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Decision Making Planning: The Meta-decision Approach

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Abstract

Organizational problems that demand decision-making require planning about their own decision-making process: the meta-decisions. We propose that the decisions about the process itself can be organized around three key activities: (1) diagnosis of meta-decision context and evaluation of meta-decision problem, (2) selection / planning of the meta-decision strategies and (3) meta-decision strategies implementation. This paper aims to focus on the content of the first two key activities. We develop guidelines for these two activities intended for generic decision making process and we illustrate these guidelines with examples and graphs. It is hoped that by following them a decision maker can optimize the process of decision making and thus achieve higher-quality decisions with less time and less resources invested. Future studies will need to be developed in order to empirically analyze the meta-decisions taken during a decision-making process and improve the theoretical framework here proposed.

Keywords: decision planning, meta-decision, decision strategies

1. Introduction

The life of managers, who need to make decisions that will significantly impact the organization, is often not very easy. Despite such decisions are not made with reasonable frequency and, although these decision makers often may even have the authority or knowledge to decide on their own, in practice they need to have the involvement of other people and need to develop some form of interaction with them in order to make the decision. Besides the need to resolve the problem that is demanding a decision, these administrators also need to decide how they will proceed to decide, i.e. the problem of deciding how to decide, a decision that in academia is also known as meta-decision.

The meta-decision theme is the main focus of this essay and is organized as follows: the next section highlights the importance, the objectives and the methodological aspects that guide the preparation of this essay; in the third section, we present selected literature concepts and considerations from previous studies that have addressed meta-decision theme; in the fourth section we develop the proposal by presenting the key activities of a decision maker and in the fifth and final section we present the summary and the final remarks.

2. Importance and Objectives

According to Herbert Simon, when the problem is simple or when the situation is static, the approaches available to rational decision maker are acceptable, but the same cannot be said when the situations are dynamic, complex and involving uncertainties (Simon, 1988). We believe that the meta-decision is one approach that could help to understand the dynamic aspects of the decision-makers behavior during the decision process.

When a decision maker is facing a problem that requires choosing the best among different solutions he needs to make decisions about how this problem will be solved, i.e., he needs to reflect and decide about "who is doing what and when" (Kickert & van Gigch, 1979) during the decision making process in order to identify and decide the best solution.

By making these meta-decisions, the decision maker's main objective should be to optimize the decision-making process: better quality with less time and resources invested. If quality and performance management in an organization are the result of decisions made by its management team, and these decisions should not be judged by their results but by their processes (Hammond, Keeney, & Raiffa, 2002), then the meta-decisions can

influence the quality and management efficiency of the organization.

Another aspect that highlights the importance of meta-decisions refers to the actual decision of who will participate in the decision-making process. Often the decision maker is composed of one person - the responsible executive - but there may be a group of decision makers (GD) as in the case of a task force to solve a problem whose composition can vary over decision-making process.

Despite this importance, the meta-decision is usually not discussed in management training. The literature on the subject is limited and dispersed over time. As a consequence, there are few references that discuss this subject be it for research purposes or for practical purposes.

This essay seeks to resume this subject, synthesizing what other authors have studied about this, highlighting some of the findings of empirical research conducted by the authors and proposing a conceptual framework for meta-decisions that can guide future studies on the subject and help executives plan their decision-making processes.

3. Selected Topics from the Literature

The literature on decision-making processes is extensive and has several different approaches. For instance, some studies are descriptive in nature and seek to classify decisions (Simon, 1960; Hickson, Butler, Cray, Mallory, & Wilson, 1986; Mintzberg, Raisinghi, & Theoret, 1976; Matheson & Matheson, 1998); others classify the decision making process (Nutt, 1984; Mintzberg et al., 1976; Shrivastava & Grant, 1985); others are prescriptive and guide how to select a strategic decision (Grandori, 1984; Beach & Mitchell, 1978), (Payne, Bettman, & Johnson, 1993); how to select a decision approach (Nutt, 2002) or guide how to select a style of decision (Harrison & Philips, 1991; Vroom, 2000).

We will present four topics that underpin this essay: Framing, Decision Analysis, Political Decisions and Meta-decisions. They represent four perspectives of decision-making that complement each other: the structuring of the decision problem, the rational side and the political side of a decision making and the decisions on the decision making process. The first three approaches will only be introduced, the last one, meta-decision, is central to our purposes, thus we will detain more attention on it.

