Skillbook

Problem Solving

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Skills

Mindtools

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1. Introduction

Problems usually make themselves well known. Solutions, on the other hand, can be much harder to find.

This is because problems often have more than one cause, and some of these causes – sometimes the most important ones – may not be obvious. This can make it a challenge to identify the best way to solve your problem.

When you have a complex problem, it can be tempting to choose the first solution that comes to mind, or the one that's easiest to implement. However, when you do this, you're unlikely to address the problem's underlying causes. If you don't understand the issue fully, you may just end up with a temporary fix. This means that the problem festers and becomes bigger.

This **Skillbook** gives you the tools that you need to avoid these issues, and to solve your problem thoroughly and completely the first time around.

2. The Big Picture

Many problems have more than one contributing factor. For instance, poor sales could be due to low morale among employees, a badly designed marketing campaign, or a competitor undercutting prices.

When you identify several contributing factors, you'll likely discover a number of potential causes and solutions, too, and it can be hard to keep all this information organized. This is why it's useful to present problems using diagrams or visual representations.

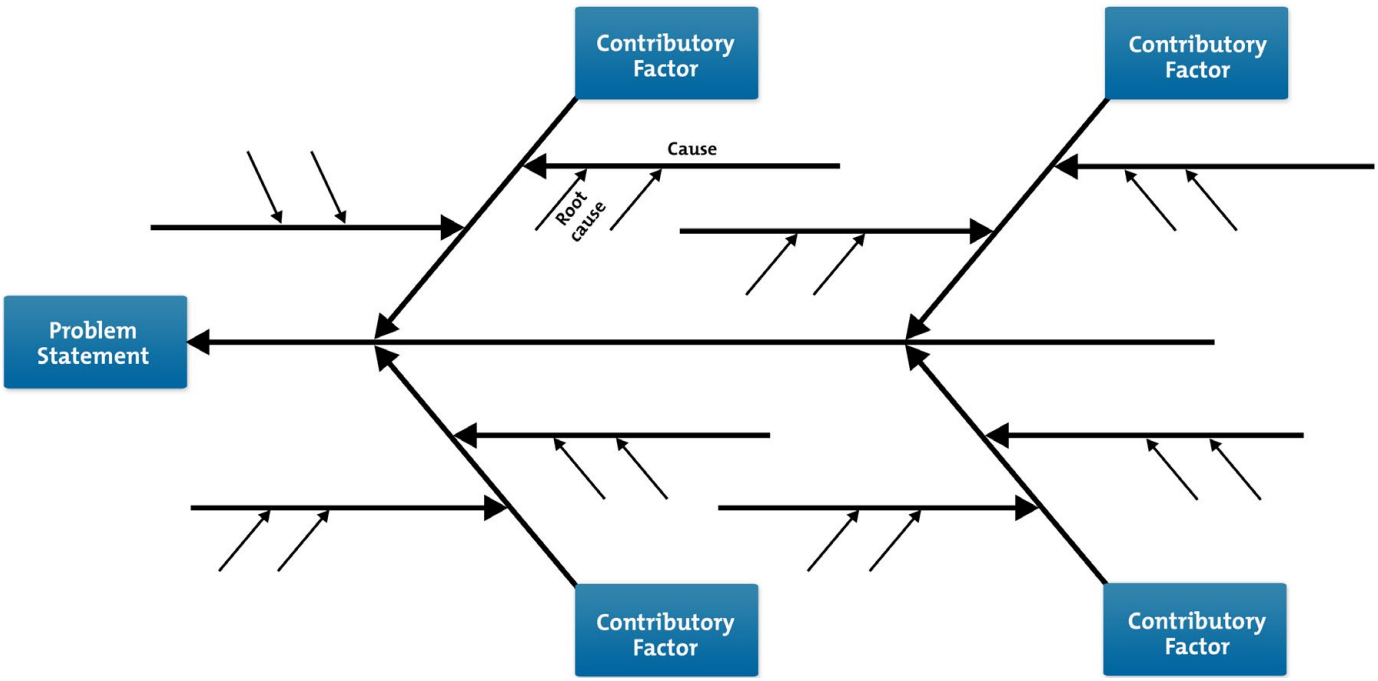
Analyzing your problem visually will also push you to investigate it systematically. You'll get a clear view of the big picture, and you'll less likely focus on just one or two of the most obvious underlying causes.

