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## Digging Beneath the Surface: 3 Techniques for Identifying the Root Causes of Operational Problems

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### INTRODUCTION

Every state or local government team encounters problems in their day-to-day work — it's inevitable! But oftentimes, the solutions that governments design address only the symptoms of a problem rather than its root cause. You'll need to dig deep beneath the surface of the issue to really figure out what's causing it.

Imagine you sit in a city's IT department. Residents are having trouble applying for parking permits online, and you're responsible for fixing the issue. You have some anecdotes: the application form not working and users not receiving permits. But you don't understand all the dimensions of the problem from these instances. You'll want to know:

- What exactly is the problem?
- Are there multiple problems contributing to the issue?

- Is the website confusing and resulting in user error?
- Is the problem only occurring for one specific type of permit? When did the problem start?
- Did something specific trigger it?

Most times, framing a problem statement requires deep exploration.

In this Quick Read, you'll learn three techniques to dig deep into root causes. You'll learn to understand how to create user-centric problem statements and design solutions that address the root cause. The techniques are\*:

1. Asking the Five Whys
2. Asking the Four W's
3. Using fishbone diagramming

## Four Reasons to Invest Time Identifying the Root Causes

1

To design better resident solutions instead of patchwork fixes that target one symptom of a problem but allow it to creep up again later. This saves staff time and agency money because staff don't have to repeatedly deal with the same problem.

2

To creatively prompt your team to think more deeply about what motivates the staff to act in specific ways. Developing creative approaches to problem solving pays dividends with your team. You'll be more equipped to take a more creative approach to process improvement, stakeholder engagement, and even data analysis.

3

To reduce your team's reliance on problem-hopping, or constantly shifting focus from problem to problem without fully solving anything. Identifying the root cause may help your team learn how to get to the bottom of issues and stick with a solution.

4

To build trust with your team and residents. A robust root cause analysis is more likely to involve multiple stakeholders and generate a solution that suits the problem. This yields better results for the staff and residents who had to deal with the problem's impact. Once you've established this trust, it's easier to generate buy-in for future fixes.

### Technique 1: The Five Whys

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**The Five Whys** is an iterative, interrogative technique used to explore the cause-and-effect relationships underlying a particular problem. It's a simple technique: Repeat the question "Why?" five times (or however many times needed) to get to a root cause that feels right. This root cause may be completely different than what you initially suspected, or it may make you realize that your solution is only addressing a symptom of a problem.

This technique is often applied to complex and ambiguous problems that include an element of human behavior, which we call **adaptive**

**problems**. On the other end of the spectrum, problems that can be solved with a technical solution or the knowledge of experts are called **technical problems**. Consider that a problem may first appear to be technical, but then you discover a complex human dimension — it's probably an adaptive problem masquerading as a technical one.

Let's look at a couple examples of the **Five Whys** technique in practice.

## Example 1: Process Problems: Hiring

**Problem Statement:** Cloud City’s Human Resources (HR) department has delayed hiring a new manager to oversee Cloud City’s Arts and Culture grant program by more than a year. This negatively impacts the city’s goal of more residents participating in free or low-cost art, music, and community theater programs.

<b>WHY</b> were you delayed?	No strong applicants applied or interviewed for the job when HR posted it last year on the Cloud City website.
<b>WHY</b> were there no strong applicants?	HR believes that only a small subset of qualified candidates became aware of the job opportunity.
<b>WHY</b> didn’t qualified candidates hear about the job?	HR only advertised on our Cloud City website job board and in the local newspaper. We also opened it up for internal applicants to apply.
<b>WHY</b> didn’t we spread notice of the job opportunity more widely?	HR thought that the Arts and Culture Department would do more to publicize the posting because they have subject matter expertise. HR hasn’t hired specialized roles like this recently, so we don’t have a good idea of where to advertise beyond the usual channels.
<b>WHY</b> didn’t the Arts and Culture Department help publicize the job opportunity?	The Arts and Culture Department didn’t realize they could suggest additional platforms to advertise jobs in their department. They also didn’t know that HR has a budget for advertising jobs and that HR could take their suggestions for outreach beyond their standard approach.

From this exercise, we can conclude that the root cause of the problem isn’t a lack of interest in the role. The **Five Whys** technique revealed that there was a lack of alignment and clarity on which team should lead advertising for this unique position.

The solution to this updated problem is very different from the solution for the initial hypothesized challenge. In this case, you want to make it clear that the HR department should reach out to other departments to compile a marketing strategy for promoting important job postings.

Without this problem exploration you might have made some very different assumptions, like working at Cloud City isn’t a desirable career or that another problem is delaying the launch of the grant program.