Framing: The perspectives that administrators "see" the world can limit the alternatives available in a decision making process. These perspectives are influenced by what cognitive scientists call framing. Framing involves the use of mental structures that simplify our understanding of a complex reality (Russo & Schoemaker, 2002). In the field of decision making, the frameworking process can be understood, in its essence, as the alternatives and the values that are considered during the decision making process (Hammond et al., 1999, p. 30). Moore and Weatherford understand that framing is an art that begins with a symptom and ends with a statement in relation to a problem involving possible decisions and a method to measure their effectiveness (Moore & Weatherford, 2005, p. 35).

Decision Analysis: One of the known methods to support the process of decision making is decision analysis. Decision analysis was developed to support complex decisions, but is based on aspects involving common sense - objectives, alternatives, consequences and trade-offs are concepts understood by most people - and therefore apply to all decisions. The application of this method may vary in terms of the effort involved which in turn depends on the complexity of the problem to be solved and not known or about the elements that comprise the analysis of a decision (Hammond et al., 1999, p. 19). Despite its wide application, decision analysis has not been used as a way to think about the meta-decisions.

Politics in decisions: decisions made in organizational environments are influenced by various factors such as personal interests, conflicts of interest, lack of information, the high degree of uncertainty, the lack of capability of the organization to adequately model the problem to be solved, lack of shared vision of the solution and time pressure, among other things that take the decision to the political arena and who also need to be duly considered by decision makers throughout the development of decision-making (Sousa & Shibata, 2011, p. 147). The political perspective of the decision-making process can be functional (Stone, 2001) as well as dysfunctional (Eisenhardt & Bourgeois, 1988).

3.1 Meta-decisions

The meta-decision expression was first cited and explained in an article written by Mintzberg, Raisinghani and Theoret in 1976. When a decision maker faces a situation of decision making, he does not just need to take the steps toward the solution, but needs to plan and allocate resources to reach that solution. These meta-decisions – the decisions about their own decision-making process - are difficult to study because they tend to be informal, do not leave traces and develop in the mind of the decision maker (Mintzberg, Raisinghi, & Theoret, 1976).

Shortly after the publication of this article, Kickert & van Gigch developed a theoretical model of decision-making control based on the systems theory (Kickert & van Gigch, 1979). In this model, control is defined as any form of direct influence of the controller over the controlled system and meta-control refers to the control over control, in other words, the direct change of the controller so that the control itself improves. So, by bringing this model to the context of organizational decisions, they suggest that the process of decision making can be understood as an object resultant of the implementation of the decision made on a higher level, in this case, in a meta-level.

To these authors, to organize a decision process is a particular kind of control from the controller. If the objective of a decision is the change of the structure of the controller him / herself, this change can only be performed by a decision maker at a higher level, in this case a meta-controller

Kickert and van Gigch proposed that a process of organizational decision making can be subdivided into three subsystems – sub, aspect and phase:

Sub: groups, departments,

Aspect: the issues involved, the topics.

Phase: the process steps.

Thus, the structure of this system is defined as a set of relationships among these three subsystems, and that these relationships among the subsystems should be interpreted as "who is doing what and when". In synthesis, meta-decision is a decision (or set of decisions) that the meta-controller takes (the decision maker) about the structure of the decision process.

Wang defines meta-decision as "the decision on how to make the practical decisions required through the whole decision process" (Wang, 2000). To this author, the ability of a decision maker in the meta-decisions is built upon deep reflection and introspection on their abilities. However, the most difficult part in the task of meta-decision involves self-awareness in detail and emotional self-regulation. In practice, a decision-maker needs to be aware of its own biases and prejudices regarding the decision to be made.

Wang suggests that the process of meta-decision involves predominantly two tasks: (1) decide on the style of the decision and (2) design the decision process.

The first task, to decide on the style of the decision: decide on the participants of the decision and their roles. The decision on the participants and their roles may assume different positions between two extremes, ranging from an autocratic to a democratic style. The decision style involves the thinking style: systematic and intuitive. In the systematic thinking, the decision-maker inclines to solve the problem, structuring it by using certain methods, whereas the intuitive tends to be based on sensibility to signs difficult to be expressed verbally.

The second task refers to the designing of the decision making process. It is up to the decision maker to formulate their own flowchart and constantly change it during the decision process. At each stage the decision maker can also select the appropriate thinking style.