In the next chapters, we'll look at Cause and Effect Analysis. This tool helps you to uncover **all** of a problem's roots, so that you can deal with it once and for all.

3. Cause and Effect Analysis

Cause and Effect Analysis is a tool that you can use to identify and understand the many issues that might underlie a problem. The Japanese engineer and professor Dr Kaoru Ishikawa developed it in the 1960s but it's just as useful today.

It involves creating what many people call a "Fishbone Diagram," because it looks like a fish's skeleton. Below is an example template for just such a diagram. As you can see, it can capture many different inputs!



When you use Cause and Effect Analysis, you can:

- Define the problem more clearly.
- Identify the main contributing factors.
- Pinpoint causes within each of these factors.
- Drill down to isolate the root causes.
- Analyze the problem in detail.
- Identify possible solutions.

Now read the case study on the next page. Then we will use Cause and Effect Analysis to solve the problem that it describes.

Case Study

S&P Office Furniture has just experienced a quarter of serious negative cash flow, and its management team is looking at how it can address the problem.

The company has been in business for 18 years. It's always been profitable, and its managers believe that this success is down to having many of the same team members in place all along. Two senior salespeople retired in September, but the replacements are now doing a great job.

Every year, the management team determines next year's budget on a month-to-month basis, based on the previous year. This approach has been effective in the past but, this year, the company has missed its target for December. This is causing cash flow difficulties.

The company also had to spend much more money on recruiting two more new salespeople than it had budgeted for, which has made the situation worse. This was because it was harder than expected to find people with the necessary experience. Also, nobody was available to cover for the retired staff, so the new recruits had to be up and running as quickly as possible.

This over-expenditure put a dent in the advertising budget, which affected December sales. The company invested in a major advertising campaign in November and December of the previous year, but there was no money in the budget to do the same this year. In fact, last December's sales were higher than any other month that year. This campaign's success was particularly welcome, because it helped to offset the natural decline in sales of the holiday season.

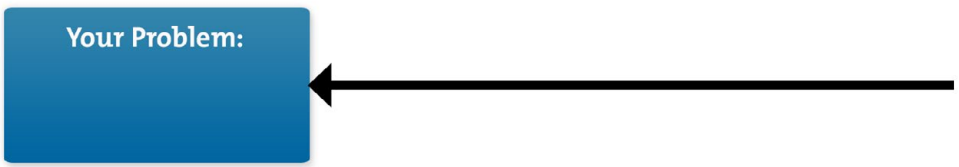
S&P needs to make sure that this type of significant budget shortfall does not happen again.

1. Create Your Cause and Effect Diagram

To start your diagram, you write your problem in a box on the left-hand side of the page, and draw a horizontal line ("spine") going into it. This sets up the "Cause" line and the "Effect" box.

Action:

What's the problem in the S&P case study? It's a cash flow shortage. So, write this in the problem box below.



Tip:

Gather a group of people from different professional backgrounds to help you to solve your problem. Your objective is to uncover as many causes as possible. Therefore, the wider the experience that you can draw on, the greater the number of alternatives you will be able to identify.

2. Identify the Main Contributory Factors

Next, look at the main factors that contribute to the problem. For example, these could be systems, equipment, materials, external forces, or people. You'll use these to investigate the causes of the problem in more detail, later.

Try to draw out as many factors as possible. Use models such as the McKinsey 7-S Framework (which offers you "Strategy," "Structure," "Systems," "Shared values," "Skills," "Style," and "Staff" as factors to consider), or the 4 Ps of Marketing (which offers "Product," "Place," "Price," and "Promotion").

Brainstorm any other factors that may affect the situation.

