

Beyond Theory: A Philosophical Framework for Decision-Making in Management

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Abstract

A philosophical framework is presented to improve decision-making in management. Philosophically based methods provide a rich body of knowledge for addressing complex issues, but their practical application in management is difficult. The framework aims to bridge this gap by not focussing on specific methods such as game theory or utilitarianism, but by demonstrating how appropriate methods can be identified and applied to support decision-making. One element of the framework is the definition of clear goals that meet specific criteria and form the foundation for decision-making. The process involves identifying and comparing means to determine their effectiveness in achieving the goals under given constraints and resources in different scenarios. The framework utilises models to reduce complex issues to their most important aspects. The quality of these models is crucial because it significantly influences the understanding and evaluation of complex issues and thus the quality of decisions. The philosophical framework presented here is itself a method that makes it possible to identify, evaluate and apply appropriate methods in decision-making scenarios, thus providing a comprehensive and versatile tool for managers seeking optimal solutions in complex environments.

Keywords: philosophy, management, decision-making, methods, models

1 Introduction

Philosophy offers an extensive collection of knowledge and methods that allow to successfully analyse complex issues and gain insights. This knowledge can be of great help in management to improve understanding and decision-making. However, there is a large gap between the theoretical methods developed in philosophy and other sciences and their practical application in management. This chapter aims to bridge this gap by providing a philosophical framework for decision-making in management. The goal is to provide a better understanding of how optimal solutions are found and how appropriate methods can be identified and applied to support decision-making. The aim is not to discuss specific philosophical methods such as game theory or utilitarianism and their application, but to show how a philosophical framework facilitates critical analyses of relevant issues, identification of important aspects, and efficient and practically realisable reasoning processes.

The chapter is structured as follows: Section 2 analyses the roles of philosophy and management and their relationship. Section 3 shows that goals are a fundamental component of decision-making processes in management and which properties they must possess for optimal decision outcomes. Section 4 discusses the relevance and required properties of means, i.e. actions that allow the desired goals to be reached. Section 5 examines the importance and crucial characteristics of models, which allow complex issues to be simplified to focus on relevant aspects and to make predictions. Section 6 evaluates the use of scenarios, which make it possible to address uncertain events and compare various developments in terms of the efficiency of means and the fulfilment of goals. Section 7 analyses the selection and application of philosophical and economic methods, such as game theory, in management and how they contribute to successful decision-making. Section 8 provides a summary and concluding remarks on the benefits of applying philosophical methods in management.

2 The Relation between Philosophy and Management

While there is no universally accepted definition of philosophy (cf. Overgaard et al., 2013, ch. 2), Iñiguez (2022, p. 1) argues that "[t]he purpose of philosophy is to provide insights that help us to better understand the world, answers to the question of who we are, or reasoning to justify how we should act." With regard to the definition of management, Kaehler et al. (2019, p. 20), based on a literature review, conclude that:

Management is a steering influence on market, production and/or resource operations in an organization and its units that may address both people and non-people issues and is exerted by multiple organizational actors through either anticipatory norm-setting (= constitutive or strategic management) or situational intervention (= operational management) with the aim of achieving the unit's objectives. To manage a unit is synonymous with "directing" or "leading" it.

The two statements highlight the close relationship between philosophy and management: Management is exerting influence on people and circumstances to achieve certain goals. Philosophy provides the means to do so by offering methods that enable

a thorough analysis of the issue and identification of the best possible means to achieve the desired goals.

To be successful in this regard, it is necessary to overcome the gap between the theoretical methods of philosophy and the practical aspects of management. In management, concrete issues are addressed, such as how to react to a new, better product from a competitor or how to deal with the outbreak of war in a country relevant to the company. It is often not clear which philosophical methods should be applied in such cases – especially as decision-making in management often affects many areas at once, economic ones as well as political, social and ethical ones.

This problem can be addressed by using a philosophical framework in management decision-making. The philosophical framework represents an objective and result-oriented approach for optimal understanding. It enables issues to be perceived in such a way that they are suitable for critical analysis, that their core elements can be identified, and that they are framed in such a way that appropriate philosophical methods can be identified and applied. In the following sections, individual components of the philosophical framework are presented, which together form a comprehensive picture and allow an optimal understanding of complex issues in management.

3 Goals

The definition of management above highlights that management is about achieving specific goals. This aspect is of fundamental importance and determines whether the practice of management is successful. All management decisions serve the purpose of achieving the set goals and all activities that are directed by management serve as the means to achieve these goals. For successful management, it is therefore necessary to properly define the goals to be achieved. This requires considering several aspects which are analysed in the following.

