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## Problem Solving

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The first rule of problem solving is: do not try to do it all by yourself. A solo answer is rarely better than the group answer. Even if the solution you propose is a good solution, no one else will own it and you will have to spend excessive time getting others to accept your solution. Let them work on the problem with you and own the solution with you.

As a leader you will not, however, simply present other people with a problem. You should before check that:

- You have the right problem
- You are focused on causes, not symptoms
- You know who need to be involved in the solution because of their skills, interest or position in the organization
- You have created some thought-through options
- You have a structure or approach for solving the problem.

### 1. Find the right problem

The first critical step is to find the right problem. Three questions for you to ask about the stated problem are:

- Who owns the problem? Who really wants this fixed?
- What are the consequences of not fixing it?
- What are the consequences of solving the problem?

If there are compelling answers to these questions, you probably have the right problem and you will quickly find out who are the right people to involve in solving the problem.

### 2. Problem-Solving Process

There are a number of problem-solving techniques (see below) but the basics of any problem-solving process are relatively straightforward:

#### 1. Understand the problem

Learn enough about the problem to know that you are focused on causes, not on symptoms. Keeping asking "Why...?" to find out the roots of the problem.

#### 2. Create hypotheses

Look at the problem from new angles. How the customers see this? How will the competition exploit this? How has this been handled elsewhere in the world in other organizations?

#### 3. Evaluate and select the best hypotheses

Don't waste time evaluating every option. Let the group pick the two or three they most want to work on. The best ideas normally come through. If you are leading the group, you can use leader's rights to add one more for group consideration.

#### 4. Drill down to action planning

If the first three steps have been completed well, this is the easiest step. The drill-down may reveal further, lesser, problems, which can be solved with the same four-step processes.

### 3. Some Techniques

#### a. Appreciation

Appreciation is a very simple but powerful technique for extracting the maximum amount of information from a simple fact.

##### How to use the tool

Starting with a fact, ask the question "So what?" - i.e. what are the implications of that fact. Keep on asking that question until you have drawn all possible inferences.

##### Example

- Fact - "The temperature is rising steadily."
- So What? - "The Ozone pollution will rise as well due to the number of vehicles in the city"
- So What? - "The health of the population - particularly old people and children is at risk".
- So What? - "Where possible, limit the speed of vehicles or reduce their number."

#### b. Drill-Down

Drill-Down is a simple technique for breaking complex problems down into progressively smaller parts.

##### How to use the tool

Start by writing the problem down on the left-hand side of a large sheet of paper. Next, write down the points that make up the next level of detail on the problem a little on the right of this. These may be factors contributing to the problem, information relating to it, or questions rose by it.

Drilling into a problem or a question helps you to get a much deeper understanding of it. The process helps you to recognize and understand the factors that contribute to it. Drill-Down prompts you to link in information that you had not initially associated with a problem. It also shows exactly where you need further information.

##### Example

The owner of a windsurf club is having complaints from the members of the clubhouse. This seems like a huge problem. Let us drill it down:



### c. Cause and Effect Diagrams

Cause and Effect Diagrams (also known as Fishbone Diagrams) help you to think through causes of a problem thoroughly. Their major benefit is that they push you to consider all possible causes of the problem, rather than just ones that are the most obvious.

The approach combines *brainstorming* with use of a type of *concept map*.

#### How to use the tool

Follow these steps to solve a problem with a Cause and Effect Diagram:

1) Identify the problem

Write down the exact problem you face in detail. Where appropriate identify who is involved, what the problem is, and when and where it occurs. Write the problem in a box on the left side of a large sheet of paper. Draw a line across the paper horizontally from the box. This gives you space to develop ideas.

2) Work out the major factors involved

Next identify the factors that may contribute to the problem. Draw lines off the spine for each factor, and label it. These may be people involved in the problem, systems, equipment, materials, external forces, etc. Try to draw out as many factors as possible. Using the "fish bone" analogy, the factors can be thought of as the bones of the fish.