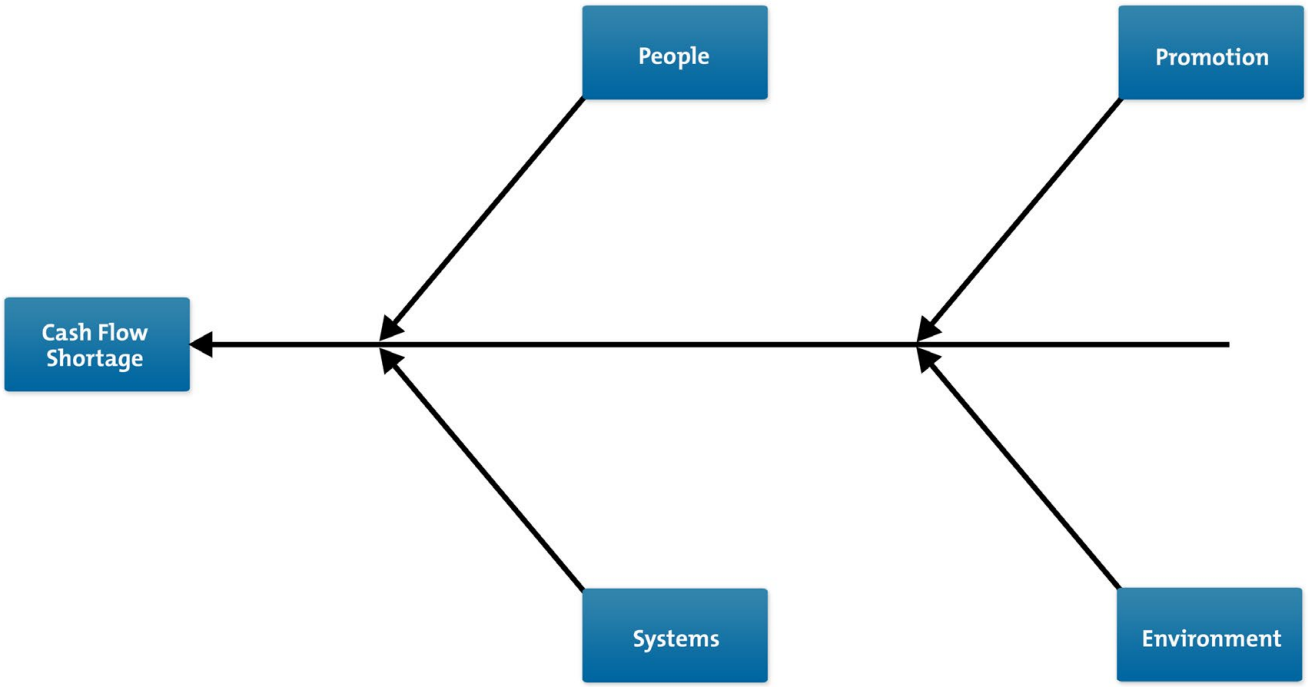
We will use four main contributory factors for our case study:

- **People** – do they have the experience and knowledge to do the job?
- **Systems** – are there adequate processes, procedures and instructions in place?
- **Promotion** – how will you get your message across to your customers? When is the best time to communicate?
- **Environment** – are there seasonal or economic issues?

Plot the contributing factors on your diagram by placing them in boxes, and then drawing diagonal lines from each of them to the "spine." This represents the cause-effect relationship. Take a look at the next page, where we've filled out some of the boxes in a Cause and Effect Diagram for you.

Tip:

Remember, you are looking for high-level categories here. You will break each of these down into possible causes in the next step.



3. Identify Underlying Causes

Once you've listed the high-level factors, you're now ready to brainstorm possible deeper causes of the problem.

If there are causes that fit more than one factor, record them under all of the appropriate headings.

