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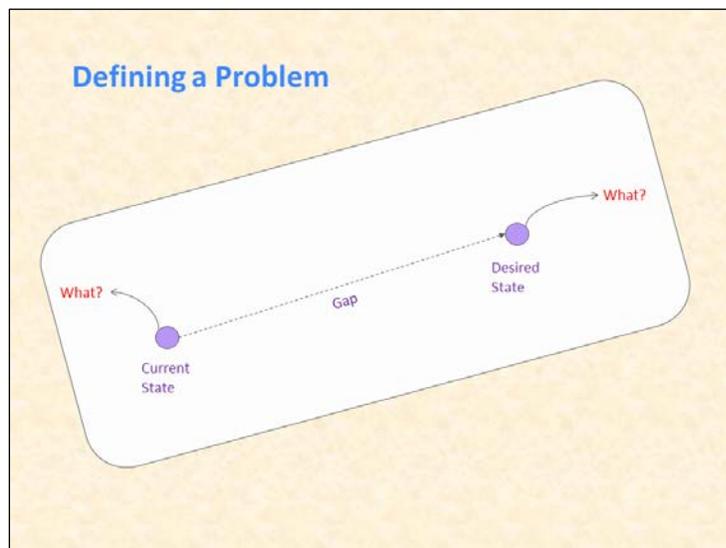
Defining a Problem

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People use different implicit meanings of the word *problem*. To many in business, and often in daily conversations, it has negative connotations. You may hear someone say, “I don’t think in terms of problems, I look for opportunities.” Another may say, “Every problem is an opportunity.” Yet, there are others who view problems without negative connotations and consider themselves problem solvers. In some professions, the use of the term problem is common and accepted. Engineers and scientists routinely talk about solving problems. They see it as the essence of their work. They don’t use the word opportunity as often as people do in business. And it would be unsettling to hear doctors talk of opportunities. They ask patients to describe their problems so they may ascertain the right treatment. Especially when working



on big problems that cross occupational boundaries, it would help to have a simple, clear definition and to use it consistently. It can improve decision making and communication.

Definition of Problem

A problem is the gap between the current state of a situation and the desired state (see figure). Bridging that gap is solving the problem. The task may be simple and easy or

complex and hard. In the case of big problems, the gap between the current and desired states is wide and how to close it is not easily determined.

There is no inherently negative connotation in this *definition* of problem and people from any occupation can apply it to any kind of problem they would like to solve.

However, our values and interests influence which of the many big problems we would like to solve or believe that society should be solving. I may want to work on reducing maternal mortality while you may want to work on raising literacy rates or making college more affordable and someone else may want to launch electric cars to transform the auto industry.

Related Concepts

Given the overlapping meanings of frequently used terms, it helps to see how the term problem relates to them.

In daily conversation, whether we call something a problem or an opportunity often depends on the circumstances. When the current state is undesirable (e.g., deaths from cancer), we tend to label it as a problem to be solved. The desired state is usually the antithesis. But when the current state is not bad and the desired state can be envisioned as an improvement, we tend to call it an opportunity. For instance, an inventor has created a technology to transmit electricity wirelessly. Wired electricity isn't a terrible thing but wireless electricity excites us with novel possibilities and visions of money, so we call it an opportunity. Conceptually, both circumstances are the same. Both have a current state, a desired state, and a gap separating the two. For simplicity and clarity, we can label them both problems to be solved. We can further say that an opportunity for an innovator or entrepreneur is an occasion to solve somebody *else's* problem and profit from doing it.

The terms threat and challenge are generally used to describe something undesirable about the current state. Both are a *part* of the problem description, not all of it. Challenge is also used in another way – as something difficult to be accomplished. In this usage, it is framed as the desired state and the current state is left implicit. For example, the National Academy of Engineering has identified several challenges, one of which is to make solar energy economical. For clarity, it is best to treat threat and challenge as part of the problem description and not as complete descriptors.

Finally, problem and solution can get mixed up in subtle ways and lead to poor outcomes. A solution is a set of decisions that you believe could take you from the current to the desired state. Solutions are choices you make and implement. Sometimes, people state the problem in terms of their solution. The solution can then become the problem while the real problem remains unaddressed. For example, managers who desire growth for their company may state the problem as which other company they should acquire. But an acquisition is really a solution and not the only one for growth (they could start a new business, enter a new market, and so on). More broadly, every decision, policy, and practice can be viewed as a solution. It is then worth asking what problem it is really solving. The answer may occasionally surprise you.

Conclusion

There are several terms that are used interchangeably with the term problem. All of them also have multiple implicit definitions. It can cause confusion and lead to ineffective decisions. Before tackling big problems, it helps to have a simple, clear definition of the term problem and to use it consistently. This note presents such a definition and distinguishes problem from the related terms opportunity, threat, challenge, and solution.