex methods. Six sigma provides a logical alignment and integration of statistical tools built into a DMAIC (Define, Measure, Analyse, Improve and Control) frame work. (Goh,2010)

According to James Harringston (2001), "The Six sigma was simply a TQM process that uses process quality analysis as a way of measuring progress".

Antony and Benuelaus (2001), based on the review of existing literature, identify that the key ingredients for the effective implementation of Six sigma are : Top management involvement and commitment; Cultural changes; Organizational infrastructure; Training; Project management skills; Project prioritization and selection, Reviews and tracking; Understanding the Six sigma methodology, tools and technique; Linking Six sigma to business strategies; Linking Six sigma o the customer; Linking six sigma to the human resources and Linking six sigma to the suppliers.

Henderson and Evans(2000), based on their study of GE's Six sigma implementation suggested Upper management support/involvement, Organizational infrastructure, Training, Tools, Linkage to human – resource based action (promotion, bonuses), Early communication to employees, Measurement systems and an Information technology infrastructure as the key elements for successful implementation of six sigma.

Six sigma is a business improvement approach that seeks to find and eliminate causes of mistakes or defects in business processes by focusing on Process output that are of critical importance to customers (snee 2004).

A Six sigma initiative is designed by way of breakthrough in improvement in all aspects of the business (Breyfogle et.al.2001)

Six sigma is considered as an approach that the management of a firm agrees to adopt a data -based problem solving approach, when solving business and quality - related problems.

The Methodology

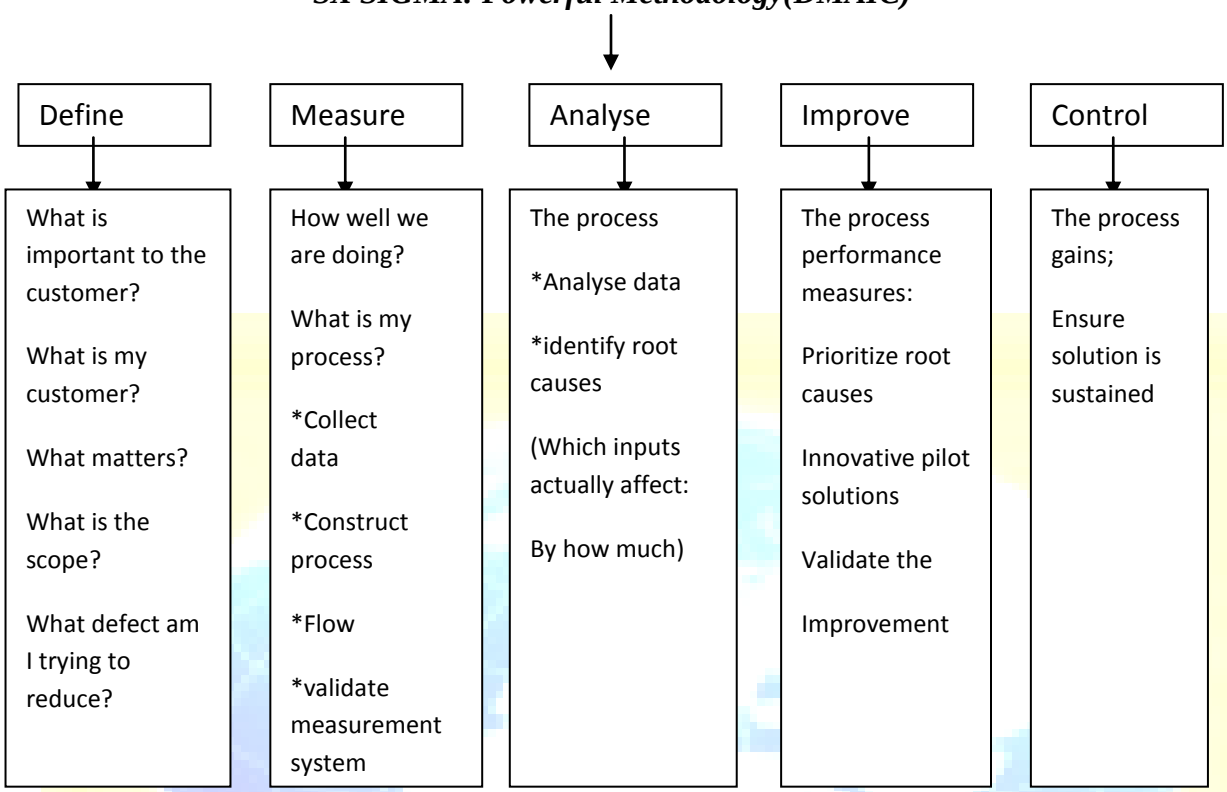
Six sigma is a process-focused and data driven methodology for elimination of defects in all processes (manufacturing, service and transaction) which are critical to customers. It was evolved as a powerful business strategy over 20 years and successfully implemented in almost all financial sector institutions for the past seven years.

Six sigma is a statistical measure whereby it measures variation in process around its mean. It considers any data point which is beyond the specification, as defect. One can assume that there will be 3.4 defects per million opportunities to have a process at six sigma levels.

Six sigma evolved as an organizational approach to operational excellence by identifying:

- Fundamental changes in organizational culture
- Varying processes and functions.
- Focusing customer based on proactive management and measurement of variations.