Russo and Schoemaker suggest that before they start the process of decision making itself, the decision maker needs to dedicate their time in making decisions about the process itself. Preliminary, however, there is a need of the decision maker to assess the nature of the decision, decide what they need to decide on, identify the stages of the decision (organization, intelligence, arriving to conclusions and learning from the experience) these being the most critical, evaluating how much time to dedicate to each stage and mentally establish a management plan decision, about the necessary help, and so on. For them, "meta-decision carefully constructed can help save time and money" (Russo & Schoemaker, 2002, p. 10). And, accordingly, they prescribe a set of twelve questions that can help a decision maker to design a decision-making process. The following table presents these questions.

Table 1. Deciding on how to decide, in Russo's and Schoemaker' perspective

Crucial questions	
1.	What is the primary difficulty in this matter? Which of the four stages is the most important?
2.	In general, how should such decisions be made (in groups, alone, intuitively, analytically)? Where are my strengths and weaknesses? Where will I need help?
Other questions	
3.	Does this decision really need to be made? Does it need to be now? Does it need to be done by me? What parts can I delegate?
4.	How long did these decisions take in the past? How long should the decision take? When should it be taken? If the date limits are arbitrary, can I negotiate an extension?
5.	Can I proceed sequentially or is there a need to move forward and backward through the process?
6.	Where should effort be concentrated? How long do I expect to devote to each stage?
7.	Can I draw feedback from related decisions and experiences I have faced in the past to make this decision better?
8.	What are my skills, my biases and limitations? Is there a need to bring other viewpoints?
9.	How would a more skilful decision maker, which I admire, deal with this situation?
10.	If this decision will significantly affect other decisions, what are the cross impacts?
11.	If this is a group decision, how should I use this group?
12	If this is a group decision, in which stage should the group participate in and what should be the group role in each of these stages?

Source: adapted from Russo & Schoemaker, 2002, p. 12.

These orientated questions aim, in general, to cause reflections on the decision maker about the problem calling for some solution, about the strengths and weaknesses of it, about who should be involved, on whether to adopt a more analytical or intuitive approach to reach the decision (Russo & Schoemaker, 2002).

In 2007, the meta-decision theme was the subject of a research carried out in the form of a case study. Two separate cases of research and development of products for nuclear medicine were analyzed in the form of five and two interconnected decisions. These decisions were investigated in order to understand how main decision makers acted throughout the decision-making process about decisions on who to involve, what to do and when, from the time a problem is recognized to the final decision. The development of this research was of particular importance to the authors of this essay in that it was possible to notice that the experienced key decision-makers may develop some decision rules associated to the decision-making situation and therefore plan their actions in relation to decision process (Sousa & Yu, 2008, p. 12). Some of these rules, and the extant literature reviewed above, helped us to propose what we are calling as "outlined strategies" presented later on in this paper.

Once contextualized, the knowledge about the subject of our interest, in the next section, we begin the development of our proposals about how a decision maker or group decision maker can handle group decision making in their organizations from the approach of meta-decision.

4. The Activities of the Meta-decision

The starting point that we propose for our meta-decision problem, involves questions of practical order: the activities of a key decision maker in a decision process.

The decisions about the decision process itself comprise the planning and the control of the implementation of the decision process (Mintzberg et al., 1976). To facilitate understanding and exposure, we propose that underlying the meta-decisions there are key activities that can be divided into three main classes: (1) diagnosis of the context of the decision and evaluating the meta-decision problem (e.g., assessment of knowledge available to decide), (2) selection / planning strategy for deciding and (3) implementing the chosen strategy to make the decision.

In situations of crisis or urgency, the GD can intuitively perform all these activities in a few seconds to decide what to do with a decision, in other situations, these activities can be repeated periodically over several months of the decision process duration, that is, the time spent and the sequence of these depend on the specific problem

4.1 Diagnostic of the Meta-decision Context and Evaluation of the Meta-decision Problem

This is usually one of the first activities of the GD after recognizing the need to consider a decision making situation: to understand (or feel) the context within which lies the decision problem (or opportunity), evaluate the

level of knowledge about the meta-decision problem, and resources of the organization available to address the meta-decision problem. Note the distinction between the decision problem of meta-decision problem, i.e., the first focuses on the problem (or opportunity) by demanding a decision, the second focuses on the problem on how to decide.