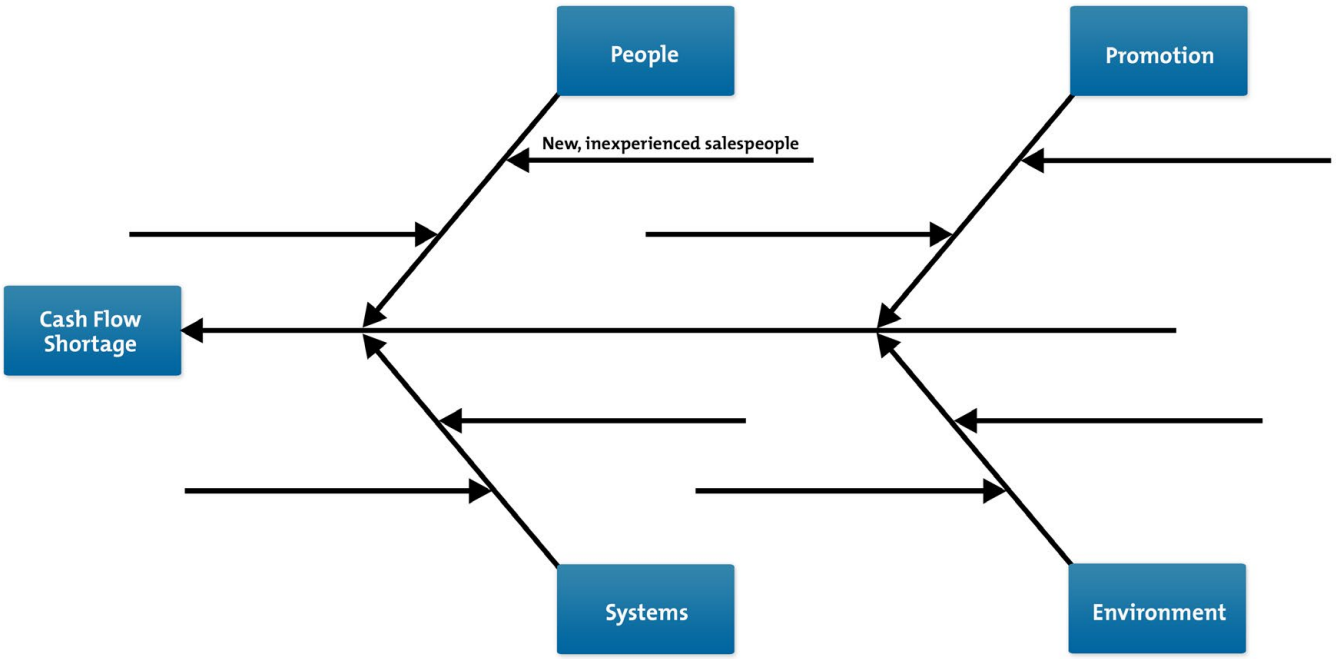
You then draw lines off each high-level factor line of the diagram, and label them with your underlying causes.

Tip:

Come up with ideas for each factor in turn, so that you don't get sidetracked, and so that you exhaust all of the possible causes.

Action:

Look at the S&P Office Furniture case study. Then take five to 10 minutes to fill in as many causes of the cash flow problem as you can on the next page. We've filled in one possible cause to get you started.



4. Drill Down Further

As you identify more and more possible causes, it's important to focus on revealing the **root** causes. Where a cause is large or complex, it may be best to break it down into sub-causes. You can show these as lines coming from each cause line.

One of the best ways to identify sub-causes is to use the 5 Whys approach. With this method, you start with the high-level cause and ask yourself "Why?" five times in a row, digging deeper and deeper into the problem. By the end of this process, you'll likely have identified the root cause.

Action:

