

Solving Managerial Problems Systematically



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Hans Heerkens & Arnold van Winden

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Hans Heerkens

Arnold van Winden

Translated into English by Jan-Willem Tjooitink

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If you have any comments or queries about this publication, please contact Noordhoff Uitgevers bv, Afdeling Hoger Onderwijs, Antwoordnummer 13, 9700 VB Groningen, The Netherlands. E-mail: info@noordhoff.nl

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Foreword

Problem-solving is part of all fields of study and all corporate sectors. Knowledge of the relevant subject or industry is indispensable, but can only get you so far. A systematic problem-solving approach can be an invaluable aid in dealing with problems. This book focusses on the Managerial Problem-Solving Method (MPSM), a tried and true problem-solving method which can be applied to various problems occurring in a multitude of situations in all subject areas.

Solving Managerial Problems Systematically is a book for students, advisors, and managers who want to solve complex practical problems without the problem-solving method forcing them into a straightjacket. The MPSM provides a framework for problem-solvers, and lets them decide which tools from existing managerial theory they want to use. MPSM is a problem-solving method that provides a path to a solution, step by step. It helps trouble-shooters arrive at solutions by ticking the boxes on a methodological checklist, and teaches them to differentiate between knowledge and action problems. The Language of Variables ensures that researchers remain concrete, helping them to consciously weigh up alternatives and obtain answers to questions they had not yet thought to ask. The MPSM encourages its users to take advantage of their intuition.

The MPSM combines knowledge obtained through thorough research with systematic problem-solving. Creative techniques are used as an aid in coming up with solutions to problems.

The first two chapters of this book cover the MPSM as a whole. Chapter 3 is a stand-alone, a fictional story that uses the notes in a trouble-shooter's log to describe the way the MPSM is used to solve a managerial problem. The next seven chapters discuss each of the method's particular phases, followed by Chapter 11 which covers the research cycle – a recurring element found throughout the use of the MPSM.

This book does not go into a scientific or philosophical justification of the method. The MPSM's usefulness and underlying logic become apparent to the reader without discussing theories posed by other authors. But there are several literary references – so pick up a book from the bibliography if you are interested in certain components of the problem-solving approach. They may help by sparking new ideas for dealing with something that is not going the way it should. As you read, you will find that much of what is discussed in this book is based on existing knowledge. Not all of the individual parts of the MPSM are brand new. This book is a way of combining theories and methods into a practical reference work for dealing with all sorts of managerial problems, from the seemingly easy to the truly complex.

Our thanks go out to Business School Netherlands (BSN), Buren, the Netherlands, one of the driving forces behind this book. Several years ago, BSN invested in our book '*No problem, an approach to all managerial questions and mysteries*', which was used as a basis for this book.

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Hans Heerkens, Arnold van Winden

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1

A Framework for The Best Solution

Which is more effective: tackling a problem systematically or doing so creatively? Using the MPSM, an acronym of Managerial Problem-Solving Method, you can apply a systematic approach to your work while still retaining creativity.

This chapter addresses the following questions:

- How can a creative and a systematic approach complement one another?
- What types of problem can the MPSM be used for?
- At what point in your problem-solving approach do you start conducting research?
- Why does the MPSM work?

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How to Find a New Violinist

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After 43 years of loyal service, violinist Albert closes the lid on his violin case for the very last time. The regional symphonic orchestra will have to start looking for a new violinist. But the members of the strings section are divided on how to proceed. A number of musicians prefers a systematic approach, with a list of prerequisites for potential new recruits. Others would rather focus on finding a virtuoso artist, someone who plays from the heart; they are less interested in credentials. The chief conductor asks both sides to come up with a well-founded proposal.

Those favouring the systematic school of thought feel that a new violinist should be a graduate of an academy of music. Applicants should have at least five years' experience in a large orchestra. Neither famous violin concertos by great composers nor more obscure works by lesser giants should hold any secrets for them. The requirements are to be published in an advert. A selection commission, consisting of the conductor, a first violinist, and a cellist, will be reviewing new applicants based on an established checklist of requirements. Whoever meets these requirements demands best will get the job.

The second group opts for a different approach. These musicians aim to publish an announcement in a major national newspaper. They are looking for a violinist who plays 'from the heart'. Any musicians interested in being part of the orchestra can come by next Wednesday afternoon to present their performance. The strings section will then decide which applicant would best fit the orchestra.