## Example 2: Outcome Problems: Staff Performance

<p><b>Problem Statement:</b> Cloud City opens five outdoor pools for residents to enjoy during the summer. This year more seasonal lifeguards are calling in sick or quitting part way through the summer, which means pools close at the last minute. Many residents have complained.</p>	
<p><b>WHY</b> have pools been closing early?</p>	<p>An increase this summer in the number of lifeguards calling in sick at the last minute or quitting part way through the summer. We need multiple lifeguards on staff to keep pools open.</p>
<p><b>WHY</b> is absenteeism increasing?</p>	<p>We changed a major staffing component this year. All shifts require a 35-hour/week or more commitment when previously we offered 15-hour/week shifts.</p>
<p><b>WHY</b> did we change staffing schedules?</p>	<p>Two reasons:</p> <ol style="list-style-type: none"> <li>1. We thought staff would appreciate more work hours</li> <li>2. We thought we wouldn't have to train so many lifeguards if we hired fewer lifeguards who take on more hours of work</li> </ol>
<p><b>WHY</b> were you hesitant to train many lifeguards?</p>	<p>Training lifeguards is a major time commitment for our team. We only have a single week to do it in late May before the pools open. There are only so many people that can be trained at once.</p>
<p><b>WHY</b> can the training only be done during that one week?</p>	<p>Cloud City's public schools lease and use the pools for regional swim meets during most of the spring. It was hard work to navigate around their schedule to find time for our lifeguard training.</p>

This problem is far more nuanced than it appears at first glance: that staff are shirking their responsibilities. While there may be multiple reasons to consider, exploring the problem's root cause allows you to explore whether full-time staffing requirements are truly what your staff wants at this time. You could conduct a staff satisfaction survey as opposed to jumping to any accusations. It also sounds like Cloud City may need to renegotiate pool usage with the local school district.

As you get started asking the **Five Whys**, keep the following tips in mind:

- **Write a strong problem statement.** Your problem statement should include the problem's real consequences that feel meaningful and important for many stakeholders in your government, not just for your immediate team.
- **Dig deep to explain the *why* behind each reason given in response to the previous "Why?" question asked.** You may not know the *why* immediately and may need to ask around to gather more information.
- **Continue asking "Why?" until all stakeholders agree that you have reached the root cause.** It's imperative to build consensus around the root cause so that you can generate buy-in for the eventual solution. Keep digging until you find the root cause.
- **You can use this technique individually when you encounter a problem or as a group exercise.** It's common in group exercises to suspect a few different *whys* at each stage, and you may arrive at more than one root cause.

## Technique 2: The Four W's

Asking the **Four W's** invites you to understand the perspectives of the end users who are most impacted by the issue to explore a problem. This technique involves asking four questions beginning with W:

1. **Who** is experiencing the problem?
2. **What** is the problem, as you've observed it or heard it from users?
3. **Where** does the problem occur?
4. **Why** does it matter to the end user (and to your department, agency, or government) and need to be addressed?

Answering these questions can help you develop the problem statement you'll eventually include in a solicitation. It can also help you think more deeply about how different groups of end users

are impacted. End users could be local businesses struggling to navigate requirements or processes; or government staff manually combining data sets from different systems when a simple tech integration could produce this data.

But most often, those end users are the residents of your community who may be facing challenges accessing a senior meal program, enjoying park facilities overgrown with weeds, or crossing a busy intersection without a crosswalk.

Let's now consider a new problem statement and examine it using the Four W's to flesh it out further. Below you'll find the problem statement and sample notes from a meeting in Cloud City using the Four W's:

**Problem Statement:** One of Cloud City's vendors for trash pickup, Acme Recycling and Trash, Inc., is consistently missing trash pickups on five specific blocks. Many residents complained.

**WHO** is experiencing the problem?

Residents on the following streets reported to 3-1-1 that their trash hasn't been picked up for the last five weeks. But not every resident is going to report issues to 3-1-1. I wonder if this problem is affecting others too – and whether this has been going on for longer than five weeks. The vendor took over this service area six weeks ago.

**WHAT** is the problem as you've heard it?

Residents have told us that their trash is not being picked up consistently. The vendor sometimes comes on the wrong day when residents haven't put out their trash or residents have never had their trash picked up. One resident told us, "I put out my bags on trash day, and they sat outside in the hot sun for five days. By then the rats had already eaten through the trash bags."

**WHERE** does the problem occur?

The blocks where these problems are occurring are all completely residential. Residents put out their trash expecting it to be picked up. When the trash is not picked up, residents must take it to a garbage facility themselves (which is especially challenging for those without cars), or it rots on the street for days.

**WHY** does it matter to the user that the problem be addressed?

For residents living in the service area: frustration, time wasted taking trash to the Cloud City garbage facility, health hazards.  
For other residents: an unpleasant street environment when visiting or doing business in the service area, (potentially) a citywide increase in the number of vermin and pests.  
For city leaders: political risk (picking up trash is one of the most basic functions of city government), unflattering local media coverage.