This activity of context diagnosis and the meta-decision problem evaluation is often repeated when the context changes or the nature of the problem to be solved undergoes changes, but it is particularly important at the beginning of the decision process, since the definition of the problem to be solved and the evaluation of decision makers who already know about the decision to be made, provide valuable insights for the GD to establish a meta-strategy decision and allow prioritization of activities.

4.1.1 The Diagnosis of the Meta-decision Context

The diagnosis of the meta-decision context involves primarily two perspectives: 1) the time available to make the decision, and 2) the constraints established by the organizational environment within which decision making occurs.

The first perspective, the time available, can be determined by circumstances outside the organization, for example, the company obtained information that a competitor is developing a new generation of products and plans to launch it within a year and a half. In this case, a deadline for decision making can be conditioned by the time needed by the company to develop the product. On the other hand, it is possible that the dynamic of the external circumstances require quick decision makings as in situations of disaster whether natural or human.

Circumstances internal to the organization can also affect the time available to solve a decision problem. The agenda of executives involves the simultaneous resolution of many problems, which can mean limited time for each problem. In other words, if a GD's agenda is congested with more decision problems, each problem will receive, on average, less attention from GD. For example: a GD needs to make a decision in six months, however, the company is in the midst of restructuring, which will last at least twelve months - thus, it is likely that the GD disposes little time to discuss the decision in question. This, despite the deadline is quite far away, certainly is not comfortable for the GD. In other words, the period may be long, but other obligations may occupy executives' attention and therefore the actual time available may be much shorter.

In a qualitative and simplified form, the possible combinations of deadline and level of congestion in GD's agenda for decision making can be represented in the matrix of Table 02. The best situation for the GD is in quadrant I: deadline is far away and the agenda is empty, therefore there is ample time available. The worst situation is in quadrant IV: deadline is very close and the agenda is clogged with problems, therefore there is very little time available for the specific decision Situations II and III are other combinations. The most appropriate strategies for dealing with each of these different situations of time availability will be discussed bellow.

Table 2. Situations of available time

		Deadline	
		Close	Far away
Decision agenda	Empty	II	I
	Clogged	IV	III

The second perspective, the constraints of the organizational environment, involves several aspects that are independent of the decision problem in question. Examples: the culture, the power distribution, the perception of threat to decision makers and the existing relationships between people within the company. These aspects are functions of the history of the organization, but they condition the decision-making processes.

The culture of the organization, the distribution of power and the perception of threat to control and values of the decision-makers can influence the adoption of innovations (See & Clemen, 2005). For example, companies that for many years kept the decision-making process centralized, when they detect the need to have more agile decision-making process, can encounter difficulties to delegate decisions to middle level managements.

The stability of the relationships can also affect how the decision process will be conducted (Eisenhardt & Bourgeois, 1988). For example, stakeholders and / or the organizations involved may be "old friends" of the GD and GD already has experience in how to relate to them. On these occasions, the diagnosis is usually made

intuitively by the GD. But when the GD has less or even none experience in dealing with stakeholders relevant for a specific decision, the GD must consciously develop actions to understand these actors.

In the next section, situations and examples will be presented as how the characteristics of the organizational environment can influence the decision-making.

4.1.2 The Evaluation of the Meta-decision Problem

The evaluation of the meta-decision problem mainly refers to the level of knowledge available to make the decision, including difficulty in obtaining the necessary information, which in turn depends on the organizational environment discussed above. For example, the organization may have the available knowledge, but because of a power struggle, the GD reckons that there will be great difficulty in getting contributions from all sectors of the organization**.** The assessment of the level of available knowledge assumes that the GD knows how to recognize what types of knowledge will be required to solve the decision problem in question. A GD who does not recognize its own limitations of knowledge can lead to biased decision making and negatively affect the quality of the decision. For example, an important aspect in assessing the level of knowledge is for the GD to be aware of the possible group cognitive biases such as overconfident executives and anchoring (Bazerman, 1994). These biases can distort the results of the meta-decision problem.

In assessing the level of knowledge about the meta-decision problem, it is important to distinguish the knowledge available within and outside the organization, because usually, but not always, access to internal knowledge is easier and faster. A phone call to a company specialist or the recovery of a relevant report can be accomplished without many barriers if the organization is not bureaucratic or not engaged in a power struggle. Access to knowledge outside the organization may happen faster if there are people in the organization with good informal contacts, or, may depend, for example, from a prior negotiation of agreement for transfer of knowledge. An organization can avoid these barriers by establishing contracts or umbrella agreements with potential sources of knowledge for strategic decisions. To this end, the organization must have a prospective view of knowledge that will be required in the future. In more technical terms, the concept of real options is also applicable in the context of meta-decisions.