Which approach should the chief conductor go for? The systematic approach has a high chance of yielding a performer capable of handling the work. The creative approach, on the other hand, may uncover some home-schooled musical marvel – a passionate violinist who would have otherwise been overlooked.

Put it like that, and the creative approach would seem to have the most benefits. But it does come with some risks. What if the 'brilliant' violinist plays a soulful and touching rendition of a piece by Vivaldi at the Wednesday afternoon audition, but then utterly butchers a sonata by Bach during an official recital? Are they familiar enough with the violin score? Are they fast enough when it comes to reading musical notes or rehearsing for new performances?

The final decision is left to the chief conductor. Both options have their own advantages and disadvantages. So he chooses a third option: a combination of the two methods. Any interested violinist is invited to demonstrate their skill on Wednesday afternoon, on one condition: they have to be a graduate of an academy of music. Based on performance, the orchestra will choose the most passionate violinist who, happily, also meets the minimum prerequisites for playing in an orchestra. For a while, the chief conductor considered inviting all comers, and having them take an academic level test. But that approach would take up a lot of time – time the chief conductor does not have.

1.1 Characteristics of the Managerial Problem-Solving Method

Some people refuse to enter a supermarket without a grocery list. If a job needs doing well, they will swear by using an established plan of attack or a solid script. Others rely on their creativity and adaptability. They tend to work based on circumstances. They need some elbow-room to arrive at better solutions. So how can you work systematically without losing out on creativity? This chapter introduces the Managerial Problem-Solving Method (MPSM). These are the characteristics of the MPSM:

- The MPSM is a method in which the creative and the systematic complement each other
- The MPSM is divided into seven phases
- The method can be used anywhere and at any time
- Problems are handled in their organisational context
- Problems are expressed in terms of variables
- The MPSM is an adaptable framework
- There MPSM is a method in which investigating and trouble-shooting meet

1.2 Systematic or Creative Approach?

The MPSM is not stringently rigid, but a framework for you to fill in as you need. Without requiring too much complicated prior knowledge, it allows you to reach solutions to managerial problems in a variety of situations. But you do need to know how you can apply the MPSM's methodology in a meaningful manner. Which is best: a systematic or a creative approach? Think of it as a choice between putting your money into investments, or into a savings account. Investing money can help you increase your funds more rapidly than saving money at a bank. But the reason not everybody has fully poured their own capital into investments is because investing comes at a greater risk. This is similar to using a creative approach to solve a problem. You may come across imaginative solutions, frequently better than what a systematic approach could have yielded. But there's a relatively greater chance that your inventive idea will not be practical, or simply does not work. So should you revert to the systematic approach?

A systematic approach is one that looks for a good, practicable solution in a stepwise manner. But that solution is not necessarily the best possible answer to your problem. A company that wishes to excel needs something more. If all companies in a certain field were to use the systematic approach, they could all arrive at the same solution, with the same advantages, using the same strategies. In that case, a systematic approach has done nothing for a company in terms of profiling, of distinguishing itself from the competition. A competitive advantage cannot be achieved by a systematic approach alone – if it could, the systematic approach would be all anyone would use.

A creative approach has major potential rewards, but a relatively greater risk of failure. There are rarely any brilliant strokes of luck involved in the outcome of the systematic approach, but it will generally yield acceptable

results. It is not always possible to say which of the two approaches will work the best beforehand. In some specific cases, there may be a clear preference. In practice, it is often convenient to opt for a systematic approach while also applying your creativity during certain stages. Think, for example, of developing a name for a new model of car. You start with a list of requirements – as systematically as possible. Using books on marketing and brand management, you establish your demands, i.e. what you expect from a car's name. Then, you select whatever criteria you feel are relevant. For example, the new name should follow a similar pattern as earlier models by the same manufacturer.

Once you have established your list of demands, it is time to start thinking of names – time to get creative. In a brainstorming session, you come up with as many names as you can. Then you switch back to the systematic approach. You verify your potential names against the list of established requirements. You pick whichever best fits the bill. Following this line of reasoning, it should come as no surprise that Vauxhall produces a car called the Cascada. That name fits in perfectly well with Vauxhall's established range of seemingly Latin names ending in -a used for their other cars: Corsa, Astra, Meriva, Insignia and Zafira.

The Managerial Problem-Solving Method allows you to embark on necessary creative jaunts within a systematic approach to a problem. Those excursions can be essential for reaching quality solutions. The creative approach is most prevalent in phase 4 of the MPSM; the phase where you look for alternative solutions. The systematic approach and the creative approach are not contradictory; instead, they are complementary. Depending on the situation, use either a systematic approach, a creative approach, or a combination of the two. The MPSM lets you do whatever best serves your purpose.

