

## Six Sigma

In recent years we've heard a lot about quality control and customer satisfaction - and most recently of a new approach to this called 'Six Sigma'.

---

Wednesday, January 24 - 2007

In our own industry, consumer research, many suppliers now lay claim to a competitive advantage by offering better consumer insights and actionable marketing recommendations rather than simply collecting and delivering data on the consumers in a market.

Before getting into a definition of 'Six Sigma' it is important to keep in mind that today's business environment is changing rapidly due to things like globalization and the instant access to information available through the internet. Hence products and services are changing faster than ever before.

As mentioned by General Electric ( GE ) one of the leading companies to adopt and promote ' Six Sigma' - ' today's competitive environment leaves no room for error ; we must delight customers and relentlessly look for new ways of exceeding their expectations. This is why Six Sigma quality is part of our corporate culture. '

Quality, innovation and new ways of doing business as key elements for business success are also the theme in the popular 2005 book 'Blue Ocean Strategy' by Chan Kim and Renee Mauborgne.

In the 80's, Total Quality Management (TQM) was popular. However, those programs typically soon crashed and burned in many companies. .

'Six Sigma' is an applied methodology for improving business and organizational performance. It uses a specific problem-solving approach and Six Sigma tools to improve processes and products. The methodology is data driven, with the ultimate goal of reducing unacceptable products or events. In other words, 'Six Sigma' is a methodology for minimizing mistakes and maximizing your value proposition to your customers.

Every mistake an organization makes ultimately has a cost - a lost customer, the expense of doing a certain task over again, a part that has to be replaced, time or material wasted, efficiency lost, productivity squandered. It is estimated that mistakes cost organizations as much as 20 to 30 percent of their potential bottom line.

In fact 'Six Sigma' has many definitions; but whichever is used the action focuses at two levels, managerial and technical. At a managerial level, a ' Six Sigma' initiative includes the people, technologies, projects, schedules being managed and coordinated. And for the technical elements of 'Six Sigma' to be effective, management orientation is also looked at.

In summary, the main role of 'Six Sigma' is to improve the following :

- Customer satisfaction
- Work processes
- Profitability
- Speed
- Efficiency

The term 'Six Sigma' originates from the Greek letter used for a Standard Deviation in statistics.

The first step in calculating the 'Six Sigma' or understanding its significance is to grasp what customers expect. The customer requirements or expectations are called CTQs (Critical To Quality).

To better explain the calculation of the 'Six Sigma', let's consider an example of a pizza business. We could define the 4 CTQs of the business as - hot, correct ingredients, on time delivery & undamaged. We would collect that data on, say, 500 deliveries and let's say we find that; 10 were cold, 16 had wrong ingredients, 25 were late and 7 were damaged. To calculate 'Six Sigma', we take the total defects divided by total number of deliveries multiplied by the number of defect opportunities (number of CTQs) i.e.

$$10+16+25+7 / 500 \times 4 = 58/2000 = 0.029 \text{ (DPO: Defect Per Opportunity)}$$

Usually this is expressed as a count in a million opportunities so that would be 29000 DPO's.

For the 'Six Sigma' process to be implemented, a team has to be trained up and roles tasked to each member of the team. All the team members work closely together. However, each one has a specific role and task to deliver. Generally the 'Six Sigma' team is constituted of different hierarchical levels and sometimes martial arts grades are used when referring to these e.g. project team members could be referred to as Yellow Belt, Green Belt, Black Belt, Master Black Belt, and an Implementation leader.

The key objective of the 'Six Sigma' methodology is the implementation of a measurement-based strategy that focuses on process improvement and variation reduction through the application of project recommendations.

According to American Quality Inc. savings per project are typically estimated at around USD 150k to 240k, so by completing 5 to 7 projects per year per Black Belt, a company can add in excess of USD 1 million to the bottom line.

GE first began Six Sigma in 1995, after Motorola and Allied Signal blazed the trail. In 1996, Six Sigma cost GE USD 200 million with a ROI of USD 150 million. The following year it cost them USD 400 million with returns of USD 600 million. And then in 1998 they hit the jackpot ; the programme cost USD 400 million with returns of more than USD 1 billion. GE went on to estimated benefits in the order of USD 10 billion during the first five years of 'Six Sigma ' implementation.

By adopting 'Six Sigma', many companies perform better in every key business metric; whether return on investment, return on sales, employment growth or share price increase. Are there companies here in the Middle East and Africa region ready to join the 'Six Sigma' revolution?