First, it is important to ensure that the defined goals represent the desired end state. Otherwise, a goal may be chosen that is only a means to another goal. For example, a commonly set goal of companies is to sell more products – however, their actual intrinsic motivation is not to sell more products but to make more profit. Focusing on means instead of the actual goal causes other means to be disregarded, even if they are better suited to achieving the goal. For example, reducing production costs or setting up a different sales approach could lead to a greater increase in profit than selling more products. In extreme cases, the means can have the opposite effect to the actual goal – for example, to sell more products, the price of the products could be lowered, which could reduce profits instead of increasing them. The distinction between intermediate goals and final goals is often made in management using the two terms 'objectives' and 'goals'. Goals are end states that are to be achieved and that constitute a value in themselves. Objectives, by contrast, are concrete and measurable sub-goals that must be met to ultimately achieve a goal.¹

¹The terminology used here therefore differs from the terminology used in Kaehler et al. (2019, p. 20)'s definition of management above. There, the aim of management is described as the achievement of 'objectives' – but these are to be understood here in the sense of 'goals'. In the practical execution of management, however, it may well be that the manager of a department is given a goal for his department that is the realisation of a means, of an objective, for the company – for example, a company wants to increase its

Second, it may be that not just one goal, but several goals need to be fulfilled concurrently (cf. Goodwin and Wright, 2014, ch. 2-4). For example, a company can have the goals of making a profit, achieving a high level of employee satisfaction, and having a positive impact on society. In this case, the relationship between the goals must be considered. Goals can be synergetic, neutral or contradictory to one another. A goal is synergetic to another if it partially contributes to its realisation; for example, a high level of employee satisfaction represents a socially positive effect. A goal is neutral to another if it has no influence on it. A goal is contradictory to another if it impedes its fulfilment; for example the sale of cigarettes makes it more difficult to support the health of customers. It must be noted that the relationship does not have to be bidirectional. For example, high employee satisfaction has a positive effect on society, but a positive effect on society does not necessarily increase employee satisfaction.²

In this context, the significance of the goals in relation to each other must also be taken into account. Often, not all goals can be completely fulfilled due to limited resources or due to other constraints. In this case, the goals must be weighted in relation to each other, and it must be decided which goals should be fulfilled to what degree (cf. Jafarzadeh et al., 2022). For goals to be compared with each other, goals must be converted into a joint metric. Such a metric can be, for example, a financial value that is attributed to the fulfilment of a goal. In the example above, a high level of employee satisfaction could be valued at two million euros for the company and a positive social impact at one million euros. If the company has limited resources and these only allow it to fulfil one of the two goals, it will opt for employee satisfaction accordingly.³

Third, goals must fulfil various qualitative conditions to be useful. A framework that is frequently used in practice is that of SMART goals: Goals must be specific, measurable, attainable, relevant and time-bound (Cothran and Wysocki, 2005). If one or more of these points are not met, this makes it difficult to implement the goals or measure their success. The criterion of specificity should be emphasised in particular. If a goal is not clearly defined, the possible means cannot be assessed in terms of their suitability because it is not clear what is to be achieved.

Concise examples of the relevance of this criterion are provided particularly in the political sphere, in which the undefined nature of goals is utilised. For example, almost all political parties are in favour of justice. However this goal is without meaning, as there are three different types of justice: Equality-based justice means giving everyone the same – as is the case in public schools, where all children receive the same education. Needs-based justice means giving everyone what they need – as is the case with many health insurance schemes. Performance-based justice means giving everyone what they have achieved – as is often the case with salaries. This case of justice as an unspecified goal shows how important it is to clearly define a goal to be able to fulfil it.

profits and the manager of the sales department is tasked with implementing the company's objective of developing a new sales strategy.

²For a practical example of how the relations of goals can be analysed, see Christensen (2022).

³For a study of a practical example on how goals are weighed against each other, see e.g. Christensen et al. (2018).

A clear definition of a goal is related to its measurability, but is not identical to it. This is because measurable variables that indicate the fulfilment of a goal are often not the same as the goal itself, but merely have a stronger or weaker relationship with the goal. For instance, while the metric monetary value of the revenue surplus is equivalent to the goal of profit, the metric sales only correlates with the goal of profit to a limited extent. In such cases it is possible that a company achieves the metric but not the goal. In extreme cases, it is even possible that the fulfilment of the metrics is at the expense of the goal – for example, if a company offers services at a loss to generate more sales and profits are further reduced in the process. This phenomenon can often be observed in everyday business practice, regardless of whether it is assumed that a reduction in CO₂ emissions automatically leads to greater environmental protection, that applicants with better grades perform better, or that fewer customer complaints indicate higher product quality.