1.3 Phases of the Managerial Problem-Solving Method

The MPSM is one of several systematic problem-solving approaches. Developed by the University of Twente, the MPSM is based on several different problem solving methods. The MPSM consists of the following seven phases:

- 1 Defining the problem
- 2 Formulating the approach
- 3 Analysing the problem
- 4 Formulating (alternative) solutions
- 5 Choosing a solution
- 6 Implementing the solution
- 7 Evaluating the solution

When using the MPSM for problem-solving purposes, you follow the seven phases sequentially – but you may have to backtrack on occasion, too. It is quite possible to find that the problem you established in phase 1 does not manifest itself as you thought it did once you reach phase 3. This could mean you need to return to phase 1, and review your initial diagnosis.

All in all, this approach looks neither very new nor original. The MPSM does not appear to deviate substantially from existing problem-solving methods.

Investigating, analysing, concluding, implementing and evaluating; they are all there. And yet, the MPSM is different from other, often more limited problem-solving models.

1.4 MPSM Works Anywhere, Anytime

There are methods which only apply to a certain field or area of expertise. Look at Van den Kroonenbergs technical problem-solving model, for example. Building a bicycle becomes a piece of cake using this detailed method for designing tools or equipment. But it gets you nowhere if what you want to design is an organisation. Another example: Strategic management uses a variety of models designed specifically for a single purpose. Think of the SWOT analysis, Porter's five forces model, or a fishbone diagram. Each is a very convenient tool for a specific situation – but they all have their limits in terms of applicability.

The MPSM is a more general method, applicable for various problems encountered in various situations in all areas of expertise. It has helped a waste management company solve an issue with working hours which did not fit with garbage truck routes; mathematics alone was not enough to solve this logistical puzzle. MPSM's consistent approach helped make an airport better suited to certain types of aircraft. It has improved productivity of packaging machines. The MPSM can be used anywhere, anytime.

1.5 Tailored to Your Problem

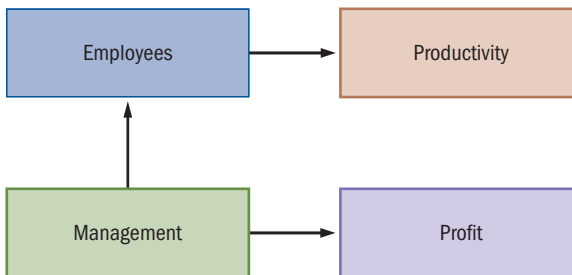
Many problem-solving methods are only concerned with whatever solution technically solves the problem. Established powers and concerns in an organisation are not investigated. Who has access to what information? What does the decision-making process look like, and how does it work? What is going on behind the screens? There are many and frequently unclear aspects involved, many or all of which may, to some greater or lesser extent, be responsible for the problem. Power factors are not explicitly covered by the MPSM - these are already touched upon when defining the problem. Using the MPSM, you will find that no problem is an isolated issue. Any problem is a problem in the context of an organisation. The MPSM takes that into account, thereby guiding you to a tailored solution.

1.6 The Language of Variables

In some models, the same arrow indicator is used to describe a causal link here or a sequential order there, before suddenly representing a hierarchical relationship between different employees. As a result, objects, activities, and variables can become muddled. The MPSM does not suffer from this problem. Using the MPSM, reality is expressed in variables – and variables only. Formulating these variables carefully allows you to establish inconsistencies in your analyses quite easily. Even the most intricate problem-solving approaches become easy to untangle.

Reality is more than variables. This is also true for the harsh reality of any problem. Nevertheless, the MPSM restricts itself to the so-called language of variables. Both problems and reality itself are only expressed in terms of variables. The reason for that is simple: if you cannot express something in terms of variables, then it cannot contribute to a solution... nor can it be a problem. Restricting yourself to variables lets you structure a problem clearly, which helps you visualise it in a model. If you then use arrows to connect individuals - actors, as the jargon has it - to the variables, discerning the actual problem becomes rather difficult. Figure 1.1 is an example of a scheme in which we see both variables and actors. Relationships are depicted between actors (management and employees) and variables (productivity and profit). This makes identification of problems (causes and effects) difficult. What does the relationship between management and employees mean? Employees are not a cause of productivity; instead, a characteristic of employees is that they attain a certain level of productivity. So, in this case, productivity is a characteristic (variable) of employees. The arrow that should be there between productivity and profit is actually nowhere to be found. This means it has become difficult to identify the problems. Hence, this scheme is not a good model. If there were an arrow between productivity and profit, it would be clear that productivity was the cause of profit. Then, we would have identified two problems and the scheme (without the objects) would have been a good model.

