



SIX SIGMA ONLINE  
Aveta Business Institute

# Six Sigma Certification Program

## *White Belt Lesson 1: What is Six Sigma*

There are two ways to define “Six Sigma”. The first is as a quality management methodology that uses different theories and tools to improve upon the processes of a certain business. Simply put, this results in near perfect products and services that meet and/or exceed the expectations of customers or end users, while simultaneously reducing the amount of time, money, and resources put in. In other words, with less input, a greater output will be realized.

The second way to define “Six Sigma” is the statistical way. ‘Sigma’ ( $\sigma$ ) is a Greek letter used to represent the statistical term ‘standard deviation’ which measures the deviations from average in a particular business process. With more ‘deviation’ from normal, comes defective products and services that do not fulfill customer needs and wants. These ‘defects’ end up being returned or requiring resolution, which costs businesses increased time, money and resources in the long run. A 6 Sigma business process produces only 3.4 defects per million opportunities.

This is abbreviated as DPMO within this methodology. In other words, 0.00034% of products produced in a Six Sigma Process are defective. A ‘5 sigma’ process produces 233 DPMO (0.023% defective), a ‘4 sigma’ process produces 6,210 DPMO (0.62% defective), a ‘3 sigma’ process produces 66,807 DPMO (6.7% defective) and a ‘2 sigma’ process produces 308,538 DPMO (31% defective).

As you can see, going up or down even one sigma level can have a great impact on the output of a particular business or organization, and therefore, also their bottom line. It is possible and practical to improve all business processes to 99.9997% perfection with the Six Sigma Methodology!

For many companies, the cost of defects and waste in their modes of operation are usually higher than anyone in the company is aware of. While small errors or defects are occasionally expected, business owners and shareholders may not be seeing the true overall impact that these defects may have on their business dealings.

However, if you can access the number of errors that could be lurking within a corporation’s wide processes and their impact on the cost of productivity, profitability and customer satisfaction, it is clear that these costs multiply dramatically.



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You can't fix a problem you don't know about. Therefore, the first goal of the Six Sigma Methodology is to discover all of the problems within an organization that may or may not be apparent. This is done through much research and data collection. The next step is then to take appropriate action to reduce the number of errors and reworks which are known to cost time, opportunities, money and clients. In this way, the Six Sigma Process translates knowledge and awareness into an open opportunity for expanding business. Often times, more than one problem is found through Six Sigma Implementation. In this case, there are tools used within the Methodology that make it easier to choose which project is the most important to tackle first.

All improvements are done with the ultimate goal of increasing the quality of the business output. There are three key holders of quality; they include the customer, the employee and the process. Customers define the quality of a product or service, as they are the key decision makers. In other words, if your product or service is not up to par, the customer will not buy it. If you have no customers, you will never be successful in your venture. One of the key places to start collecting data is with the customers. You cannot produce what they want and need if you are not directly asking them what they want and need. Universally, customers expect reliability, competitive prices, performance, efficient delivery of goods and services, etc.

The customer or end user must be completely satisfied in all attributes that influence his or her perception of the product or service in question. Business employees are deeply involved in quality as they focus their main energies on satisfying the customers. Business leadership must make a commitment to provide opportunities and incentives for the employees to perform at their best. Employees interact most with these customers, and are often the business' face of quality to the customers. They must be highly trained and capable for the entire process to run smoothly. The actual business process is obviously another important component to quality. The various steps that go into making a product or service could make it or break it; there are often millions of opportunities for mistakes.

If true quality products and services with little to no waste are desired for your business, the Six Sigma Philosophy is the answer. There is a notion held by many managers who believe that dealing with defects is part of the cost of doing business. The Six Sigma Methodology defies these sentiments because Six Sigma Professionals will be able to use theories and tools to systematically discover where defects might occur and devise a plan to minimize these errors before they are made. In the processes, they will also reduce the costs and resources expended to make products and services while increasing customer satisfaction at the same time.



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The most important part of the entire process, is uncovering the gaps or defects in a business process. When these factors are isolated, it is usually clear to determine the basic adjustment required to make the most outstanding, effective and reliable change on the output of the entire process possible. There are many Six Sigma Tools within the methodology that help the Six Sigma Professionals in charge improve the most critical processes first.

One of the most important things to note about the Six Sigma Process is that it does not rely on quick-fix programs to temporarily mask a business problem. It is a systematic methodology of hard work that is fused with a disciplined, factual, data-based and statistical problem-solving method. Therefore, it affects almost all aspects and levels of a company, which can create panic among employees if it is not thoroughly explained, through a process called change management.

It is important for everyone within a company using this process to first adopt the Six Sigma mindset or philosophy, which considers the employees as important assets to the success of the process and the business overall. This process is deeply rooted in teamwork, and every last company employee needs to know the 'why' behind the change in order for everyone to commit to its success. It is important to emphasize to employees that this process is for the benefit of everyone involved. If the company is successful overall, everyone who is a part of it will be able to share in its success.

By transforming the way business processes are viewed, through an understanding of the factors that bring about time wastage, defects, and rework, it is possible to improve the quality of the products and services being delivered to customers. A fortunate byproduct of this process is also an increased bottom line. Therefore, the ultimate objective is to create a six sigma organization that's processes and systems are as close to perfect as possible; 3.4 DPMO or Six Sigma.