

Six Sigma for Managers
by Greg Brue
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Discussion Guide

The following discussion questions are intended to facilitate the use of *Six Sigma for Managers* by Greg Brue (McGraw-Hill, 2002) as a training guide in any organization that is initiating Six Sigma or considering it.

Chapter 1. What Is Six Sigma?

Discussion questions:

- What is Six Sigma as a methodology?
- What is six sigma as a statistical concept? How does it translate into a quality percentage?
- What is a defect? What is the importance of this term in Six Sigma?
- What is DPMO?
- What is variation? What is the importance of this term in Six Sigma?
- What are the vital few factors?
- What is a champion in Six Sigma? What are the responsibilities of a champion?
- What is a black belt in Six Sigma? What are the responsibilities of a black belt? What qualifications are required to be a black belt?
- What is a CTQ? Why is it necessary to identify CTQs?
- What is DMAIC?

Chapter 2. Why Do Six Sigma?

Discussion questions:

- What is the cost of poor quality? In what areas would you suspect that poor quality in your unit is costing your organization the most?
- What qualifies an activity as value-added? What activities in your unit or elsewhere in your organization would you consider non-value-added?
- What are the basic steps in benchmarking a process?
- How does Six Sigma benefit employees?

Chapter 3. Setting Business Metrics

Discussion questions:

- What is a business metrics? What business metrics do you have for processes in your unit? What other business metrics might be useful?
- What is an average?
- What is a median?
- What is a mode?
- What is a range?
- What is standard deviation?
- What are specification limits?
- What is process width?
- What is process capability? How is it measured?
- What are control limits? How do they relate to specification limits?
- When setting business metrics, what four questions are basic?
- What is a process map? How does it help a Six Sigma project team?
- What two main concepts govern business metrics? Why are they important?
- What is a baseline? Why is it essential to a Six Sigma project?
- In setting metrics, what is the purpose of benchmarking?
- What is gap analysis?
- What are the five basic steps in setting business metrics?

Chapter 4. Implementing Six Sigma

Discussion questions:

- What is the role of an implementation partner?
- What is the difference between hard dollars and soft dollars?
- Describe the Six Sigma approach to training. What is the basic principle?
- What is a Pareto chart? How is it used in Six Sigma projects?
- What is the role of a master black belt?

Chapter 5. Roles and Responsibilities

Discussion questions:

- What is the key role of executive leaders in a Six Sigma initiative? What qualities do they need?
- What is the key role of champions in a Six Sigma initiative?
- What is the key role of a master black belt in a Six Sigma initiative?
- What is the key role of black belts in a Six Sigma initiative?
- What is the key role of green belts in a Six Sigma initiative?
- What personality traits make a person a more successful black belt?

Chapter 6. The Core of Six Sigma

Discussion questions:

- What are the basic steps in the Define phase?
- What are the basic steps in the Measure phase?
- What are the basic steps in the Analyze phase?
- What are the basic steps in the Improve phase?
- What are the basic steps in the Control phase?
- What is the vital few equation? Why is it crucial to Six Sigma?
- What is the purpose of a gauge R&R?
- What is accuracy in a gauge R&R?
- What is repeatability in a gauge R&R?
- What is reproducibility in a gauge R&R?
- What is stability in a gauge R&R?
- What is the purpose of hypothesis testing? What are the steps?
- What is a dependent variable?

What is an independent variable?

Chapter 7. Quick Overview of Six Sigma Tools

Discussion questions:

- What are three measures of the central tendency of data?
- What is a histogram? When would a project team use a histogram? Why? How could it help in that situation?
- What is a frequency distribution bar chart?
- What is a normal distribution?
- What is bin width? Why does it matter?
- What is dispersion?
- What are three measures of the dispersion of data?
- What is variance?
- What is standard deviation?
- What is a run chart? When would a project team use this chart? Why? How could it help in that situation?
- What is correlation? What is a correlation coefficient? What is positive correlation?
- What is negative correlation?
- What is a scatter plot? When would a project team use a scatter plot? Why? How could it help in that situation?
- Describe the procedure for brainstorming.
- What is a cause-and-effect diagram? When would a project team use this diagram? Why? How could it help in that situation?
- What is an XY matrix? When would a project team use this matrix? Why? How could it help in that situation?
- What is measurement systems analysis? When would a project team do an MSA? Why? How could it help in that situation?
- What is a multivariate study? When would a project team do this study? Why? How could it help in that situation?

- What is a failure mode and effect analysis? When would a project team use FMEA? Why? How could it help in that situation?
- What is design of experiments? When would a project team use DOE? Why? How could it help in that situation?
- What is a control plan?
- What is a control chart? When would a project team use this chart? Why? How could it help in that situation?
- What is the difference between a common cause and a special cause? Why does this difference matter in a Six Sigma project?

Chapter 8. Selecting Six Sigma Projects

Discussion questions:

- What are the two most important criteria for selecting a Six Sigma project? Why are these criteria so important?
- What are the two essential questions to ask about any potential Six Sigma project? Why?
- What are the two purposes of a project problem statement?
- What are the three purposes of a project objective statement? What four points must it include?
- How can a Pareto chart be used in selecting projects?
- What are seven types of activities that would be poor projects in terms of impact or effort?

Chapter 9. How to Sustain Six Sigma

Discussion questions:

- Why is it important to maintain a database of lessons learned?
- What should be communicated about Six Sigma in order to help sustain the initiative?
How?
- What are two good reasons for training all of the people in an organization as green belts?
- How can an organization expand Six Sigma beyond its walls?

Chapter 10. Six Sigma Proof Positive

Discussion questions:

- What training should champions receive?
- What training should black belts receive?
- What training should green belts receive?
- What is Design for Six Sigma?