For the task of assessing the level of knowledge available and the difficulty of obtaining it, the GD must consider at the same time, the level of knowledge required and accessibility to it, for the decision making. If the problem is recurring for the organization, this assessment is almost instantaneous: the GD knows who and how to mobilize people for decision making. In the case of a new problem for the company, the GD must formally dedicate resources to this assessment.

In most problems, however, there is a mix of new features and issues known by the organization. This means that the GD should undertake a more careful analysis of what is or is not known. One way to do this analysis is to perform a more detailed assessment of knowledge required for each of the elements of the decision problem. That is, the GD can evaluate the competence of the organization on defining the decision problem, on identifying alternatives, on seeking information, etc. for the decision in question, and subsequently discuss the difficulties on accessing this knowledge. The expected result of this analysis is the identification of the elements of a decision more critical in terms of knowledge level and the possible difficulties of reducing these gaps. For example, is the problem (or opportunity) clear to all the GD? Or, are the goals set? Are all known alternatives able to meet the goals established or are there a need to seek new alternatives? The results of the knowledge evaluation should include a list of the people possessing these skills and likely to be called to participate in the decision-making process.

The distribution of power, culture and political practice of the organization can facilitate or difficult the mobilization of knowledge for decision making by the GD. A decision problem can cause a conflict of interest between stakeholders if the consequences benefit some more than others. In these situations, political tactics may be employed by stakeholders, for example, to press for the right choice for certain alternative solutions, or, otherwise, to delay the process of decision making if the alternatives under discussion are not of their interest. Political tactics can either facilitate or hinder the work of the GD. The GD must assess the degree of resistance or collaboration of the different areas inside and outside of the organization from their knowledge of the relevant actors and their relationships in the past.

Finally, the stability of the context and / or the decision problem should be assessed by the GD. The GD does not control the context changes, but an alteration of it may aggravate or alleviate the problem decision. When the dynamics of change is high, the biggest challenge for a GD is to recognize the root causes of the problem so that they are not fooled by the appearance alterations. Organizations operating in sectors such as information technology where the dynamics of technology is high or as a pharmaceutical, where barriers can be erected by

patents, are subject to constant changes in competitive conditions. In these situations, the competency framework in the decision problem (framing) or, in essence, in the definition of "what can be done", "what do you know" and "what do you want" (Eagan et al., 2002) is crucial for successful decision making. For example, in high-tech industries, knowledge of theories or innovation models (Anderson & Tushmann, 1990) can help the decision-makers understand the drivers of innovation and identify the most likely technology trends and, in relation to the decision to be made, define the problem with a broader vision. This example highlights the importance of the GD to know what kinds of knowledge are required for the decision in question, i.e. the importance of meta-knowledge of the GD. It is not expected that a GD has a thorough knowledge of the whole process of meta-decision, but a characteristic crucial to the good performance of the GD is to recognize the limitations of their own knowledge. Knowing this limitation, the GD may call on experts for possible complementation.

4.2 Matching the Context Diagnosis with the Evaluation of the Meta-decision Problem

The efforts of the context diagnosis and the evaluation of the meta-decision problem can be summarized through a series of tables that represent the identified situations. These tables show the main dimensions of the evaluations discussed above: level of knowledge, time available, barriers / resistance mobilization of knowledge, and context dynamics / decision problem. However, as the combinations are many, only a sample of these will be presented.

To facilitate understanding, each table shows the possible situations combining only two dimensions. Each dimension will be represented by two scenarios for the convenience of the presentation and discussion, for example, the level of knowledge can be High or Low. In a real evaluation, different levels of knowledge (be it the elements of a decision, of the meta-decision problem or even the meta-knowledge) can be integrated since they are duly appropriate in the judgment of the GD. Through these tables it is intended to summarize the discussions of the context of diagnosis / decision problem and, at the same time, to prepare the analysis of the strategy of meta-decision, whose discussion is in the next section.

Table 03 shows the possible combinations between the dimension Knowledge Level and the dimension Time available. The best situation would be in Quadrant I: high level of meta-knowledge with large time available. In this situation the GD could probably proceed with tranquility the decision making process.

Table 04 combines the dimension Knowledge Level and the dimension Organizational Resistance to cooperate in the decision making process. The worst situation for a GD would be the Quadrant IV: the organizational resistance is high and the level of knowledge, according to the GD itself is low.