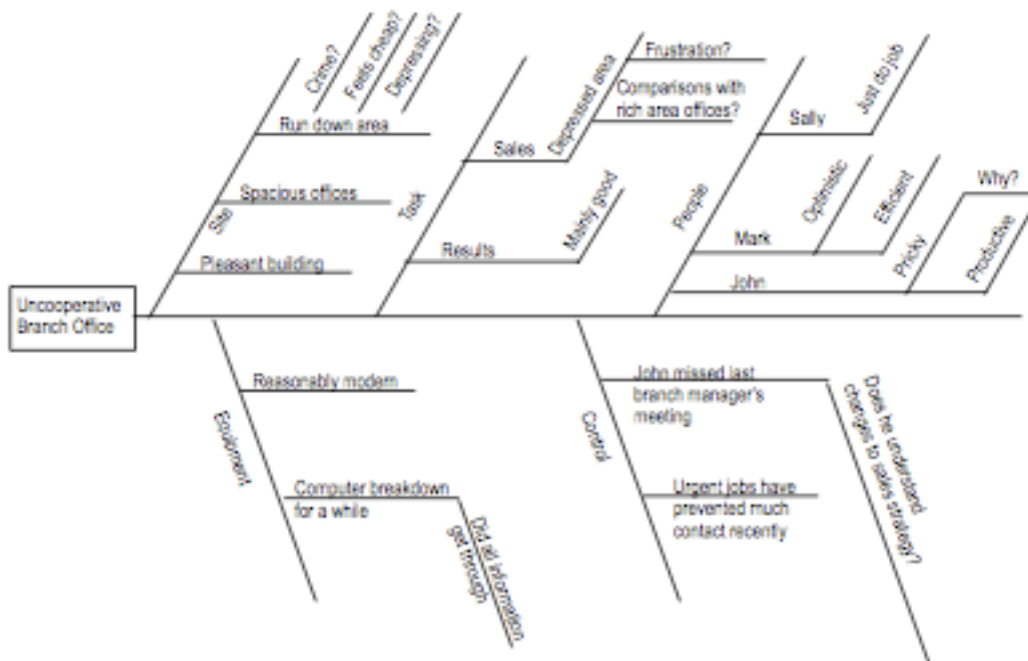
3) Identify possible causes

For each of the factors, make a brainstorm on possible causes of the problem that may be related to the factor. Show them as smaller lines coming off the "bones" of the fish. Where a cause is large or complex, it may be best to break it down into sub-causes. Show the sub-causes as lines coming off each cause line.

4) Analyze your diagram

By the stage you should have a diagram showing all the possible causes of your problem. Depending on the complexity and importance of the problem, you can now investigate the most likely causes further. This may involve setting up investigations, carrying out survey, etc. These will be designed to test whether your assessments are correct.

Example:



If the manager had not thought the problem through, he might have dealt with the problem by assuming that people were being difficult. Instead he might think that the best approach is to arrange a meeting with the Branch manager. This would allow him to brief the Manager fully, and talk through any problem that he may be facing.

#### **d. Flow Charts**

Flow charts are easy-to-understand diagrams showing how steps in a process fit together. This makes them useful to communicate how processes work, and for clearly documenting how a particular job is done. Furthermore, the act of mapping a process out in flow chart format helps you clarify your understanding of the process, and helps you think about where the process can be improved.

A flow chart can therefore be used to:

- Define and analyses processes
- Build a step-b-step picture of the process for analysis, discussion, or communication and
- Define, standardize of find areas for improvement in a process.

Also by conveying the information or processes in a step-by-step flow, you can then concentrate more intently on each individual step, without feeling overwhelmed by the bigger picture.

#### *How to use the tool*

Most flow chart are made up of three main types of symbol:

- Elongated circles, which signify the start or end of a process.
- Rectangles, which shows instructions or actions, and
- Diamonds, which shows decisions that must be made.

Within each symbol, write down what the symbol represents: start of finish of the process, actions or decisions. Symbols are connected on to the other by arrows, showing the flow of the process. Start the flow chart by drawing the elongated circle shape and labelling it "Start".

To draw the flow chart, brainstorm process tasks, and list them in the order they occur. Ask questions such as: "What really happens next in the process?" and "Does a decision need to be made before the next step?" or "What approvals are required before moving to the next task?" Work through the whole process, showing actions and decisions appropriately in the order they occur, and linking these together using arrows to show the flow of the process. Where a decision need to be made, draw arrows leaving the decision diamond for each possible outcome, and label them with the outcome.

And remember to show the end of the process using an elongated circle labelled "Finish".

Finally, challenge your flow chart. Work step by step asking yourself if you have correctly represented the sequence of actions and decisions involved in the process.

An then (if you're looking to improve the process) look at the steps identified and think about whether work is duplicated, whether other steps should be involved, and whether the right people are doing the right jobs.

There are many different flowchart symbols that can be used. However, remember that an important use of flow chart is in communication. If you use obscure symbols that only part of your audience understands, there's good chance that your communication will fail. As ever, keep things simple!

Flow charts can quickly become so complicated that you can't show them on one piece of paper. This is where you can use "connectors" (shown as numbered circle) where the flow moves from one page, and where it moves onto another. By using the same number for the of-page connector and the on-page connector, you show that the flow is moving from one page to the next.

#### *Example*

The example on the following page shows part of a simple flow chart, which helps receptionists route incoming phone calls to the correct department in a company.