Fourth, goals must be differentiated from externally defined framework conditions. Such framework conditions are, for example, laws that stipulate certain employee regulations or product specifications. They also include other externally imposed processes and conditions that must be adhered to, such as social order or customary means of payment. Although most of the conditions are in general not particularly relevant, they can be of great importance in individual cases. For instance, the maximum speed allowed on roads is irrelevant for most management decisions – unless, it is a car manufacturer’s decision regarding the development of a new sports car. Framework conditions differ from goals in that their fulfilment is not intrinsically motivated but rather externally imposed and compliance with them is, at least in general, necessary.

Overall, the above considerations emphasise that it is necessary to think comprehensively about the goals to be achieved and to define them accurately. Only if the goals are well-defined and fulfil all requirements can it be ensured that the decisions to achieve them can be made on a sound basis and are effective. Otherwise, there is a risk that management decisions will not serve the actual goals to be achieved and that the wrong goals or no goals at all will be achieved.

4 Means

Means are actions that can be carried out to fulfil specific goals (cf. Converse, 2023). A large part of management is concerned with determining suitable means and ensuring their successful implementation. In general, many different means can be used to achieve a specific goal. For example, the goal of increasing a company’s profit can be achieved by reducing production costs or operating costs, or by increasing revenue. These means can be further subdivided into various, more precisely defined means – revenue can be increased, for example, by raising prices, through a more efficient sales model, or by tapping into new markets.

The various means differ according to several factors. Among others, different means fulfil goals to different degrees (cf. Kruglanski et al., 2015). For example, a diesel-powered delivery vehicle may be cheaper to deliver goods to the customer, but an electric delivery vehicle could be perceived more favourably from an environmental perspective. Means can also be compared on the basis of the costs needed, the time

needed to realise them and the time needed to achieve the goals, as well as other factors that may be relevant to individual companies. For this purpose, it may be necessary to determine the relevant criteria and to evaluate the various means on the basis of these criteria (cf. Goodwin and Wright, 2014).

Often not just one means is implemented, but several means at the same time. Equivalent to goals, means can also be synergetic, neutral or contradictory to other means. Accordingly, it is necessary to examine the relationship between means. This allows to determine the set of means that offers the best overall fulfilment of goals within the limits of the maximum possible costs (cf. Goodwin and Wright, 2014, ch. 14). For example, if a company wants to convert its sales fleet to electric vehicles to fulfil the goal of environmental friendliness, the construction of a solar power system is a synergetic means, as its electricity can be used directly for vehicles. The sale of new products with the aim of increasing profits, on the other hand, would be neutral to this. At the same time, the company must consider whether it can implement all three means at once or whether, for example, it will have to forego the construction of the solar power system because it does not have sufficient funds.

The analysis shows that means must be carefully evaluated – both in terms of their own properties and how they relate to each other. Only a well-considered and well-chosen set of means allows the given goals to be achieved as effectively and efficiently as possible. If the best available means are not selected, the goals will be achieved only at excessive cost or to a lesser extent.

5 Models

As shown in section 2, the main task of management is to make decisions to achieve certain goals. This involves recognising the various possible options for action and selecting the one that is most suitable. In simpler, clearly defined situations, such as a poker game, where one has only a few options available at any given time, one can compare all options with each other and use e.g. statistical methods to determine the most promising action. This method already reaches its limits in a chess game, as this offers more possibilities than can even be calculated with computer systems today – accordingly, it is no longer possible to fully grasp the entire issue and completely think through and evaluate all possible options for action. Instead, one has to simplify the problem and, e.g., use heuristics, i.e. mental shortcuts, to assess certain sets of moves as more or less promising. For example, one can exclude all sets of moves in which one would lose several major chess pieces within a short time.

In daily practice, one is usually confronted with very complex and not clearly defined issues, i.e. issues that cannot be grasped in their full complexity. Specifically, while in games all relevant factors are predefined, e.g. the possible cards and their distribution, this is not the case in practical issues. Equally, while games specify which moves are allowed, in practical issues the possible courses of action are not defined. Since practical problems generally cannot be fully captured, it is necessary to create models of them, which can serve as a basis for decision-making.

