



SIX SIGMA ONLINE  
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# Six Sigma Certification Program

## *White Belt Lesson 4: DMAIC/DMADV*

Six Sigma DMAIC: A systematic Six Sigma Process used to perfect business processes already in place.

D: Define  
M: Measure  
A: Analyze  
I: Improve  
C: Control

Six Sigma DMADV: A systematic Six Sigma Process used to create and perfect brand new products or services.

D: Define  
M: Measure  
A: Analyze  
D: Design  
V: Verify

There are two common models used by business executives and Six Sigma professionals to advance and improve quality levels within a company. These are DMAIC and the DMADV methods. Of the two methods that are used, the DMAIC is the more common. Each phase in this model has a significant purpose and different procedures that are used to make sure results are correct. The DMAIC anagram stands for define, measure, analyze, improve, and control. A team is put together to make sure that each phase of the model is completed in the proper order.

The first step is the Define Phase. To be successful and to be able to measure the degree of success or failure, one must have a goal in mind. The first step in the process is to define the goal of the project and the requirements of both internal and external customers. While the team is working in the define phase, they will be searching the company procedures to identify what and where the issues are that are causing the biggest problems. This could mean questioning employees and analyzing procedures more carefully.

During the Measure phase, all pertinent data is collected and carefully stored for future reference. Measuring has to do with quantification. One must be able to quantify the goals of the management and the needs or desires of the customer. If you have no way of measuring against a standard of some sort, then you will be lost at sea during the guts of the project. There must be a point of reference that will allow for accurate measurement. This phase is different from the defining stage specifically because the major goal is information gathering, not defining.



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Six Sigma professionals will go over the data collected and perform statistical tests and apply various Six Sigma Tools during the Analyze Phase. They will be looking for concrete information that undoubtedly shows areas that need improvement. After a Six Sigma Team has set goals and quantified them, analysis can begin.

This step involves looking at options in the existing business process, determining the causes of any errors, as well as the evaluation of corrective measures already in place or those that have been planned to be implemented. This step involves more than simple number crunching. One must be familiar with the overall business process in order to analyze the data sets accurately.

Once the departments that need the most assistance have been discovered, they will move on to the fourth Phase of the DMAIC Process, which is to Improve those areas. The goal of this most important step is to implement solutions that have been created based on the data that was received while identifying issues and brainstorming for usable resolutions. During this step, it is important to implement the plan and let the employees know of the adjustments that will need to be made. Usually, the black belt professional will make sure that during the last and final Control phase, any obstacles that come up are taken care of properly and promptly.

Using the Six Sigma DMAIC model can greatly reduce the defects a company is experiencing, while at the same time improving many aspects of the way the business is run from an administrative point of view. This helps executives run their companies more smoothly and helps employees understand how the company is striving to improve its products and services.

The DMADV (Define, Measure, Analyze, Design, and Verify) process is very similar to the DMAIC; only the last two steps are different. In this model, the fourth and fifth steps are to design and verify the design. Once the previous steps (Define, Measure, and Analyze) have been completed, the Design of new processes that will provide stronger support and problem preventing and solving measures must begin. This will deal with the correction or elimination of the identified error at its root to help bring the business model into alignment with the targeted specifications or goals set forth in step one.

The Verify process is part monitoring and part simulation. If the plan or process has yet to be implemented, then one must try to simulate it to ensure that the error or errors have been eliminated. If the project is in place, then monitoring the changes must be done in order to determine its effectiveness or the necessity to make further changes.



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As you can see, the Six Sigma DMAIC and DMADV processes are all-encompassing and very logically progressive. Most people will not intuitively use these steps properly, which is why there are project leaders in the Six Sigma process who have undergone training to help ensure proper results are achieved by adhering to the complete process.

Corporations work in conjunction with Six Sigma professionals to improve the quality of shareholder relations, job satisfaction and management leadership. Sometimes business owners are confused about what is causing problems within their company. Some of the larger companies may have many departments and many employees to deal with on a daily basis.

The everyday operations and quality of work these employees contribute determines the quality of the output of products and services. When they are dissatisfied or unhappy, they will not do the best work that they can. If managers and supervisors are not paying attention, this can also cause problems with the employees. Procedures and processes need to be accurate and they will not be if the employees have a low level of job satisfaction.