

Root Cause Analysis

Tools for Root Cause Analysis



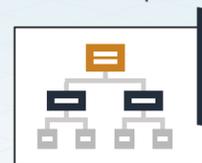
DEFINE THE PROBLEM

- Assemble the team
- Interview individuals who have insight into the problem
- Review the data
- Develop problem definition



MAP CURRENT PROCESS

- Interview individuals doing the work
- Review lab documents
- Create and/or expand flowcharts



DEVELOP SOLUTION

Consider solution types:

- **Stronger**—Make physical changes to environment or redesign process
- **Intermediate**—Provide information at point of need
- **Weaker**—Provide training, warnings, and additional checks

Interview key players and stakeholders about feasibility of various options



IMPLEMENT SOLUTION

- Identify possible sources of resistance
- Develop a “change management” approach
- Develop a plan and schedule for implementation
- Implement



FIND ROOT CAUSE

Choose the most appropriate tool, such as:

- **Flowcharting**—Treat each step as a possible cause, and break into smaller steps
- **Five Whys/Fault Tree**—Identify possible causes at each level of the system
- **Cause-and-Effect Diagram/ Fishbone Diagram**—Brainstorm a list of possible causes

Select the most likely cause(s) based on the possibilities and the evidence



ASSESS EFFECTIVENESS

Choose an assessment approach such as:

- Monitor an established metric
- Perform a focused internal audit
- Set up a simulation/experiment

Example: Announce a condition, and see if people do the right thing—(aka, “Fire Drill” method).

Make necessary changes



TOOL	DESCRIPTION
<p>Brainstorming</p>	Brainstorming is a joint undertaking by a group to generate a number of creative and practical ideas from different perspectives.
<p>Fishbone Diagram / Cause-and-Effect Diagram</p>	A fishbone diagram is a tool to show different possible causes that may be contributing to an outcome or event. It prompts the users to think of many areas of possible causes, beyond the obvious.
<p>Five Whys / Fault Tree</p>	Five Whys/Fault Tree is a set of tools that share a common characteristic: They each take an event or problem, and continually look for more basic reasons or causes by asking why.
<p>Interviewing</p>	An interview is a way of eliciting specific information surrounding an event or a process from frontline staff.
<p>Process Mapping</p>	Process mapping is an exercise to identify all the steps and decisions in a process in the form of a diagram.
<p>Six Thinking Hats</p>	<p>Six Thinking Hats is a tool created by Edward de Bono to encourage creative and unconventional thinking about a topic. It encourages teams to look at a problem from different perspectives. It also pushes individuals out of their typical mode of thinking. The six hats correspond to the following different thinking modes:</p> <ul style="list-style-type: none"> • White—Factual, as in “black and white” information • Red—Emotional, gut feelings • Black—Negative, pessimistic • Yellow—Sunny, optimistic • Green—Creative, fertile • Blue—Big picture, higher perspective (view from the sky, from above)

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