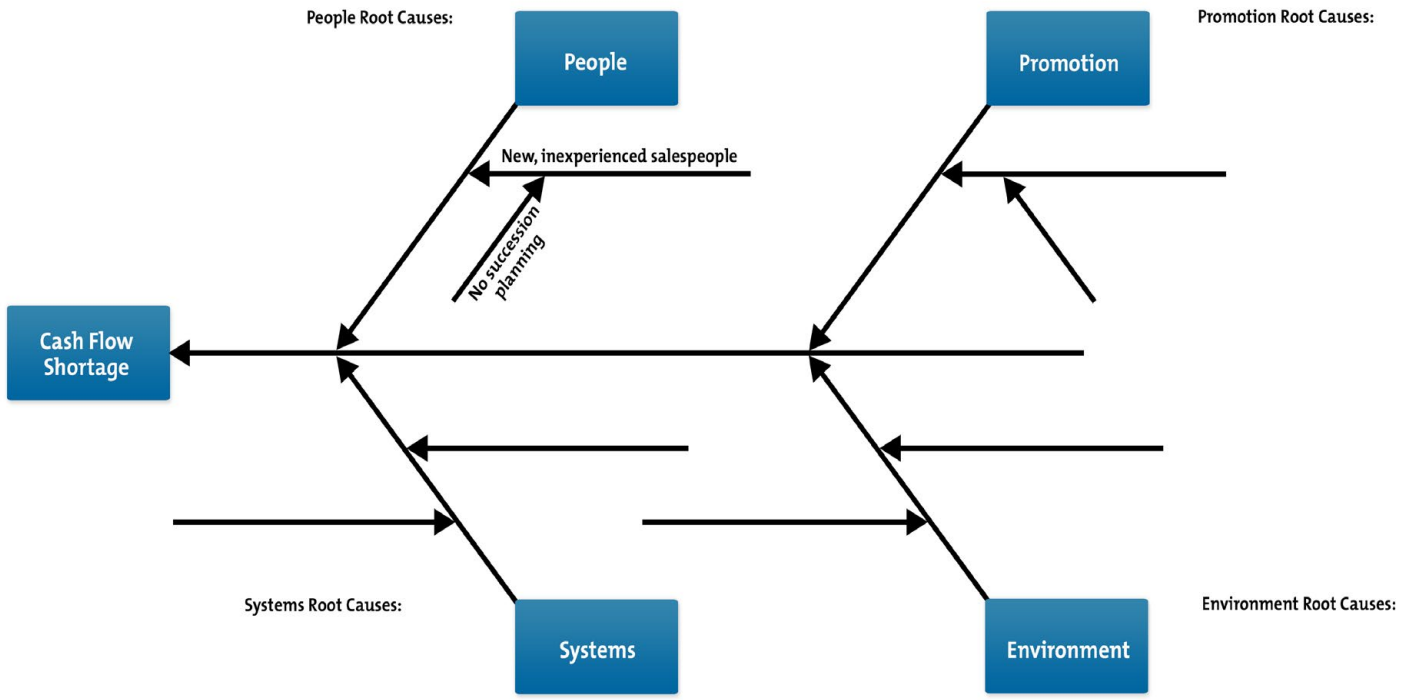
Take 10 minutes to identify some sub-causes for each of the causes you've listed. Use 5 Whys and some further brainstorming to do this.

We've included an example of using 5 Whys below, to help you to get started.

5 Whys for "People" Factor

1. **Why wasn't enough cash coming in?** Because the team was selling less.
2. **Why was it selling less?** Because the salespeople were inexperienced.
3. **Why were the salespeople inexperienced?** Because the people who knew the best ways to sell the products had retired.
4. **Why hadn't the new hires learned from the retirees before they left?** Because the leavers didn't overlap with the new hires.
5. **Why was there no overlap?** Because there was no succession planning.

So, the lack of succession planning was one of the root causes of why "people" issues contributed to the poor cash flow. We've shown this on the next page.



5. Analyze the Diagram

In this step, you decide which of the possible root causes that you've identified need further investigation.

Things to look for include:

- One branch that is more detailed or congested than others. When this happens, you'll likely need to look at this area very closely, and to explore it in more detail.
- A main category that has far fewer causes than others. This can indicate that you have not investigated it fully.
- Lots of categories that have only one or two sub-branches. These may need to be combined.
- Causes that are repeated under many different categories. These are often root causes, and, typically, you'll need to deal with them first.

Tip:

If a branch becomes too complex, simply "break it off" and continue on another page.

