Why? → Why? → Why? → Why? → Why?

Root Cause ←

5 Whys Method

The 5 Whys method is a **simple and powerful method** you can use to dig deep into the people you design for so you can uncover useful insights about their behavior, needs and goals. You can even use the method to understand the underlying causes of complex, global problems as hunger and pollution.

When You Can Use the Method

We use the method when we want to do a **root cause analysis** to determine the **underlying causes** of a problem, need, goal or behavior. We use the method for problem solving, for improving the quality of a product and for troubleshooting.

How You Can Use the Method

01 Start with **one problem, need or goal** and ask why it is occurring.

02 Quite literally, you ask the people you design for or the people who're involved in a problem you want to investigate for "**Why?**" whenever they explain something to you. Each time you ask "Why?," you will prompt them to re-evaluate their position and dig a little deeper into their own reasoning. It may seem a bit odd to keep asking "Why?" at first, but rest assured it will uncover great insights about people's goals and problems and will allow you to dig deeper to find the root causes.

03 Investigate **one cause–step by step**. Don't jump to conclusions.

04 Ensure that each answer is **based on solid knowledge** and facts.

05 Distinguish **causes from symptoms**.

06 Pay attention to each **cause-and-effect** relationship.

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07 Often problems have more than one root cause. This is why it's important that you **continue to search for causes**, **even after you have found one root cause**. You do not stop. You ask why again, and again, and again. You keep on asking until you have uncovered many underlying causes. Of course, you'll not need to ask "why" exactly five times. The name of the method amplifies that we need to keep on asking and searching for the causes even after we've found the first one or two reasons. Even if you think you already know the answer, you should still ask "Why?"!

08 You've often reached the first root cause when people say: "**I don't know**." However, it's not possible to get to the very, very bottom — because we're dealing with interconnected complex systems. So what we need to do is get at the lowest level that we can actually do something about.

09 **Error and accident investigation**: Once you've dug all the way down to one root cause, you ensure that the root cause did indeed led to the error or mistake you investigated. You reverse your result of the analysis with the expression "and therefore."

10 The more you **practice** the 5 Whys method, the more you'll get used to this idea and the more comfortable you'll feel asking your interviewees, users and field experts "Why?."

11 Create an atmosphere of **trust**, **honestly and recognition**. Don't judge or critique. We're all part of this process to solve a problem or create a better design or service.

What You Should Be Aware Of

The 5 Whys method does not guarantee success, but you can leverage the power of the technique if you take the following considerations into account.

01 Be aware that the question why is ambiguous and can lead to **different answers by different investigators**.

02 Don't stop too soon. There's a tendency to stop too soon. People often stop asking when they don't understand the answer. You should continue, record the answers and get help in analyzing them by field experts afterwards.

03 The method can **blind you into pursuing and finding only one single cause** whereas most complex problems and design tasks have multiple, complex causal factors which you should factor in. If you're investigating an accident such as a plane crash or a nuclear accident, you should be aware that there's a tendency to stop seeking for underlying reasons as soon as you've found one human error. However, you should continue to ask why. Usually, there are several causes in accidents. If you encounter a human error or a worker's inattention, you should dig into why the human error occurred and what circumstances led to it. Then afterwards you ask why those circumstances happened. You would be surprised to see that you can often find more than a handful of deeper root causes of accidents. This understanding is the only way you can make a proper redesign of the system and procedures to avoid future accidents.

The Origin of the Method

Sakichi Toyoda developed the method and Toyota Motor Corporation used it as part of the Toyota Production System to improve their quality as they developed their manufacturing methodologies. The goal of the problem-solving technique was to understand why new product features or manufacturing techniques were needed. The method was not developed for root cause analysis. As an example, Toyota used the process to examine and address the problems with a welding robot.

A robot has malfunctioned in a factory — see how the 5 Whys method helps to dig deep into the root cause of what happened:

"Why did the robot stop?"
The circuit overloaded and caused a fuse to blow.

"Why is the circuit overloaded?"
There was insufficient lubrication on the bearings, so they locked up.

"Why was there insufficient lubrication on the bearings?"
The oil pump on the robot does not circulate sufficient oil.

"Why does the pump not circulate sufficient oil?"
The pump intake is clogged with metal shavings.

"Why is the intake clogged with metal shavings?"
Because there is no filter on the pump.

Of course, while the example above is of a mechanical nature, the 5 Whys method is also extremely effective as a broader iterative problem-solving method.

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- How designers can improve the world
- How to use human-centered design to solve global challenges
- Why we evolved from User-Centered design to People-Centered design
- The difference between Wicked Problems and Complex Socio-technical Systems
- How to focus on people when you solve complex global challenges
- What feedback loops are and why they are so important
- How to tackle major problems by muddling through and taking small steps to generate successful innovative results

If you understand **why human-centered design is so important**, learn from its history and integrate its principles into your work, you will produce positive results that enhance peoples' lives. It can be done. So let's begin.

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