Six sigma enterprises are customer focused, reliable and consistent in the delivery of their product and services. Six sigma drives for defect reduction, process improvement and customer satisfaction are based on philosophy of action and learning based on process, variation and data. There is a shift in logical thinking shift from process –variation data to define-measure-analyze-improve-control (DMAIC) as shown below:



When all key processes within a business are completed for each of these five phases; the business will naturally reach six sigma qualities.

- In the Define - phase, customer needs and the specific process or product to improve are identified (Box, 2006).
- In the Measure - phase, baseline and target performance of the process or product to be improved are identified. This phase also validates the measurements that will be used.
- In the Analyze - phase, the root cause of the problem is identified.
- In the Control - phase, the solution is documented, responsibility of the change is assigned and the results are tracked.

Six Sigma uses Critical-To-Quality (CTQ) and Defects per Million Opportunities (DPMO) as the common measure for quality assessment and improvement. The target of a Six Sigma project is to reduce DPMO and increase Sigma. The Six Sigma process is expected to yield 99.997% accuracy or 3.4 DPMO (Goh, 2011).

Implementation Phase

The key elements of Six sigma implementation, which service organizations must take consideration are:

- Customer- customer satisfaction
- The customer is the centre of the universe- He defines the quality:
- Quality requires watching your business from customer's perspective than yours. With this knowledge one can add value significantly or can improve the process of Customer perspective- CTQ's
- Employee- Management commitment
- People create results. Fundamentally in quality approach is the involvement of all members/employees. The company is committed to providing opportunities and incentives for employees who focus their talent and energy in achieving customer satisfaction-For employees.

Six Sigma can be applied to any industry. India being a fast growing economy cannot compromise on the quality of its products and services delivered. The demand for enhanced quality and reduced cost of production has coaxed many companies to introduce six sigma irrespective of the industry to which it belongs. In India Wipro was the first company to adopt Six Sigma in the year 1997.Wipros's every business from software to hardware, FMCG, BPO all adopted Six Sigma into its processes. With the application of Six Sigma, the Company was able to complete 91% of its projects on time as compared to an industry average of 55%.

In the pharmaceutical industry, adoption of Six Sigma helped to reduce the wastage involved in production. It was said that 5-10% of the medicines produced had to be discarded or modified due to the defects. But with the application of Six Sigma, pharmaceutical companies were able to reduce the errors in production.

Airline industry had to adopt Six Sigma practices for its survival. The high cost of fuel and competition from low budget airlines require the industry to provide lower airfares without minimizing on quality. The number of errors in handling calls from customers and ticketing were reduced drastically after the adoption of Six Sigma. Similarly the hospitality services, steel industry etc all benefitted with the application of Six Sigma in their business processes.

Challenges

As with any new initiative, there are many challenges to Six Sigma implementation. T.N. Gohin in the article "Six Triumphs and Six Tragedies of Six Sigma" (2010) analyzes some worrying trends in the practice of Six Sigma. Here is the list of challenges as mentioned by the author.

1. "The belief that Six Sigma is universally acceptable".
2. "Obsession with personal certification attainments".
3. "The idea that professional statisticians are no longer needed".
4. "Irresponsible hype of Six Sigma".
5. "Ignorance or neglect of what is important beyond DMAIC".

Besides the above listed challenges, fear of change in organizational culture, failure to recognize the need for change and permitting possible obstacles like organizational structure and culture to block the vision are some of the other issues that need to be addressed.

Conclusion

Six sigma is an improvement methodology in the field of Total Quality Management. It is a methodology for continuous improvement and customer satisfaction by involving managers at all levels in any organization. Any initiative in the right direction with the right approach and right tools is a guarantee for success.

References

Antony, J and Banuelas,R. (2001): 'A Strategy For survival'. Manufacturing Engineers, Vol.80 pp 119 - 121

Box, T. (2006). Six Sigma quality: Experiential learning. *SAM Advanced Management Journal*, 71(1), 20-23.

BreyfogleIII.F.W,Cupello,J.M and Meadows B.(2001) Managing Six sigma, John Wiley &Sons,Newyork.

Goh, T. N. (2010). Six Triumphs and Six Tragedies of Six Sigma. *Quality Engineering*. 22(4), p 299-305. DOI 10.1080/08982112.2010.495102.

Goh, T.N. (2011). Six Sigma in industry: some observations after twenty-five years. *Quality & Reliability Engineering International*. 27(2), p221-227.DOI 10.1002/qre.1093

Henderson,K.Mand Evans J.R.(2000)'Successful Implementation of Six sigma: Bench marking General Electric Company' Benchmarkin: An International Journal of Quality Through Excellence, Vol.7, p 260, p 281

James, H Harringston,' Sixsigma's Long term Impact' Quality Digest (June2001):p16

Snee R.D (2004) 'Six sigma; the evolution of 100 years of business improvement methodology' International Journal of Six sigma and competitive advantage. Vol.1 No.1 pp4-20

Student (1908) 'The probable Error of a mean' Biometrica, Vol.6 pp 1-25

Taylor, F.W. (1911). *The principles of scientific management*. New York: Harper Bros