

## Defining and Solving Problems

If you do a search on “problem solving” on the internet, you will find lots of different systems, sometimes offering contradictory advice. Often these systems are designed for business managers or military officers. Even the US Army’s seven-step system has different steps in different presentations. This handout is a distillation of what I consider the best and most flexible advice from many sources, based on my experience as a Writing Center director.

These techniques can be used for all problems great and small, from dealing with roommates who don’t pay rent to such things as figuring out how to deliver millions of doses of vaccines.

### 1. Define the problem

Before you can solve a problem, you have to define it. Ask yourself the following questions, which are somewhat based on the journalistic pentad: who, what, when, where, and why (sometimes known as “the five W’s”).

- Why do you, or others, think there is a problem?
- When and where is it happening? (How long has it been going on? Where was it first noticed?)
- With whom is it happening? (Note: Don’t jump to blaming individuals. People may be making mistakes because of bad equipment, bad information, a bad system, or other factors beyond their control. Also, if people think you are trying to assign blame, they may be less open about talking about the problem.)
- What is the scope of the problem? (How big is it? How many people does it affect? How many parts of the organization?)
- Who has authority over the problem? Who should you present your solution to?
- Could there be more than one problem? What are other possibilities?

Write down a short description of the problem including what is happening, where, how, with whom and why.

### 2. Gather information

Some say “You can’t solve a problem without understanding the cause” (McNamara), while others say, “If ever there was a time-waster in problem solving, it has to be the search for the cause of the problem” (Nikols). Nikols explains, “the concept of cause is frequently relevant, but its usefulness depends on the kind of problem being solved. It’s not relevant all the time and, for some problems, it’s never relevant.” The bottom line is not to get fixated on finding causes if they are too complex because of multiple variables, or simply beyond your power to address.

- What are the facts?
- What do people affected by the problem think?
- What assumptions do they make about the problem that might be questionable?
- Are any decision-makers influenced by political views or ingrained thinking that might cloud their judgment?
- What are some possible causes? Is the problem caused by technology (or lack thereof), policy, procedure, scheduling, people, or some other factor?

- What potential causes and solutions to the problem do you find on the internet?
- What have other people done in the past to address similar problems? Were they successful?
- Considering your research, should you re-evaluate your definition of the problem?

Write down a short description of the cause of the problem and some possible solutions to investigate.

### 3. Develop Criteria for Success

To evaluate possible solutions and make a case for one of them, you need to have a list of criteria that the solution must meet.

- What does an ideal outcome look like? What is the end goal of the problem-solving process?
- What limitations exist in terms of costs and resources?
- What standards must the solution meet in terms of physical space, capabilities, and other qualities?
- Can you answer “Yes” to all of the following questions (These are deliberative stasis questions from ancient Roman rhetoric, but they are quite applicable here.)
  - Is it legal?
  - Is it expedient? (Is action necessary and will it work?)
  - Is it possible?
  - Is the anticipated effect positive? (Will it produce honor, happiness, satisfaction, or other positive effects for those who implement it? This is an important factor in persuading decision-makers to accept your recommendation.)
- If more than one solution meets these criteria, how will you make a decision?

### 3. Identify possible approaches

- Some experts avoid the term “solution” in favor of “approach” because some problems can only be addressed or improved, not solved. The military tends to use “Course of Action,” abbreviated as COA.
- List approaches that people involved in the situation offered.
- List approaches that appeared in your research.
- Brainstorm for alternative approaches to the problem. (Brainstorming is collecting as many ideas as possible, then screening them to find the best idea. Do not pass any judgment on the ideas—just write them down as you hear them.)
- Considering your evaluation criteria, select a short list of the best possible approaches and compare them. Try not to be biased in favor of a particular solution. Be as objective as possible.

### 4. Select an approach to resolve the problem

When selecting the best approach, consider:

- Which approach satisfies the most criteria in your evaluation scheme?
- Which approach is most likely to achieve the desired outcome?
- Which approach is the most realistic to implement in terms of time and resources?
- What is the extent of risk associated with each alternative?
- Which approach do you think has the best chance of being acceptable to decision-makers? Can you make a case for it if you have to?

## 5. Plan the implementation of the best alternative

Carefully consider:

- What will the situation look like when the problem is solved?
- What steps should be taken to implement the best alternative to solving the problem?
- What resources will you need in terms of people, money and facilities?
- How much time will you need to implement the solution?
- Who will primarily be responsible for ensuring implementation of the plan?
- How will you know if the approach is successful?

An important aspect of this step in the problem-solving process is continual observation and feedback.

### Works Cited

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