Models are simplifications of complex issues in which factors that are not relevant are disregarded (Frigg and Hartmann, 2006). For example, in a marketing campaign,

customers are often assessed only on the basis of a few socio-economic factors. All other customer characteristics, such as their name, hair colour or place of birth, are disregarded unless they are of interest for marketing purposes. It is crucial for a successfully applicable model that it is as simple as possible, but that at the same time all those factors that are relevant are taken into consideration. Deciding which factors are relevant and which are not relevant is very complex and many different methods can be used to do this (Frigg, 2022). Examples include more philosophical methods such as statistical analysis and causal models (see e.g. Peterson, 2017), more economic methods such as SWOT analysis⁴ (see e.g. Altman, 2017), case studies and expert interviews, and methods from artificial intelligence such as machine learning (see e.g. O’Callaghan, 2023).

By using a model, it is then possible to derive various possible courses of action. A causal model, for instance, makes it possible to identify factors that influence a desired target value (cf. Pearl, 2009). If the model shows for instance a causal relationship between the punctuality of public transport and customer satisfaction, the latter can be increased by improving the former. It should be noted that different models indicate different possible courses of action or only define them to a limited extent. For instance, a causal model shows which factors need to be influenced to have an impact on another factor, but it does not specify how the influence should be exerted. As a concrete example, punctuality can be increased in many ways. Some of the possible courses of action may be specified in the model in the form of further causal factors that influence punctuality, but many other courses of action are also possible (unless the model is complete, which is usually not the case). In addition, not only the causal factors but also the causal relationships themselves can be changed – for example, customers can be influenced to lower their expectations and thus the influence of punctuality on customer satisfaction can be reduced. Nevertheless, identifying relevant factors is already very helpful and numerous methods can be used to determine different options for action. Methods frequently used in this area include consulting experts, case analyses and creative brainstorming.

As described above, models are simplified representations of complex issues in which irrelevant aspects are disregarded. This results in two potential sources of incorrect predictions from the models.

First, the reduction to relevant factors means that factors that are excluded are not considered relevant but may still have a hidden influence on the decision-making process. This also applies to the possible options for action. Here, too, favourable options for action may not be taken into account or excluded too quickly because they are supposedly not relevant. This aspect is evident, for example, when it is assumed in economics that actors act rationally. In principle, this is an ideal of many actors – this text here also ultimately aims to enable the reader to act rationally – but in practice, decision-making is much more complex and is also influenced by other factors. Such other factors can be, for instance, emotions in the case of individuals, and sub-optimal decision-making processes or personal preferences of the decision-makers in the case of companies.

⁴An introduction to the SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) can be found in Sammut-Bonnici and Galea (2015).

Second, models are merely representations of complex issues, but not the issues themselves. Accordingly, the models can be incorrect and not represent issues as they actually are. This is particularly the case if the underlying mechanisms can only be assumed but are not known with certainty. A concise example of this aspect is provided by the various theories in the field of international relations. Idealism, for example, assumes that states act rationally and therefore strive for peaceful and profitable co-existence to maximise the standard of living of their citizens. Realism, on the other hand, assumes that the central goal of every state is to survive, which it can most certainly achieve by being more powerful than all its possible opponents, where necessary with the help of war. In addition to these two theories, there are many others, all of which assume different underlying mechanisms in the complex field of international relations (Burchill et al., 2022). Although there are good examples for all the theories that can be used to confirm their observations, the underlying mechanisms themselves cannot be observed or can be observed only to a limited extent – accordingly, the theories can be tested only to a limited extent and have to be evaluated e.g. on the basis of their performance.

In this context, it is relevant that models are not intended to depict truth, but merely aim to support decision-making by enabling predictions to be made (cf. Weirich, 2015). The reason for this is that models only need to fulfil their purpose, which is to make correct predictions – whether they do this through a high correspondence with truth or through alternative, more efficient forms of representation that do not correspond with truth but lead to correct predictions is irrelevant from a results perspective. Models simplify complex issues to the extent that correct predictions are made, but irrelevant aspects are ignored as far as possible and relevant aspects are replaced as far as possible by simpler forms of representation. Accordingly, the quality of models should not be assessed on the basis of their correspondence with truth, but on the basis of how well they are suited to support decision-making processes. Heuristics, which people often use in everyday life, are understood as very simple models (Kahneman et al., 1982). Although these sometimes lead to incorrect results, they allow sufficiently good decisions to be made with few resources. The disadvantages of heuristics are that people have biases and social prejudices that lead to suboptimal decisions. Nevertheless, using heuristics is the only way to make as many decisions as quickly as everyday life requires.

