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Implementing Six Sigma efforts

Dr. Ron Pardee
California Baptist University

Jamie Eleaitia Mae Lindsay
Business 340-Management Science

Abstract

Six Sigma is an organization wide program that provides common set of goals, language, and methodology for improving the overall quality of the processes within the organization (Davis &Heineke 2004). Six Sigma main concern is for the customer. What will the customers want? Need? *Six Sigma* has a model that helps *Sigma* get implemented **DMAIC** model (which shown in appendix A). The areas are **D**efine, which is defining the problem. **M**easure which is looking at the data that you are going to measure. **A**nalyze which is looking at the data and examine the data**. I**mproving which is deciding what needs to be improved. **C**ontrol, is the final stage and this stage is where the team i.e. management team makes the proper decision to fix the problems. General Motors are the one company that had the best turn around with *Six Sigma* implemented. Biblical principles discussed in Six Sigma would be converted to Focus, Balance, is Productivity and fulfillment.

Introduction

Six Sigma is defined as a problem- solving methodology (Gygi 2005). Six Sigma helps in minimizing mistakes and maximizing the Value (Gygi 2005).It is an organization wide program that provides common set of goals, language, and line of attack for improving the overall quality of processes within the organization (Davis 2005). Six Sigma shows the different businesses there different opportunities. It is a smarter way to run a business (Holpp 2002).Also, Six Sigma puts the customer first and the data to drive for better solutions (Holpp 2002). Six Sigma is helping businesses improve their business. Six Sigma also means is it used to describe how well the process variation meets the customer's requirements. Standard deviation also means sigma. DMAIC stands for Define, Measure, Analyze, Improve, and Control. The calculations will be discussed in a while in the paper.

Six Sigma targets three main areas (1) Improving customer satisfaction, (2) Reducing cycle time and (3) Reducing defects (Holpp 2002). Improvements in these areas usually represent dramatic cost and saving to businesses (Holpp 2002). Also opportunities to retain customers, capture new markets, and build a reputation for top performing products and services (Holpp 2002). Six Sigma is a Total Management commitment and philosophy of the excellence, customer focus, process improvement, and the rule of measurement rather than burn down feeling (Holpp 2002).

DMAIC Methodology

Define Stage

. The first stage of the DMAIC model is called Define. Define stage deals with the problem solving methodology (Keller 2002). In Defining the problem these key

perspectives such as the project definition, top level Process definition, team formation. These objectives need to be done before the measure stage even takes place. First stage is the project definition, which means find out what the teams project scale, goal and its team members and sponsors, it timetable and its deliverables (Keller 2002). Next step is top level process definition to define its stakeholders, inputs and outputs and broad functions. Tell the stakeholders and the broad members there functions and what they are in charge of and there inputs (Keller 2002). Then, the team formation gets the team together. In this part of the process, the team will need to assemble a highly capable team and focus their skills on a common understanding of the issues and benefits of the proposed project paths (Keller 2002).

During the define stage, the team needs to remember the customer is the important part in this process. Customers could either be internal with in the business or external playing as customers (Holpp 2002). In the define stage, the team needs to construct a diagram, which is called the SIPOC, which means suppliers, inputs, process, outputs, customers. The process the team will be this step will help going to the next level in the DMAIC model…measure.

Measure Stage

The measure stage is a detailed process level map of the current process that is developed (Keller 2002). The stage is also logical follow-up to first stage. This is a detailed map that is somewhat detailed in the define stage. This stage has two main objectives and that is (1) gather data to validate and to quantify the problem/opportunity. Realistically, this is very sensitive and important data for the problem (2) begin testing out the facts and numbers that offer clues about the causes of the problem (Holpp 2002).

In this stage there are three categories that the team puts the products (1) Output or Outcome, (2) Process, and (3) Inputs. In the output stage, this is the end of the process. This will handle all the defects, complaints (Keller 2002). Then Process stage, these are things that need to be tracked or measured. These items usually help the team figure things out. Lastly, the Inputs stage, these processes are things that turn into outputs; which are bad inputs that create bad outputs (Keller 2002). The main stage is to collect data, sampling, and count it (Holpp 2002). Getting involvement from the team is important. Control charts, stem and leaf, confidence intervals and many more statically data will help with this stage (Keller 2002).

Analyze Stage

In the analyze stage, is to make sense of all the information that the team has collected. Some of the objectives would be (1) Analysis of the value stream, the necessary steps that produce value for the customers, (2) Analysis of the sources of variation, and (3) Determination of the process drivers, the little *ys* that correlate to the stakeholder requirements and significantly influence the process output (Keller 2002). The Value stream analysis is the key to Six Sigma success; it means refers to the necessary activities that contribute value to the product or service, as determined by the customers (Keller 2002). Then the processes is mapped with three steps (1) creates value for the customer (2) create no customer value but is required by one or more activities; that includes production, design and delivery. These are called type 1 waste (Keller 2002). Third, a step that creates no customer value and represents the proverbial low hanging fruit. This is called type 2 wastes (Keller 2002).

