

Module 3: Problem Definition

Welcome.

In this module, we start working together to learn the art and science of problem definition - the first and most essential skill of the effective public entrepreneur.

Although it seems obvious, most of us – if we are honest - aren't very rigorous in defining the problem we are trying to solve.

Instead, we prefer to jump to the solution -- the bill, the app, the grant, the policy -- that we are proposing, and start lobbying for its implementation.

But, when we fail to define the problem adequately we can end up pursuing solutions that, no matter how innovative, simply do not work and fail to address the root cause of the problem.

In contrast, good problem definition helps us to be clear about our ultimate goals. It enables us to identify actionable and specific opportunities where progress can be made within larger, seemingly intractable issues, and, when undertaken collaboratively with stakeholders and partners, it invites collaboration through a compelling statement of what we are trying to accomplish.

This short introduction to problem definition will enable you to:

1. Understand why problem definition matters; and
2. Describe and apply a participatory process for defining the problem

On the website, we have blank templates for the exercises we describe in this video for you to use.

Okay, let's get started with an example.

Recently, a government official I know was developing an innovative program to reduce school absences in his city. His plan was to send text messages to parents to remind them that school attendance was mandatory. He was excited about instituting this new approach for “nudging” people to change how they act in the hope that it would be more effective at combating truancy than simply legislating required attendance.

But the text messaging solution assumed that the problem was parental behavior. He believed, as he put it, parents were “taking their kids to Disneyland on vacation during the school year.”

Yet there was no data to suggest that going on vacation was the root cause of the problem.

In fact, the real causes of lagging student attendance were more likely related to parental neglect or a lack of transportation. As a result, the text messaging solution likely wouldn't solve the problem of attendance.

In fact, the real causes of lagging student attendance were related to parental neglect, bullying and a lack of transportation. As a result, the text messaging solution likely wouldn't solve the problem of attendance. And my friend never got his idea off the ground, having failed to convince anyone to do the project because he didn't define the root causes and he didn't do so in collaboration with others.

By contrast to that state, in Oregon, the Department of Education, together with other state agencies, drafted a plan aimed at quantifying and addressing student absenteeism. The agencies consulted substantial literature and research on the subject of chronic absenteeism to determine the root causes, allowing officials to properly define the problem in order to create a targeted framework for solving it.

The key takeaway here? When we start with an incorrect definition of the problem, a project, no matter how innovative the solution, will be less likely to succeed.

Problem definition has long been recognized as the first and essential step in any rational policymaking process – in fact, in any problem-solving process.

Yet, despite its acknowledged importance, policymakers rarely pay enough attention to the art and science of problem definition. And in a public context, it is especially important for problem definition to be undertaken with the residents who are most affected by the problem.

As Albert Einstein famously said, “if I had one hour to save the world, I would spend 55 minutes defining the problem and only 5 minutes on finding the solution.”

So what exactly do we mean by “problem definition”?

Problem definition is the process of articulating a specific and actionable problem and identifying the root causes of that problem by using data, research, and collaboration.

A sound problem definition – one that provides clear direction for a project - is a multi-stage process that always requires multiple drafts to arrive at.

So let's work together to create a problem definition for your own work.

To create a problem definition we will start with a four step process.

1. First, we move from an issue to a problem.
2. Second, we articulate the root causes.
3. Third, we identify those most affected by the problem.
4. Finally, we reframe the problem.

In later modules we will talk more about how to build an evidence base to support our definition of the problem. Let's briefly explore each of these steps.

The first draft of your problem definition is designed to get past a vague statement of the issue to articulate an actionable problem that lends itself to concrete solutions.

So first, write down the issue you are trying to solve in a few lines. If there's more than one issue, go ahead and do a few versions of this exercise. It is very likely that your issue, be it climate change or poverty or school absenteeism, will be broad.

Write a one-paragraph problem definition. It should address the basics, including:

1. What is the problem?
2. When does it occur?
3. Where does it occur?

First, take care that the problem is not a solution in disguise.

Second, avoid complex jargon and technical terms.

Third, review the problem definition in a group as a collaborative exercise. The conversation may lead to identifying different problems.

After identifying the issues we're trying to address, we now must add a description of the root causes to the definition of the problem. The better we can explain the problem, the better we can design a solution that addresses it at its roots.

So, we want to ask ourselves:

Why do we think the problem is happening?

...and write down all possible causes.

This step in the process is designed to help you drill down and extract the problem at issue, peeling back the layers surrounding the broader issue to get to the root of the problem. Every big problem has small challenges associated with it, and those are more actionable.

Root cause analysis is a structured approach to identifying and articulating underlying causal factors in order to spur a conversation about what is a real as opposed to a perceived cause or actually an effect.

Although intuitive to most of us in daily life, root cause analysis emerged formally as a method in engineering in the mid-20th century as a way to diagnose manufacturing failures ex post facto in an effort to seek and remedy the ultimate source of a mechanical breakdown. The task can usefully be applied as well to social and policy challenges.

1. To do this **make a “list of why’s”** that describe why the problem is happening. Try to write down at least five. This is your initial list of root causes.
2. Now **ask why THOSE problems are happening** and see if you can break the root causes down further.
3. **Repeat this exercise five times** or until you can go no further. If you get stuck at any point describing the root causes, ask yourself: have I failed to identify a cause, or do I simply need more research to finish this?

It is helpful to ask “why” this problem is occurring at least five times to make sure that you have identified the most granular cause of the problem. This exercise will reveal at which level of granularity to tackle the problem, and maybe also reveal multiple problems, each of which merits its own problem definition process.