The last situation to be discussed is shown in Table 05, involving combinations between the Dynamic of the Context / Decision making Problem and Organizational Resistance. The situation in Quadrant III probably involves more risk than the Quadrant I, as a context of rapid change, the decision making problem can worsen over time or disappear entirely.

Naturally other combinations between two dimensions are possible. However, in a real diagnosis, the GD will get a combination of all four dimensions; for example, the situation faced by the GD can be characterized by little time available, high level of knowledge, high organizational resistance and low dynamism of context. However, as a graphical representation of four dimensions would be impossible, we resorted to two-dimensional representations.

Table 3. Level of knowledge and time available

		Time available	
		Large	Little
Level of Knowledge	High	I	II
	Low	III	IV

Table 4. Level of knowledge and resistance / barrier

		Resistance	
		Low	High
Level of Knowledge	High	I	II
	Low	III	IV

Table 5. Dynamic context / decision making problem and resistance / barrier

		Resistance	
		Low	High
Dynamic context / Decision making problem	Low	I	II
	High	III	IV

Occasionally not all possibilities of context analysis and the meta-decision problem must be enabled for the routing of the decision process; however, some of them are crucial in this routing.

This analysis should be the primary purpose of helping to prepare the GD to decide which strategy to adopt to decide. How then should a GD proceed to decide, i.e., that is, how should the GD plan the decision making process according to the results of the analysis of the context and meta-decision problem? The item 3.2 of this essay will deal with this matter.

