

Cause & Effect Diagram

A cause & effect diagram, also called a fishbone diagram, shows the relationship between cause and effect. The possible causes of a problem or condition are graphically displayed, in increasing detail, in order to identify the root cause(s).

Use a cause & effect diagram to...

Aid in finding the root cause of a problem by identifying all the possible causes and symptoms.

Investigate a complex problem where it is not obvious if you are dealing with causes or symptoms of an issue.

How to build a cause & effect diagram...

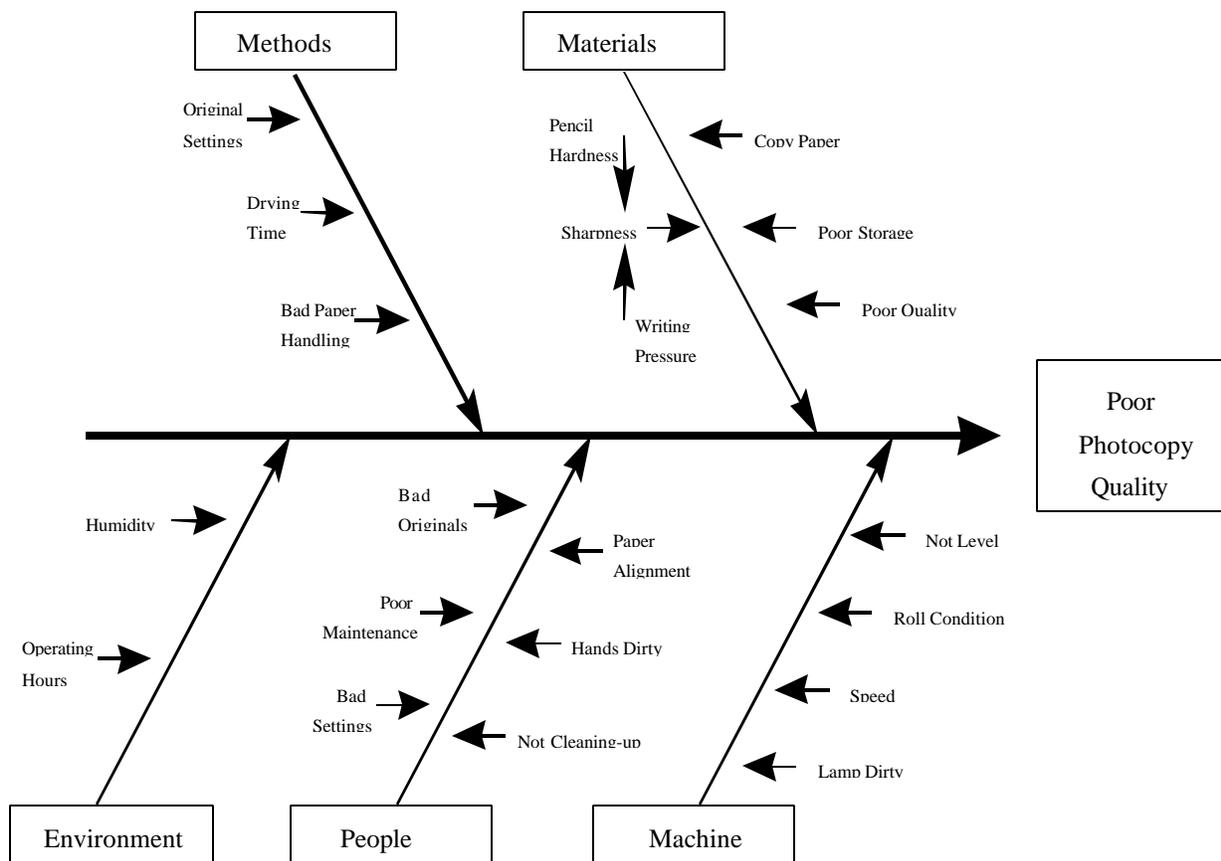
1. Generate as many possible causes of the problem as can be determined through brainstorming, or by data collected on a check sheet.
2. Write the problem statement in a box on the right side of the paper, flipchart sheet, or whiteboard.
3. Draw the major cause categories or steps in the service or production process as lines off the backbone (main line) of the diagram, and connect them to the backbone. There are traditional categories for a production process (methods, materials, and people) and a service process (policies, procedures, plant, and people). Environment and measurement (calibration and data collection) are often used in both process types. Categories should fit the problem—do not get tied to the same set for different types of problems.
4. For each major cause category or step in the process, ask the question, “what causes this to happen?” Repeat this process for the next level of detail until you run out of causes. Some causes may seem to fit in several categories, although they should best fit in only one. If you cannot decide, put them everywhere they seem to fit, and see how they work out in the end.

5. Test for root cause(s) by one of the following methods:

- Look for causes that appear repeatedly within major cause categories, or across categories.
- Determine the root cause by a consensus process, such a Nominal Group Technique.
- Use a check sheet or some other type of data collection method to gather data on the relative frequencies of the different causes.

An Example of a Cause & Effect Diagram

The Problem is Poor Photocopy Quality



Your Example: Using a cause and effect diagram, could you choose a condition or a problem in your organization and identify all of the possible causes as well as the primary, or root cause?