6. Identify Solutions

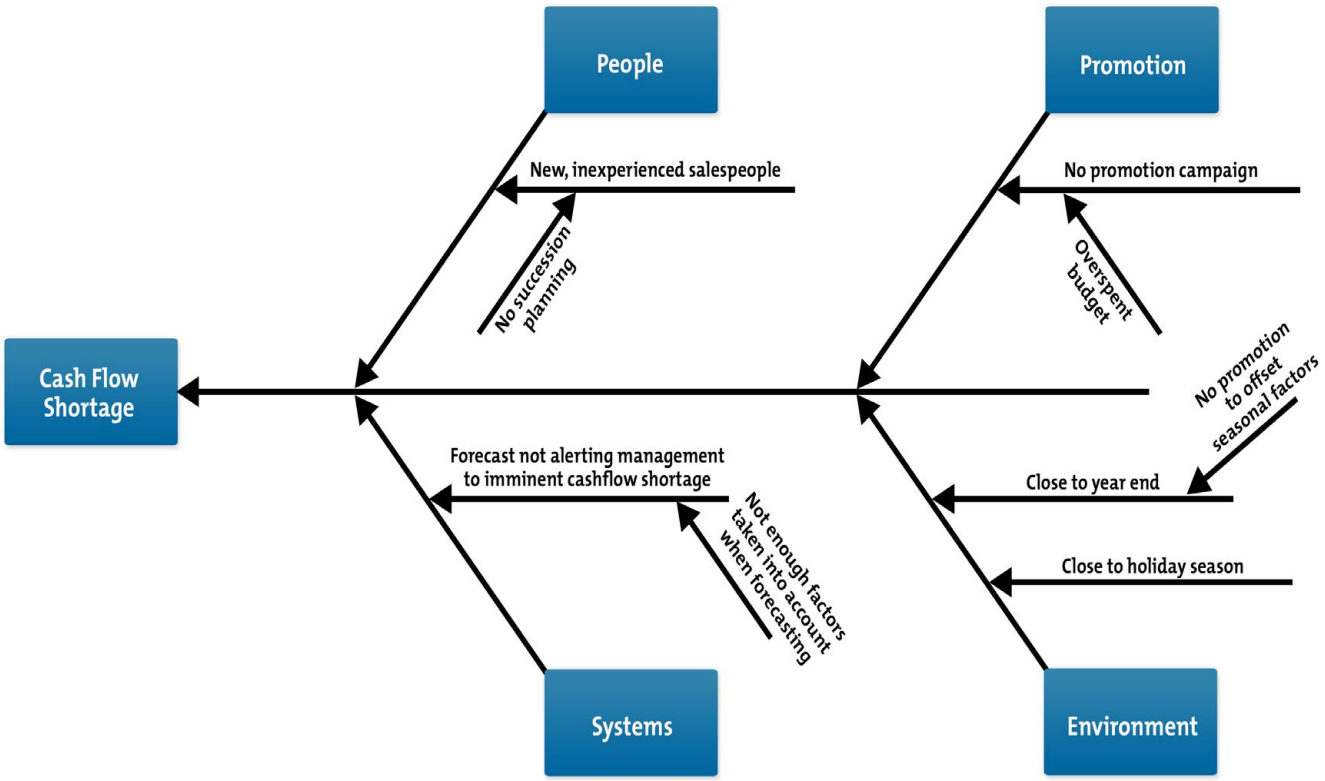
By now you'll have a diagram showing all of the possible causes of the problem.

Depending on its complexity and importance, you can now investigate its most likely causes further. For example, this could involve setting up investigations, or carrying out surveys. Use these to test which of the possible causes is actually contributing to the problem. From there, you can come up with a solution.

4. Sample Answer

So, how many possible causes did you find to the S&P Office Furniture problem? And how different was your eventual solution from your thoughts when you first read the case study?

Take a look at our completed Cause and Effect Diagram, below, and see how it compares with yours. If you missed something during your analysis, work back through the steps to see where you could have spent more time and thought. Now apply this process to a real-life problem in your workplace!



5. Key Points

Finding solutions to problems is a complex process. If you don't use a systematic technique to get a better understanding of your issue, it can be easy to become confused by all of the interrelated factors.

Cause and Effect Analysis is a simple and effective tool that you can use to identify the possible causes of problems. With it, you:

- Define the problem clearly.
- Identify and investigate the main contributory factors of the problem.
- Pinpoint causes related to each factor.
- Drill down to the root causes of a problem.
- Analyze the causes that you've identified, so that you can determine your next actions.

At the end of the process, you'll have a very good understanding of the problem, and you'll be able to start working towards a lasting solution.