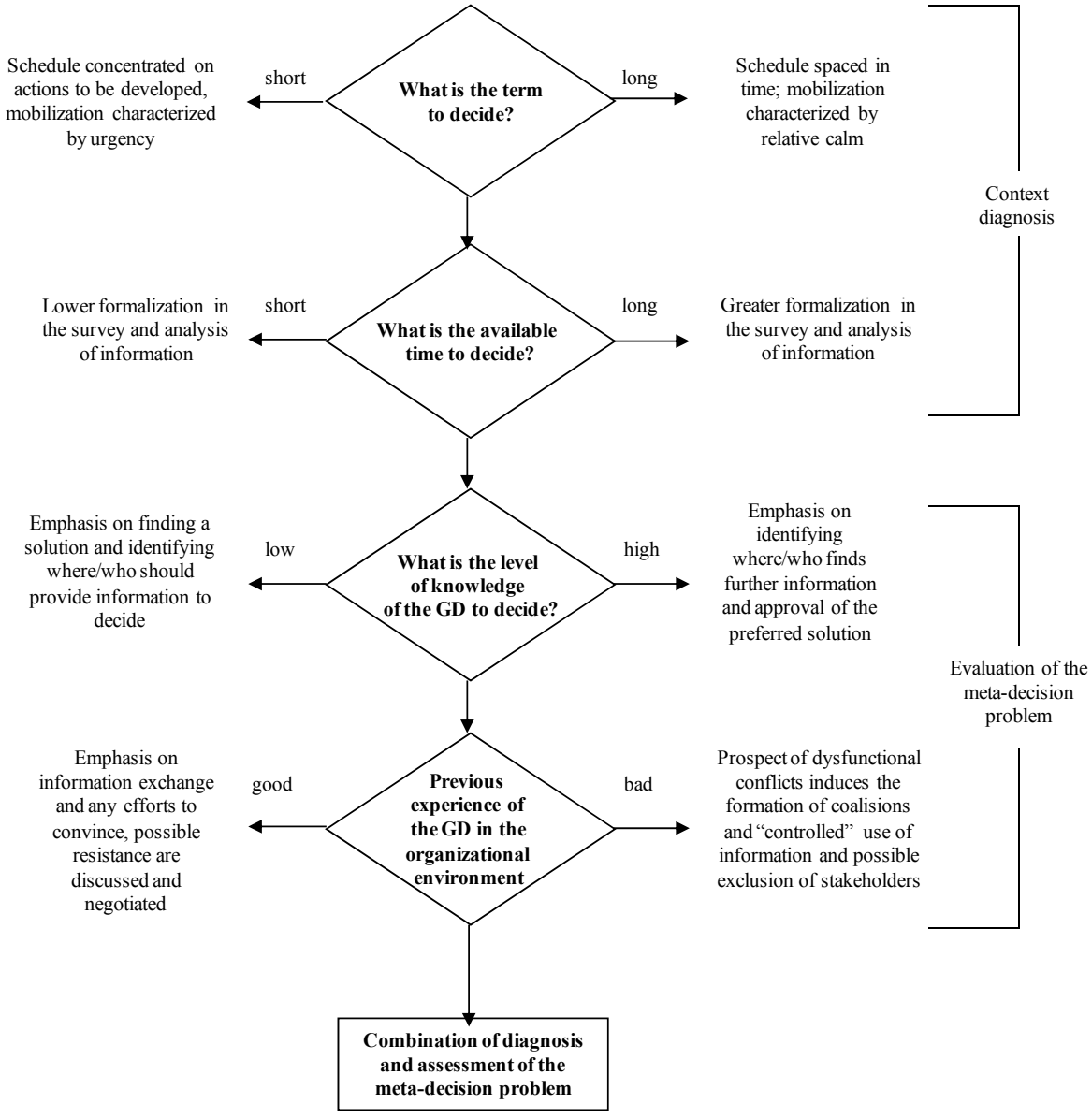

Figure 1. Evaluation process of the context and meta-decision problem

Figure 1 illustrates this sequence of evaluations with suggestions of some meta-decisions that can be taken on the basis of these assessments. When completed, the GD will have as a result, the combination of the diagnosis of context with the evaluation of the meta-decision problem.

Selection / planning the meta-decision strategies

The activities of selection / planning establishes guidelines for the meta-decision (or a set of meta-decisions) of a decision problem. In possession of the diagnosis of context and assessment of the meta-problem, the next step involves defining what strategies to adopt to make the decision. This step involves the following meta-decisions: (1) the choice of options for decision making forwarding (2) the choice of outlined strategies, (3) the definition of the goals of meta-decision, (4) participatory strategies, (5) formalizing process, (6) combination of meta-decisions and (7) resource allocation plan, communication and work.

4.2.1 Options for Decision Making Forwarding

With the diagnosis of the context and of the meta-decision problem made, the GD already knows what are the dimensions that were assessed as being most critical for conveying the decision problem.

It is then up to the GD the following reflection: is this a decision that should be made or should the decision be forwarded to another GD? The options of forwarding to another GD are: to delegate the meta-decision to subordinates; to "promote" the decision to a higher hierarchical level (i.e., the decision is not within the scope of the GD in question), or pass the decision to a GD of the same hierarchical level.

In the case that the GD concludes that the decision should be forwarded to another GD, the decision problem disappears and the meta-decision problem is solved (for the first GD – at least momentarily).

4.2.2 The Choice of Outlined Strategies

If the GD has assumed the responsibility for the decision, the GD must then decide how to forward the resolution of the decision problem.

Outlined strategies, as the name itself suggests, are intended to outline the basic sequence and the emphasis of the decision-making process. In Table 06, four examples of these outlined strategies are suggested in terms of the dimensions of Time available and Knowledge Level. If the assessment of the context and of the meta-decision problem have identified that the time available is very little and the level of knowledge is low, the meta-alternative to be selected is the outlined strategy “two steps” if the level of knowledge is high, then it is feasible to adopt the outlined strategy “Fast action” and so on.

Table 6. Examples of outlined strategies

		Level of knowledge	
		Low	High
Time available	Little	“**Two steps**”: in the first step the search is for a simpler and immediate solution or one tries to negotiate longer time to solve a problem; in the second a permanent solution is developed.	“**Fast action**”: the GD decides quickly from their knowledge
	Large	“**Learning**”: how to develop knowledge optimally?	“**Distributed action**”: one can have greater participation and avoid simultaneous tasks; or else, think about the best moment to decide.

The strategies presented are merely illustrative. Other variants, depending on the situation and the problem could be considered as well as other outlined strategies may be developed.

4.2.3 Defining the Goals of Meta-decision

The goals of the meta-decision differ from the goals of the decision: while the goals of the decision relate to the content of the decision to be made, the objectives of the meta-decision refer to the objectives that the GD wants primarily meet and define how the decision process is: for example, the goal is to "promote the interests of the GD" and "align with the mission of the organization." It is a question of ethics. Naturally, if the members of the

GD are owners, it is expected that the interests of the GD be coincident with those of the organization, although individually, there may be conflicting objectives.