Models are a central component of philosophy, management and even science in general. Ultimately, the aim of science is to develop models that allow one to understand and manipulate the world as well as possible, i.e., to influence it according to one's own interests. For example, only an understanding of physics or chemistry makes it possible to build aeroplanes that fly across the world or to produce medicines that influence health. This shows clear parallels in the goals of science and management: both are concerned with developing the most useful models possible to fulfil certain goals. The difference lies primarily in the fact that science is concerned with the development of more basic models, whereas management is concerned with using and implementing actions from specific models.

The task of philosophy in this respect is to analyse the creation and use of models on a meta-level. This includes, for example, which ideals models should fulfil, such

as simplicity, explanatory power or correspondence with truth (cf. Pfister, 2022, sect. 2.3). Pragmatism, for example, argues that models must above all be useful, but that their consistency with truth is not essential. Realism, on the other hand, argues that scientific models converge to truth. Which ideals are to be fulfilled also depends on the various scientific fields and their application – logic and mathematics require much less correspondence with truth than chemistry and biology, for example. Furthermore, philosophy develops and analyses methods that are suitable for developing and using models. These include methods for obtaining observational data on which the models are based; formal inference methods such as deduction, induction and abduction, which allow new information to be derived from given information and predictions to be made (Pfister, 2022); and methods for comparing and selecting models.

The importance of models is enormous both in science and in management, and the quality of the models is decisive for success (cf. Bailer-Jones, 2009). In science, examples of this include the development of the heliocentric world view, which allowed better predictions to be made about the movement of planets; the development of quantum physics, which made it possible to explain observations at the particle level that classical physics could not; and Bohr’s atomic model, which enabled significant developments in the field of chemistry. The examples show how important the quality of models is in science and that it is crucial for making good predictions – and therefore good decisions.

The importance of the quality of models is also vital in the area of management. Most of the factors that determine the success of a company are predetermined from the outside: Either in the form of external conditions such as laws that apply to all companies or in the form of factual conditions such as available resources that cannot be changed, at least at the moment of decision-making. Models used by companies, on the other hand, can be adapted at will and can represent a competitive advantage if they allow better predictions and decision-making than the models of competitors.

An example at the level of society as a whole of how decisive the quality of models are in the economic sphere is provided by the conflict during the Cold War, in which the economic model of capitalism was able to explain, predict, and therefore utilise economic processes much better than the model of the planned economy, which ultimately contributed to the downfall of the USSR (Loth, 2015; Bollard, 2023). In the corporate world, there are also many examples of bad decisions being made due to poor modelling. These include Kodak’s continued focus on analogue rather than digital photography, as well as General Motors’ financial problems caused by not recognising changing market demands. Similarly, bad models can often be observed on a small scale in corporate decisions. An indicator of this is often when actual developments do not match expectations. This can happen because an unlikely but considered event occurred, or because the model did not predict the event that occurred.

It is not always simple to determine why expectations have not been met and whether or not this indicates a poor quality of the model, as the coronavirus pandemic shows. Almost all companies were surprised by the outbreak of the coronavirus pandemic, which is understandable given that hardly any company has ever been affected by such a pandemic before. Nevertheless, there have been numerous historical examples, from the Spanish flu to bovine spongiform encephalopathy (BSE) and avian

influenza, and there is a consensus among scientists that there is a significant risk of pandemic outbreaks due to globalisation, large-scale livestock farming and population growth. Furthermore, while the probability of a global pandemic is relatively small, the probability that one of the many possible unlikely events will occur – be it an outbreak of war, a natural disaster, a nuclear accident or a pandemic – is not.

Whether the occurrence of an unlikely event indicates that the model is bad or not depends on various factors. For example, the model may be so simplified that it does not take unlikely events into account from the outset. Alternatively, the model may have predicted the event, but the event was not considered further due to its improbability. Or an unlikely event was taken into account in the model and subsequently evaluated, but no means were implemented to address this event due to its improbability. When evaluating the quality of models, it is not automatically the case that the model that takes the unlikely event into account is the best. Instead, the best model is the one that is most suitable for the specific company. For instance, if the company is a global pharmaceutical company, the consideration of possible pandemics is crucial. In contrast, if the company is a local retail business, considering pandemics over the possibility of unlikely events occurring in general is not helpful. This is because too many resources would have to be used for the evaluation of the pandemic and at the same time only a few options for action are available, not least due to the limited predictability of the course of events.

