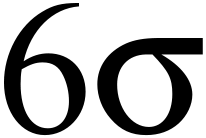
**Quality** **Management**

أسفل النموذج

**Systems**



The definition of six sigma   
  
Sigma is the eighteenth letter in the alphabet and icon Greco Ơ)), and statisticians may use this code to denote the standard deviation.   
The standard deviation of a statistical method and the index to describe the deviation or variance or dispersion or inconsistencies in the process for certain of the objectives   
Six Sigma is a process or strategy firms can improve significantly with respect to its core operations and structure through the design and monitoring everyday business activities so as to reduce waste and resource consumption (time - mental energies - physical energy) and at the same time meet the needs of the client and the achievement of the conviction, and it has demonstrated the principle of Six Sigma to the facility to offer services or goods free of defects because the rate of about flaws in the Six Sigma 3.4 defect per million opportunity, ie the proportion of the efficiency and effectiveness of operations 99.99966%.   
  
- The bottom line is that the idea of Six Sigma is that if the business was able to measure the number of defects in an operation they can in a scientific way to remove these defects and is nearing the point free of defects.

Methods

Six Sigma projects follow two project methodologies inspired by Deming's Plan-Do-Check-Act Cycle. These methodologies, comprising five phases each, bear the acronyms DMAIC and DMADV.

DMAIC is used for projects aimed at improving an existing business process.

DMADV is used for projects aimed at creating new product or process designs.

DMAIC

The DMAIC project methodology has five phases:

Define the problem, the voice of the customer, and the project goals, specifically.

Measure key aspects of the current process and collect relevant data.

Analyze the data to investigate and verify cause-and-effect relationships. Determine what the relationships are, and attempt to ensure that all factors have been considered. Seek out root cause of the defect under investigation.

Improve or optimize the current process based upon data analysis using techniques such as design of experiments, poka yoke or mistake proofing, and standard work to create a new, future state process. Set up pilot runs to establish process capability.

Control the future state process to ensure that any deviations from target are corrected before they result in defects. Control systems are implemented such as statistical process control, production boards, and visual workplaces and the process is continuously monitored.

DMADV

The DMADV project methodology, also known as DFSS ("Design For Six Sigma"),[12] features five phases:

Define design goals that are consistent with customer demands and the enterprise strategy.

Measure and identify CTQs (characteristics that are Critical To Quality), product capabilities, production process capability, and risks.

Analyze to develop and design alternatives, create a high-level design and evaluate design capability to select the best design.

Design details, optimize the design, and plan for design verification. This phase may require simulations.

Verify the design, set up pilot runs, implement the production process and hand it over to the process owner(s).

The emergence of Six Sigma   
  
Man is naturally looking for the perfect and tries to avoid mistakes and work to remedy defects, as well as enterprises looking for the perfect and try to avoid mistakes and work to remedy defects that appear in their activities, therefore, may the researcher notes that many of the ideas of six sigma is not new, but the new is the ability of Six Sigma to collect all the ideas within the administrative process a coherent and interrelated.   
The Six Sigma does not arise in day and night, but is an extension of the evolution of management science and practices in the West and Japan since the seventies and eighties emerged as the overall quality that led to the development of scientific and statistical tools to detect problems and working to remove them to improve performance   
  
Motorola has been one of the first companies that have developed a methodology and Six Sigma method used in 1979, and earned her this method amounted to save $ 2.2 billion within four years.   
 

What is the relationship of six sigma quality ?   
    
One may be lost between the various names such as "Total Quality Management", "performance management", "work as a team", "Quality Circles", "ISO 9000" ... Etc., as well as "Six Sigma" ...

Summarized the relationship of six sigma quality in the following points:   
  
1. In the past, focused on quality programs to meet the needs of the client and any cost and those companies able to produce high quality products despite the lack of efficiency of internal operations of the companies were paid to achieve quality cost (quality) Example: You may buy an item for $ 800 and be the commodity has been charged with the factory 320 dollars in the process of recycling to achieve the level of quality, so it was felt by companies that quality cost a lot of effort and money and time.   
    
2. The emergence of six sigma is a natural extension of the efforts of quality that is six sigma initiative to develop quality, working on the link between the highest quality and lowest cost of production.   
    
3. The Alsijma six words from the goal of performance is applied to each element of the quality, not on the product as a whole   
When half of the car as a six sigma does not mean that 3.4 million cars from all car defects, but it means that there is a chance for the emergence of 3.4 defect per car per million potential opportunity - short, that quality is focused on the quality of the final product and have the cost of The Six Sigma it focuses on processes to achieve product quality at minimum cost.   
    
4. Can not operate in isolation from the Six Sigma quality, providing quality management six sigma tools and techniques needed to bring about cultural changes and the evolution of processes within the Department and is the first step in calculating the Sigma set expectations and customer requirements, which is known as the critical characteristics of the tree or the quality of the necessities of quality critical-to-quality tree)).   
5. The Six Sigma is not a subject revolves around quality for the same quality, but about providing better value to customers, employees and investors.

Six Sigma principles   
  
1. Customer focus and expanding the concept of customers here to include investors, employees and beneficiaries of the good .... And society as a whole.   
    
2. Making decisions based on facts and accurate data (management based on facts) are used Six Sigma statistical tools such as: repeatability and terraces Map Barreto, maps and the Department of aerodynamic Coehart.   
    
3. Focus on processes and internal activities and processes intended activity undertaken by each facility of any size so that the issuance of an invoice is a process.   
    
4. Effective management based on advance planning, Six Sigma, where he works to transform the (Department of reaction) to the Department (address problems before they occur )   
    
5. Unlimited cooperation between employees per enterprise in order to achieve the desired objectives and rely on teamwork and co-dimension of the competition.   
    
6. Continuous improvement by using scientific tools with a focus on the priorities and initiatives, at least in number and most dynamic (Pareto rule), and those tools and shortened cycle Deming (PDCA) model and Diemiak (DMAIC).   
    
7. Full participation, which confirms the Six Sigma on the participation of every individual in the collective work also emphasizes the importance of communication decentralization and horizontal communications.   
    
8. Prevention rather than inspection which drain human resources and finance.

Stages of the application of six sigma   
    
1. Identification and selection of projects that will apply the method of Six Sigma, and here to be selected important projects achieve real benefit to the business and internal and external customers, and has a priority, and should preferably be the size of a small project.   
    
2. Composition of the Panel, the principles of Six Sigma assignment of staff established the work of improvement not dependent on the improvement of the team from outside the facility, and are selecting team members from enthusiastic staff who have good experiences and a broad spectrum.   
    
3. Composition of the Charter, the Charter is a written document of the problem or project includes all of the Charter with regard to reasons for choosing the project, its objectives, limits, scope, stages, team members and their roles .....   
    
4. Training team where training focuses on the competencies associated with the six Bsijma such as: measurement, analysis, process re-engineering, planning, solving problems

5. Implementation of the process the team will oversee the project and to provide practical solutions and application.   
    
6. Solutions delivery team delivers solutions and results to the official owner (owner of the process), who vows to maintain the gains made by the Panel, and then only in a formal ceremony, members of the team and return to their former or a new project to improve within the enterprise.