In the analyze stage, the tools that may be helpful would be the Quality Function Development. This is a matrix that compares the process steps contributed to value, as defined by the customer. Another tool, cause and effect diagram which provides a convenient fishbone format for displaying these roots causes (Heineke 2003). And then follow with an interrelationship diagraph which shows a relationship between the causes (Keller 2002).

Improve Stage

After designing the process, collecting the data, analyzing the data; then the team comes to the next stage called Improve. This stage will be implementing changes and that are necessary for improvement (Keller 2002). In this stage we need to do the new process operating conditions, benefits associated with solutions, the process of improvement.

The tools implemented in this stage would be activity network diagrams, PERT analysis, Five S tool, to reduce the non value added, level loading, and a cause and effect diagram may be used again in this stage (Keller 2002).

Control Stage

In the final stage of the DMAIC model, control stage is where we used new methods must become standardized in practice. Controlling plans are used to define the method of control and ensure all potential sources of variation are addressed. In this stage we can also use flowcharts to help with steps, work instructions, and process maps will help keep track of the team. Training is essential for the control stage to work. This will help ensure methods and procedures, and responsibilities (Keller 2002).

Tools that will help with the control stage would be flowcharts, control charts, process maps, goodness of fit tests and probability plotting to help with statistical data

General Motors with Six Sigma

First of all, Six Sigma is customer focused. Six Sigma main concerns is the customer. It's like a craving for customers. Six sigma continues to see things from and through customer's eyes. Second, Projects produce major returns on investments, General Motors program resulted in the following cost versus returns (Holpp 2002). In 1996 General Motors made over $200 million dollars and in return of $150 million (Holpp 2002). In the following year the company doubled the cost and the returns by $200 million both ways. Finally cost stayed steady and then the returns tripled to hit a record breaking $1 million dollars in returns (Holpp 2002). Jack Welch of General Motors states in an interview:

> "We didn't invent Six Sigma – we learned it. The cumulative impact on the company's numbers is not anecdotal, nor product of charts. It is the product of 276,000 people executing and delivering the result of Six Sigma to our bottom line (Holpp 2002).
>
> Finally, Six Sigma changes how a Management team operates. Six Sigma tells your management team how to do their job: By correcting the problems with the Model. The Six Sigma way tells and helps the team with new approaches to thinking, planning, and executing to achieve results (Holpp 2002).

Biblical with Six Sigma

When thinking about being ethical with Six Sigma, I think of four word that stick out in my brain. First is Focus, meaning to define what is important and never from the path (Jones 2002). For example, using Jesus to be Six Sigma Life Coach, we look at proverbs 4:25 “Let your eyes look straight ahead and your eyelids look right before you.” Which means keep your eyes focused on the plan ahead and try and solve the problem. Another example, Nehemiah was rebuilding the wall; he was focused on the plan. He got all the different people together and they focused to rebuild the wall. Jesus also practiced on focusing on people and keeps growing in wisdom and favor until such time as he was able to effect as far as change (Jones 2002).

The next ethical perspective is Balance, which Jesus wants us to understand how to be stable in an unstable world (Jones 2002). For example, looking in MARK 11:17 “My house was designated a house of prayer for the nations; you’ve turned into a hangout for thieves.” This was said to be the message. Jesus was healing the people in Jerusalem; on the other hand, he was trying to balance the people. Jesus taught us to respect people and their things.

The third ethical perspective is Productivity, which means to bear fruit and remain alive with constantly expanding possibilities (Jones 2002). An example of this would be in Genesis 1:3 “God said, “Let there be light; and there was light.” This means Jesus thought about all the challenges that may come before him. And he put forth an solution. This means this is where everything is.

And lastly, the final ethical perspective is fulfillment. This means to fid joy in the presence of the master (Jones 2002). Simply looking at Song of Songs 2:14 “Let me hear your voice;” Jesus was a man who was respected, created, and had a unique voice, not an echo (Jones 2002). People working sometimes loose there voice when involved in a problem solving tasks. They some time loose fulfillment to have something accomplished. Jesus was wants us to find our voice it may take a life time. But we need to find our voice. Also Jesus is only interested in your voice.

Conclusion

Six Sigma is a customer based tool that will help develop, improve, and help with customer satisfaction. If a company follow the DMAIC model (shown in APPENDIX 1). Six Sigma also shows a company how to develop a team and how to commutate the finding. Jesus used his own form of Six Sigma designed, he measured, and he improved, and he controls us everyday through his word. But he translated to be fulfillment, balance, productivity, and focus. Jesus is our leader.

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Appendix A

DMAIC Flowchart