In summary, management often concerns very complex issues that need to be simplified with the help of models to identify relevant aspects and make efficient and accurate predictions. The quality of the models is crucial and determines the success or failure of the decision-making process and, therefore, of the company.

6 Scenarios

Management success depends largely on the ability to predict how a complex issue will develop in the future. Predictions of what the future state will be are made on the basis of the current state and models. Such predictions can be made for different cases – for example, it is possible to compare how the future is likely to be if a certain means is implemented, but also how it will be if an alternative means is implemented. Each of these predictions, for which different assumptions are made, represents a scenario (Cairns and Wright, 2017). Considering different scenarios makes it possible to compare different options for action and to determine how the future develops in the individual cases.

Scenarios are also relevant in that they allow different possible developments of an issue to be taken into consideration. A basic assumption of modelling and all actions – and therefore management – is that the issue to be dealt with follows certain rules, at least in part. Otherwise the future of the issue could not be predicted or influenced.

At the same time, complex issues are contingent, at least in practice. This means that there is a possibility, but not a necessity, that particular events will occur and that an issue will develop in one way or another (Huoranszki, 2022). The contingency can be attributed to two possible reasons. On the one hand, it may be that the issue is intrinsically contingent, i.e. certain aspects of the issue are not subject to rules. This

includes, for example, the decay of radioactive atoms or the outbreak of a pandemic. On the other hand, the knowledge of a stakeholder addressing the issue may be limited, and although the issue itself would be predictable, it is not for the stakeholder. This may be due, for example, to the fact that the stakeholder has limited knowledge only or that the model used makes too many simplifications. This includes many statistical models that make it possible, for instance, to predict how much money customers spend on average, but not how much money a particular customer spends. Although it is not entirely clear from a philosophical perspective to what extent contingency is due to intrinsic limitations and to what extent it is due to limitations of the stakeholders involved in the issue, contingency is at least in practical management decision-making the default, as the knowledge of decision-makers is limited.

Scenarios make it possible to address this contingency. Scenarios can be used not only to consider different means in the same development of an issue, but also to consider the same or different means in different developments of an issue. In the area of financial planning, for example, generalised comparisons are made between different scenarios by assuming an optimistic as well as a pessimistic economic development. How many different and which different developments of the issue are to be taken into account is a case-by-case decision that depends both on the decision to be made and on the issue to be investigated. In general, different possible developments of an issue can be considered together as one scenario if they are similar in their development under the given means and if their degrees of goal fulfilment do not differ greatly from one another. However, if there are major deviations in their development or in their degree of goal fulfilment, it can be advantageous to consider the various development options separately.

Equally, it is advantageous for efficient decision-making to consider means in different scenarios if their effect on goal fulfilment strongly depends on how the problem develops. Which means are chosen for implementation at the end of the decision-making process depends on the evaluation method selected. For instance, it can be advantageous to implement the set of means that leads to the highest average goal fulfilment across all scenarios, or to choose the set of means that guarantees a certain minimum fulfilment in each scenario. The latter can be particularly relevant in regard to the financial stability of a company. It may be better to choose a means that leads to little company growth which occurs in every scenario, than to choose a means that leads to high company growth in the most likely scenario but holds the risk of insolvency in some unlikely scenarios.

In summary, scenarios increase the complexity of management decision-making processes, as not only is one possible development of the issue considered but various developments. However, scenarios allow contingent developments of the issue to be taken into account and the extent to which means are suitable for achieving the goals under different scenarios can be evaluated.

7 Methods

Management benefits from a rich set of philosophically founded methods developed in many different scientific disciplines, such as epistemology, economics, mathematics and the social sciences. Frequently used methods are, for example, game theory, cost-benefit analysis, statistical analysis, social network analysis, SWOT analysis, and cognitive behavioural theory (cf. Nermend et al., 2021).

Methods are systematic approaches that are theoretically justified and empirically validated and that allow an issue to be analysed using specific procedures to gain certain insights. Thereby, the gain of insight is the main aspect, and the goal is to answer certain questions that are of relevance to one. The underlying theoretical considerations and the procedures to be used are developed and applied in such a way that they are suitable for understanding the given issue.