FIGURE 1.1 Connections between actors and variables



1.7 Framework

Many problem-solving methods require thorough and dedicated study before you can use them to go anywhere near an actual problem. For example, getting to grips with Mintzberg's configurations, complete with their coordination mechanisms, feedback loops, and design parameters can take a while. And by the time you do, you will not yet have made any progress with the problem itself. The MPSM, on the other hand, sets itself apart by its simplicity. You do not need to know the seven phases by heart; a global idea is all you need - as long as you have this book at hand.

The phases of the MPSM are the basis for your own problem solving approach. You should look at this approach as a framework, a grid for you to fill in as you want. Each of the phases allows you to use different models, techniques and methods to your hearts content. This lends itself to

methods used in project management. If you are looking into connections and causes (phase 3), McKinsey's 7S-model (Athos & Pascal 1982 and Peters & Waterman 1982) can be a useful tool. If you are trying to come up with alternative solutions (phase 4), you may benefit from creativity supporting techniques such as brain storming sessions or mind maps. Every phase in the MPSM lends itself to the use of convenient tools and instruments from the various management theories. It is a general approach which allows enough room to use different, specific instruments as needed.

1.8 Researching and Designing in One

Most books on methodology are concerned with research methodology, which centres on how to acquire knowledge and information. A minority of methodological literature is concerned with designing, with solving practical problems. In this book on the MPSM, research and design go hand in hand. You are unlikely to research a problem for the sheer joy of it. The goal of nearly all research is to contribute to resolving a situation you are unhappy with. In order to come to grips with a problem, you need knowledge. In order to get knowledge, you conduct research; you investigate. Using existing literature, you can certainly go some way when it comes to researching or designing solutions. But getting the two to mesh can be quite a hassle. It starts with formulating complex situations in an organisation in terms of problems that are both relevant and manageable. What sort of knowledge do you need for your research? If you are able to come up with a suitable problem definition, you will soon be faced with new obstacles: how are you going to use your new-found knowledge? Why did you conduct research in the first place? The MPSM helps you ensure that your research is useful and lets you assist in solving problems for companies and non-profit organisations.

Summary

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- ▶ The Managerial Problem-Solving Method allows you to embark on necessary creative jaunts within the systematic approach to a problem. These excursions are a requirement for reaching quality solutions.
 - ▶ The MPSM is one of several systematic problem-solving approaches. When using the MPSM, you follow the steps described in these seven phases:
 - Defining the problem
 - Formulating your approach
 - Analysing the problem and asking questions. What is the nature of the problem? What is causing it? Why are any existing solutions not used?
 - Formulating (alternative) solutions
 - Choosing a solution
 - Implementing the solution
 - Evaluating the solution: did it work?
 - ▶ The MPSM is applicable to various problems encountered in various situations in all areas of expertise.
 - ▶ The MPSM takes into account that no problem is an isolated issue. A problem is embedded in the context of an organisation, and needs a fitting solution.
 - ▶ Using the MPSM, you express a problem in terms of variables. Formulating these variables carefully allows you to establish inconsistencies in your problem-solving work quite easily.
 - ▶ The MPSM should be considered a framework, a grid for you to fill in as you need. Each of the phases allows you to use different models, techniques and methods for a custom problem-solving approach.
 - ▶ In this book on the MPSM, research and design go hand in hand. The goal of nearly all research is to contribute to resolving a situation you are unhappy with. In order to come to grips with a problem, you need knowledge. The MPSM helps you ensure that your research is useful and lets you assist in solving problems for companies and non-profit organisations.
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Core Concepts

Managerial Problem-Solving Method

A problem-solving method for managerial problems that uses both creative and systematic approaches, such as investigating and resolving. There are seven phases to the MPSM, which you follow step by step:

- 1 Defining the problem
- 2 Formulating your approach
- 3 Analysing the problem and asking questions. What is the nature of the problem? What is causing it? Why are any existing solutions not used?
- 4 Formulating (alternative) solutions
- 5 Choosing a solution
- 6 Implementing the solution
- 7 Evaluating the solution: did it work?

The Language of Variables

Expressing problems in terms of variables. You untangle an issue and define it as a series of variables, measurable attributes. Some variables can only be measured using indicators.