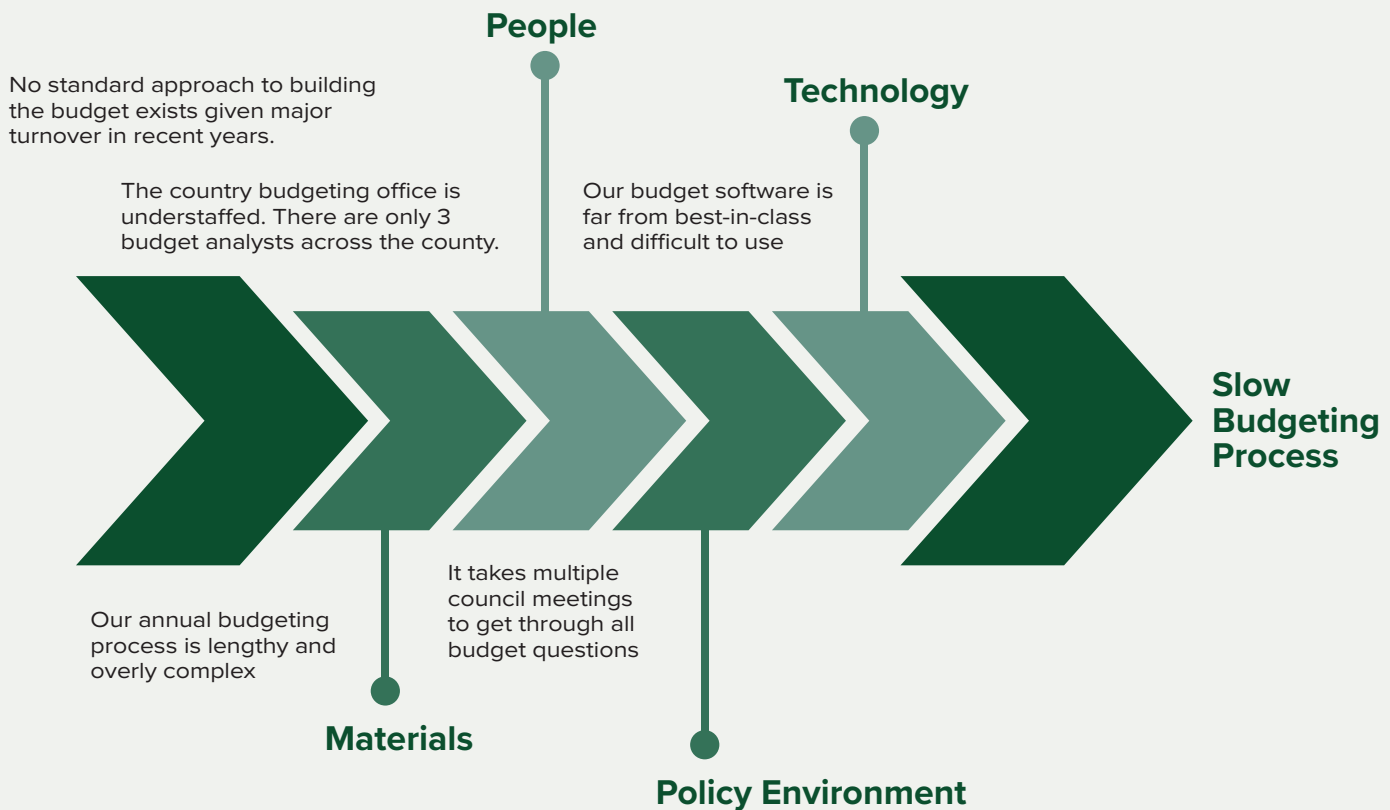
### Technique 3: Fishbone Diagramming

Creating a fishbone diagram is another way to visualize the root cause(s) of a problem by grouping potential causes into various categories and considering deeper contributing factors.

Start out by writing the problem statement at the head of the fish. Next, note possible contributing causes on the bones of the fish and group them into thematic categories (e.g., technology issues; rules, procedures, or policies; resource constraints). List potential sub-causes by adding smaller branching bones off each cause. The Five Whys technique is an effective way to drill down into these sub-causes.

This technique can help teams envision very specific root causes that stem from underlying process and systematic problems resulting in sub-optimal outcomes. The exercise often reveals that there may be three or more root causes all contributing to the same complex problem.

Below is an example of a fishbone diagram that a government team might draw on a whiteboard to interrogate contributing factors to a slow budgeting process. Potential causes span across different categories: people, technology, materials, and policy environment.



## Conclusion

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Although it may seem counterintuitive to spend so much time thinking about the problem, investing time upfront to carefully diagnose the problem pays big dividends in the long run. When you identify the root cause of a problem, you're empowered to design a solution that tackles more than just the symptoms.

The three techniques described in this Quick Read can help you get started conducting this root cause analysis. Asking the **Five Whys** and the **Four W's** can help you go beyond the obvious to dig deeper into what's behind a problem from the perspective of the people experiencing it. A **fishbone diagram** can help you organize those findings clearly or reveal new contributing factors you may not have considered.

These techniques equip you and your team to design human-centered solutions to tackle resident concerns.

*\*While we're big fans of these techniques, we certainly didn't invent these methods. We've deployed them successfully in our government partnerships. Click the links to read more about the [origins of the Five Whys technique](#), the [Four W's](#), and [fishbone diagramming](#) (also known as Ishikawa diagrams).*

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