



Writing an Effective Problem Statement

by John Parker

A **problem statement** is a concise description of the issues that need to be addressed by a problem solving team and should be presented to them (or created by them) before they try to solve the problem.

In project management, the problem statement is part of the project charter and defines what the problem is so that the project team and stakeholder can focus their attention on solving the problem. It is important to have a good problem statement before starting eliciting requirements for a solution. A good **problem statement** should answer questions such as:

- What is the problem?
- Who has the problem?
- Where does the problem occur?
- When does the problem occur?
- What does the problem impact?

A good **problem statement** should be:

- **Concise.** The essence of your problem needs to be condensed down to a single sentence. A reader of the project statement should be able to say "Aha!! Now I now understand the problem."
- **Specific.** The problems statement should focus your thinking, research, and solutions toward a single population or issue.
- **Measurable.** Problems can be measured in terms of degree and frequency. The strongest problem statements incorporate measurable aspects of both the degree and frequency of the problem as it exists.

- **Specify what is impacted.** The problem statement should identify the population affected by the problem.

Let's examine the steps for creating a good problem statement.

- Write down your problem or current state. Don't worry too much about quality at this point – simply making a start is significant.
- Expand on the problem by asking the following questions:
 - Who does it affect / does not affect?
 - What does it affect / does not affect?
 - How does it affect / does not affect?
 - When is it a problem / is not a problem?
 - Where is it a problem / is not a problem?
- Re-write your problem statement based on those answers. It may consist of several sentences or a set of bulleted items.
- Try to revise the bulleted list or initial problem statement into a single clear sentence. This might take a couple of attempts but stick with it. Finally, review your new problem statement against the following criteria:
 - Focused on only one Problem.
 - One or two sentences long.
 - Does not suggest a Solution.

You should now have a concise and well balanced **Problem Statement** ready for a brainstorming session. It should be unambiguous and devoid of assumptions. It will enable you or your group to focus in on the problem and provide the foundation for the team to begin work toward solutions that truly fit.

A Simple and Effective Way to Display Data

The check sheet

The check sheet is a simple and effective tool useful in lean Six Sigma projects. It is sometimes referred to as a concentration diagram or location plot. It is a handy tool for qualitative and quantitative data gathering and analysis. Check sheets help to systematically collect and organize data and are useful in all phases of the define, measure, analyze, improve, control (DMAIC) statistical and analytical method used in lean Six Sigma.

Check sheet vs. check list

People sometimes confuse a check sheet with a check list. The list we use for groceries and the report you get from the auto repair shop with items checked off after service (oil, filter, tire pressure, tread, etc.) are examples of a check list. The following table highlights some key differences between a check list and a check sheet.

CHECK SHEET	CHECK LIST
A tally sheet to collect data on frequency of occurrence	A tool used to ensure all important steps or actions have been taken
Custom designed by user	Often a standard form
One of seven quality tools	Not one of the seven quality tools
Example: to document reasons for interruptions in operating room	Example: All items required for a surgery are in the case cart prior to the operation.

When to use the check sheet

Using a check sheet is appropriate when the data can be observed and collected repeatedly by either the same person or in the same location. It is also an effective

tool when collecting data regarding frequency and identifying patterns of events, problems, defects, the location of the defect, and defect causes.

Types of check sheets

Commonly used check sheets are tabular check sheets or tally sheets, location check sheets, and graphical or distribution check sheets.

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Tabular check sheet or tally sheet

The tally sheet is commonly used to collect data on quality problems and to determine the frequency of events. For example, the tally sheet is useful for understanding the reasons patients are arriving late for appointments, the causes for delays in getting lab results back, etc. It is also useful in determining frequency of occurrence—such as the number of people in line for blood tests at 6 a.m., 6:15 a.m., etc.—in order to understand staffing needs.

Location or concentration diagram

When you rent a car, you probably receive a document with the sketch of the car which allows you to circle any damages, dents, or scratches on the car with a corresponding mark on the diagram. This is an example of a location diagram sheet as shown in figure 1.



Figure 1: Location diagram sheet

A variation of this could be to mark directly on the form where a mistake occurs. For

example, if information is missing on an application, you could mark it directly on the form.

Graphical or distribution check sheet

Using the graphical form, the person collecting the data is able to visualize the distribution of the data. For example, the number of people in line at the registration desk at 15-minute intervals could be counted to determine the staffing needs and the size of the waiting room. See figure 2.



Figure 2: Graphical form

Advantages of using the check sheet

The check sheet is a simple and effective way to display data. It is a good first step in understanding the nature of the problem as it provides a uniform data collection tool. It is very useful to help distinguish opinions from facts in the define and the measure phases of DMAIC.

Lean Tips

Know Your Processes

You can't make improvements on something if you don't really know what is going on with it. This is why you should have a clear understanding of everything that is happening in the facility. A great strategy for this is to employ value stream mapping. This will help you pinpoint where all the value for your products is added so that you can eliminate any waste that is involved.

Keeping your value stream maps updated and accurate is important.

Every time a change is made to an area, for example, make sure you know how it is impacting the value add to that area. This

will ensure you are always evaluating an accurate portrayal of your facility so you can make the needed improvements on an ongoing basis.

Celebrate Success; Learn From Failure for Goal Achievement

Accountability for goal achievement is important, but if employees are afraid to fail they will tend to hide bad news or shift blame—which are potentially fatal conditions for an organization. Frequent feedback and monitoring will minimize the risk of failure. Encourage and equip managers to take a coaching role, including creating an open environment where employees can admit and learn from mistakes.

Setting Goals Builds Alignment and Keeps Employees Focused

Perhaps the most powerful aspect of goal setting is its potential use in building an aligned workforce, equipped, empowered, and motivated at all levels to work together to achieve its vision for the future. Setting goals can provide purpose and challenge to energize people to apply their efforts in a specific, planned direction. Well-set and monitored goals that are aligned holistically can put your organization on track for increased employee engagement, productivity, and progress toward achieving its vision.

Seek The Wisdom Of Ten People Rather Than The Knowledge of One.

Much has been written about the power of group thinking. Whether it involves seeking one or two other people's opinions, holding a meeting with others, or more formal brainstorming or mastermind groups, there is power in numbers.

If you want to find out how to be successful at something, as someone who has already done it. Better yet, gather several people who have already done it. With libraries, the internet, and other resources available today, we have more opportunities than ever to gather the wisdom of others