As such, the methods strongly parallel the decision-making process in management presented in this chapter. In both cases, the aim is to fulfil certain goals by identifying and applying suitable means. Equally, in both cases, the basic theoretical assumptions form a model that allows an issue to be considered from a certain perspective and reduced to the essential aspects that are important for the relevant insight. Only the type of insight to be gained is different. While decision-making in management has the aim of determining which means need to be implemented to achieve the set goals, methods primarily serve to provide answers to queries that arise in the course of the decision-making process.

Consequently, methods are a means used to support the management decision-making process. Which methods are to be applied in which step depends on the specific question to be answered in the decision-making process. The framework presented in this book provides guidance for the selection of suitable methods, as it allows methods to be categorised according to their area of application and their purpose. For instance, in regard to defining corporate goals, methods that allow goals to be set in relation to one another and compared with one another are particularly relevant. By contrast, in regard to identifying possible means, creative and less formal approaches can be advantageous. Methods that are suitable for quantitative optimisation, on the other hand, can be used in particular to evaluate and compare possible means. Furthermore, methods can be classified according to the topics of interest. If, in addition to financial goals, moral goals are also to be met, ethical approaches can be useful; in regard to influencing human behaviour, psychological and social methods are particularly relevant.

Due to the diversity and complexity of decision-making processes in management, it is not possible to provide precise instructions as to which method should be used when – the nature of the issues to be addressed and the available resources that can be used for the decision-making process are too heterogeneous. In the end, the selection and application of the method always depend on how the decision-making process can be optimally supported. Methods should be used in particular where they offer an additional gain in knowledge and where not using a method would lead to poorer results in implementation. At the same time, their use should be minimised to keep the decision-making process as efficient as possible. A balance must be found between

the optimal solution that can be found through the use of methods and the effort required to find this solution.

In addition, different methods require different assumptions and, as they are based on models, can lead to erroneous conclusions; thus their interoperability and reliability should be considered. This finding also shows that a wider range of methods should be used and that it is not advisable to focus on and rely on specific methods (cf. Downes, 2020). Although some methods yield significantly better results than others in certain contexts, it is important to be aware that if the context changes, the method may lead to erroneous results or other methods may provide better results. Ultimately, not least because of their underlying models, methods can be understood as complex heuristics, i.e. as mental shortcuts that allow fast predictions and conclusions at the expense of detail and reliability.

Finally, it should be noted that the framework presented here is also just a method, as the parallels above clearly show. In contrast to other methods, such as statistical analysis or SWOT analysis, the aim of the framework is not to address content-related aspects, but to address methodological ones. The framework should enable suitable methods to be recognised, categorised and evaluated in terms of their usefulness in the decision-making process in management. Like all methods, the framework aims to provide a solution to a question – in this case, how can management decisions be best realised – and should be used precisely when it serves this purpose. If other methods are more suitable than the framework presented here due to certain circumstances, then these should be used – here too, an openness towards other, alternative methods and an orientation towards their usefulness is called for.

8 Conclusion

This chapter presents a philosophical framework for decision-making processes in management. To be able to make good decisions, goals must be defined that have to fulfil certain requirements. Subsequently, means can be identified and compared to evaluate which means are best suited to fulfil the goals as much as possible under the given conditions and resources. The means are evaluated by using models that make it possible to reduce complex issues to their most important aspects and thus to make efficient decisions. The quality of models is of importance because it determines how well complex issues can be understood and evaluated. Scenarios make it possible to address contingency, i.e. the possible occurrence of events, and allow the appropriateness of means and the fulfilment of goals to be evaluated under uncertain developments of the issue. Methods from economics and other disciplines, such as statistical analyses and behavioural theories, provide models that make it possible to answer various detailed questions quickly and easily within the decision-making process; for example, the extent to which a certain means can fulfil a certain goal. In this context, the framework presented here represents a method as well – but not with the aim of answering content-related questions, but rather to provide a practical approach for identifying, evaluating and utilising suitable methods within the decision-making process.

The aim of the chapter is to familiarise managers with the decision-making process from a philosophical perspective and to familiarise them with the approach and the

opportunities that arise from it. If the decision-making process can be better organised on the basis of the framework and the function of frequently used methods can be better understood and utilised, this can lead to a higher quality of decisions. It is often difficult to utilise theoretic considerations from philosophy and other scientific disciplines in concrete applications, not least because of the ambiguity and complexity of practical issues. It is hoped that this chapter will make it possible to bridge this gap and make it easier to utilise the theoretical findings. Although dealing with theoretical knowledge and the numerous scientifically based methods can be tedious, their use enables better decisions to be made, so that their application can be profitable for managers – and, in the long term, even enables a simpler, more efficient and more trustworthy approach to address complex issues.