You may want to eliminate causes that, upon reflection, are not deemed to be significant, in favor of keeping a few actionable causes for further work. The list of root causes should feature those causes that are actionable by you, in particular. You want to end up with problems you can solve, collaborating with others. Thus, in addition to avoiding vague generalities, you also want to focus on those causes that are within your jurisdictional purview for action

By now, your problem definition will start to expand into a true problem statement that fills 1-2 pages. Perhaps it even yielded multiple problem definitions.

Again, resist the temptation to jump to solutions.

To illustrate, let’s go back to our story of school absenteeism.

The initial statement of the problem focuses on kids not coming to school - but do we know why they are not coming? Are their parents taking them to Disneyland during the school year to get cheaper rates or are their parents absent? Is coming to school less safe than staying home? Do they lack a way to get to school? Do they have to work instead of coming to school? These are examples of potential root causes of the problem.

Almost invariably this type of questioning -- which takes some patience and discipline -- leads us to redefine the problem.

In order to describe the problem fully, we need to understand the people most affected by the problem, and their needs and incentives. So, let's write down a list of those who are most affected by the problem.

Here's a quick tip for this task - try to avoid generic statements like "the public" in favor of a more granular description of those immediately impacted. For the absentee school children, who are they? Are the children evenly distributed or are they clustered? What types of children do not come? Is absenteeism most prevalent in specific schools? When do they stay home -- is it at specific times of the year? For example, one item on our list of those most affected by absenteeism are children with single-parents in low-income neighborhoods. Another might be middle-school students in rural areas who do not have access to public transportation.

It's also important to highlight that those affected might be both institutions, individual people, or both. Also, people may be affected at certain points in their lives, such as when signing up a child for school or upon graduating or when charged with a crime. The more we can zero in on time and place, the better we can discover possible solutions.

Once we've identified our affected parties, we can use this information to test our problem definition by interviewing these people and inviting them to review our problem definition.

Realistically, we all know that we often have the solution in mind when we are developing a description of the problem. That's okay. It's fine to end up at the place we started, but going through the problem definition exercises helps us ensure that our solution, as envisaged, is, indeed, a response to a problem as people actually experience it. It also helps us ensure that a potential solution is something we can actually bring to fruition.

Before completing our problem definition, it is important to determine if the problem can be reframed rather than simply diagnosed. That is to say, are there alternative ways of looking at the issue -- from different perspectives -- that yield new insights?

What do we mean? Take the example of the slow elevator.

In the 1978 book *Art of Problem Solving*, Russell Ackoff illustrates with the example of the "slow elevator problem." Hotel guests complain to the manager that the elevator is too slow. He consults an engineer who defines the problem mechanically and proposes the obvious but expensive solution of replacing the elevator.

Then the manager digs deeper and hires a psychologist who reframes the problem. The elevator isn't too slow, rather the wait is too annoying. Thus, instead of trying to solve the problem by speeding up the elevator, the manager hung up a mirror next to the elevator for people to gaze into and pass the time more enjoyably.

This solution reduced customer frustration and a much cheaper cost.

The mirror does not, of course, make the elevator go faster. Instead, it solves a more actionable problem — the annoying wait. By framing the problem differently, suddenly we discover a new opportunity.

Another way to reframe the problem is to ask how to prevent the problem from arising in the first place. Instead of trying to solve the problem of too few people adopting dogs, when Lori Weise realized that about 30% of dogs that end up in shelters are “owner surrenders” that opened up a new solution space. Far from being bad and heartless, surrendering owners were often simply poor and having to choose between feeding their dog or feeding their children. Thus, by helping original owners keep their pets -- solving the problem upstream -- communities could reduce the number of animals in kill shelters.

Finally, let's improve our problem definition by LASSOing it.

Alpheus Bingham, founder of Innocentive, the online community for distributed problem solving, created this test for creating a good problem definition. LASSO stands for limited, actionable, specific, supported, and owned.

L – Have I *limited* the scope? In other words, narrow a large problem down to more readily definable smaller problems

A – Have I described something *actionable*? Make the problem clearer by describing a problem we can realistically do something about.

S – Have I described something *specific*? Make the problem more actionable by being concrete and detailed in my description.

S – Have I described a problem that will be *supported*? In other words, will my organization care enough about the problem to take action and invest in an evaluation process to determine whether the solutions will work?

O-Have I identified a problem *owner*? Someone needs to be on-point to manage the problem-solving process and communicate back to collaborators. Thus, in a well-authored problem definition, someone specific has responsibility to manage the solution process.

These last two criteria are of paramount importance. Many problems are compelling and all problems have numerous root causes but we are looking for those problems and root causes that are solvable by us or our agency? What if we work with a coalition of

partners? Some problems are simply going to be either too big or too far outside of our jurisdiction to be something that we can currently impact.

The steps to defining a problem seem simple but there are some common pitfalls. These include:

- The constant temptation to articulate a solution rather than a particular problem.
- The identified problem is too broad to be actionable. It may also not be actionable by you with the resources you have at your disposal.
- The failure to articulate assumptions and root causes and to identify who else may already be working on the problem.
- The lack of success metrics that are needed to assess if a solution works.

When you feel excited about a possible solution, defining the problem can feel like it's slowing you down. But it soon yields benefits in terms of collaboration from others, the ability to demonstrate impact, and most importantly, making a real improvement in people's lives.