

CTQC Tree Diagram

What: The Tree Diagram is a useful tool for identifying the specific tasks that must be completed in order to reach a goal. CTQC Trees are used in virtually every Six Sigma project as the primary mechanism for turning general customer "wants" into specific Critical-To-Quality requirements. Starting with a general goal, the Tree Diagram moves from general **WHATs** to specific **HOWs**. It first identifies intermediate categories of "drivers" - more specific expressions of customer wants - then breaks down those drivers into further sub-categories until customer wants can be expressed as meaningful, measurable and actionable characteristics - CTQCs.

When: This is used during the Define phase of the DMAIC improvement cycle for translating "Voice of the Customer" (VOC) information that is often communicated as general wants and needs into specific Critical to Quality Characteristics, or **CTQCs** (also called CTQs).

How: 1) **Gather the right team.** Identify participants that can provide useful knowledge and skill to developing the Tree diagram.

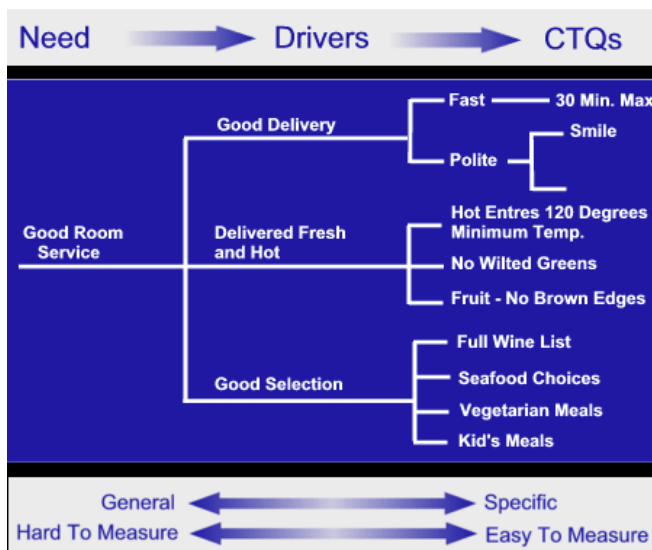
2) **Set up the work space** – You will need a sticky wall, flat wall, whiteboard, or table top with paper and markers. Make sure that everyone can see while you build the diagram.

3) **Define the goal.** Discuss and document the goal before you start developing the Tree.

4) **Set the first block - your goal.** Start with the **Big What** – a general goal statement. If you are using the Tree Diagram to identify CTQC's, the "what" statement may be the raw **Voice of the Customer (VOC)** - the high level need or want.

5) **Build the Branches – Need & Driver.** Start moving from **What** to **How** by identifying the first level of detail - sub-headings of drivers. What is the Need, Driver is How that need is generated. This should be based on VOC data, and may also involve elements of brainstorming. Record the drivers, and then move to the next level of detail.

6) **Next Level Need & Driver.** Break each sub-heading (driver) into greater detail by asking the question: "What would this mean?" Remember, you are moving from general Whats to specific Hows. Depending on the nature of the information available, this activity may require extensive probing, interviews, or focus groups.



7) **Finalize CTQCs.** Now we have identified a specific CTQC that can be measured and acted upon. Moving to the next level of HOW detail takes us into the design realm - specific product technologies and component decisions to satisfy the CTQC of "page loads in 3 seconds or less on broadband connection".

8) **Look for holes.** As a final step, when the CTQC Tree is completed, circle back and review the diagram for obvious omissions. Read the diagram from most specific to general and ask: "Will these characteristics lead to these results?"