References

- Altman, M. 2017. *Handbook of behavioural economics and smart decision-making: Rational decision-making within the bounds of reason*. Edward Elgar Publishing.
- Bailer-Jones, D.M. 2009. *Scientific models in philosophy of science*. University of Pittsburgh Pre.
- Bollard, A. 2023. *Economists in the Cold War: How a Handful of Economists Fought the Battle of Ideas*. Oxford University Press.
- Burchill, S., A. Linklater, J. Donnelly, T. Nardin, M. Paterson, C. Reus-Smit, A. Sarago, T. Haastrup, and A. Sajed. 2022. *Theories of international relations*. Bloomsbury Publishing.
- Cairns, G. and G. Wright. 2017. *Scenario thinking: Preparing your organization for the future in an unpredictable world*. Springer.
- Christensen, J., C.M. Dahlmann, A.H. Mathiasen, D.P. Moynihan, and N.B.G. Petersen. 2018. How do elected officials evaluate performance? goal preferences, governance preferences, and the process of goal reprioritization. *Journal of Public Administration Research and Theory* 28(2): 197–211 .
- Christensen, L.D. 2022. Policy coherence in the nordic bioeconomy? a novel set-theoretic approach to studying relations among policy goals. *Environmental Policy and Governance* 32(5): 390–410 .
- Converse, B.A. 2023, 07. Problem Solving from a Goal-Systems Perspective, *Goal Systems Theory: Psychological Processes and Applications*. Oxford University Press. <https://doi.org/10.1093/oso/9780197687468.003.0011>.
- Cothran, H.M. and A.F. Wysocki. 2005. Developing smart goals for your organization: Fe577/fe577, 11/2005. *EDIS* 2005(14) .

- Downes, S.M. 2020. *Models and modeling in the sciences: A philosophical introduction*. Routledge.
- Frigg, R. 2022. *Models and theories: A philosophical inquiry*. Taylor & Francis.
- Frigg, R. and S. Hartmann. 2006. *Models in science* .
- Goodwin, P. and G. Wright. 2014. *Decision analysis for management judgment*. John Wiley & Sons.
- Huoranszki, F. 2022. *The Metaphysics of Contingency: A Theory of Objects' Abilities and Dispositions*. Bloomsbury Publishing.
- Iñiguez, S. 2022. Part i: Wisdom—why should we practice philosophy?, *Philosophy Inc. Applying Wisdom to Everyday Management*, 1–27. Springer.
- Jafarzadeh, H., J. Heidary-Dahooie, P. Akbari, and A. Qorbani. 2022. A project prioritization approach considering uncertainty, reliability, criteria prioritization, and robustness. *Decision Support Systems* 156: 113731 .
- Kaehler, B., J. Grundei, B. Kaehler, and J. Grundei. 2019. The concept of management: In search of a new definition. *HR governance: A theoretical introduction*: 3–26 .
- Kahneman, D., P. Slovic, and A. Tversky. 1982. *Judgment under uncertainty: Heuristics and biases*. Cambridge university press.
- Kruglanski, A.W., M. Chernikova, M. Babush, M. Dugas, and B.M. Schumpe. 2015. The architecture of goal systems: Multifinality, equifinality, and counterfinality in means—end relations, *Advances in motivation science*, Volume 2, 69–98. Elsevier.
- Loth, W. 2015. The cold war and the social and economic history of the twentieth century. *Asia Review* 5(1): 231–242 .
- Nermend, K., M. Łatuszyńska, and E. Thalassinou. 2021. *Decision-Making in Management: Methods and Behavioral Tools*. Springer Nature.
- O'Callaghan, M. 2023. *Decision Intelligence: Human–Machine Integration for Decision-Making*. CRC Press.
- Overgaard, S., P. Gilbert, and S. Burwood. 2013. *An introduction to metaphilosophy*. Cambridge University Press.
- Pearl, J. 2009. *Causality*. Cambridge university press.
- Peterson, M. 2017. *An introduction to decision theory*. Cambridge University Press.

- Pfister, R. 2022. Towards a theory of abduction based on conditionals. *Synthese* 200(3): 206 .
- Sammut-Bonnici, T. and D. Galea 2015. *SWOT Analysis*, pp. 1–8. John Wiley & Sons, Ltd.
- Weirich, P. 2015. *Models of Decision-Making*. Cambridge University Press.