For example, if we consider the combined form, some of the situations presented in Tables 1 to 4, we may find the following situations: if the situation is of little knowledge and time is short, the immediate goal of the GD would be to negotiate more time and / or seek a temporary solution with the “superior GD", whereas if the situation is characterized by a high internal resistance, the immediate goal of the GD would be to reduce this resistance.

There are also other political strategies that can be developed and therefore need to be decided by the GD: 1. Conduct the process in a centralized way to create an accomplished fact? Declare vague goals for increased membership? Develop a process apparently democratic, but in reality the GD already have their preferred option (called "false democracy")? Search the satisfaction of the more powerful participants? To what extent sacrifice the choice, accelerate or slow down the decision-making process on behalf of the final consensus?

4.2.4 Participatory Strategies

Depending on the outlined strategy adopted, it may be necessary to involve other participants in the decision process besides the GD themselves. These participants can be divided into parties (stakeholders) and specialists (experts). Stakeholders are people who may be affected by the decision in question. Experts are people who can provide information or methods for the process.’

Thus, different participatory strategies can be developed throughout the decision-making process. Three basic strategies can be considered: Null participation, Limited participation and Full participation.

In the null participation, the decision process is restricted to the GD. In the limited participation, two variants can be considered:

- Filtered participation: we have full participation of all relevant actors (stakeholders and experts), but the information is not fully shared (multiple stakeholders may retain some information: the GD, some stakeholders or some experts)
- Addressed participation: the degree of participation can be different for each decision element. For example, participation may be full in generating alternative solutions, but in the evaluation of alternatives the participation is limited to the financial analysts of the organization.

And lastly, we have the Full participation with the involvement of all stakeholders interested in the decision without restrictions or partial access to information.

Given these possibilities, how to decide the participation strategy? In general it is expected that this decision is consistent with the outlined strategy. For example, the outlined strategy learning will have little effect if the participation strategy chosen is the null participation. A more specific aspect that may influence the choice of the participation strategy involves considerations about conflict. When the GD faces stakeholders with conflicting interests it is possible to try to promote greater participation, however, when these conflicts become "political wars" the GD can opt for lower participation to prevent wear and to create accomplished facts.

4.2.5 Formalizing the Process

Decision processes may be conducted so as to be more or less formal. More formal processes involve greater control and therefore use of documents (i.e., research and analysis) and records (e.g., meeting minutes) that show how the decision was made. For example, usually, the higher requirement for the provision of the account or transparency of the decisions, greater is the degree of formalization. Another factor is the time available, when the time available is more than sufficient, the GD may want a higher level of formalization. Yet, in situations where the organization has a high tacit knowledge, it may be more difficult and time consuming to formalize the decision making process.

4.2.6 Combining the Meta-decisions

Once the outlined strategy, the objectives of the meta-decision and the option of forwarding are defined, the GD needs to establish how the decision making will be operationalized, that is, as the strategies of decision making are combined with each other, considering the degree of the process formalization and the degree of participation.

Examples of combination of the different meta-decisions for different levels of formalization and participation are represented in Table 7.

Table 7. Example of the combination of meta-decisions

		Formalization degree		
		Null (totally intuitive)	Mix	Full (quantitative approach)
Degree of participation	Null (GD's decision)	Fast action Two steps	Fast action Learning	Learning
	Limited	Fast action Two steps Filtered or directed participation	Learning Filtered or directed participation	Fast action Filtered or directed participation
	Full	Distributed action	Learning Two steps: First intuitive and second learning	Two steps Distributed action Learning

To illustrate the application of this table, let us consider two situations: (1) if the GD choose the degree of participation "Null" and also a formalization "Null" he can choose the strategy delineating "Quick Action" or "Two Steps", (2) if there is a necessity of the degree "Full" of participation and the degree "Full" of formalization, they can adopt one of three following strategies: "Two steps", "Action distributed" or "Learning", depending, for example, of the problem and the goals to be achieved.

4.2.7 Resource Allocation, Communication and Work Plan

The process of meta-decision also involves the resource allocation. These resource allocation decisions may be informal, for example, when the GD opts for a "fast action", or formal, when there is available time and when the effort is justified.

A diagram can be developed to assist in resource allocation. The GD can evaluate each element of the decision in question in accordance with the level of knowledge of the decision elements and the ease for obtaining knowledge by the organization. In general, the GD may have to allocate more resources (and time) to an element with a lower level of knowledge and lower facility for obtaining knowledge.

A hypothetical example for a situation involving development of a product and its production process is presented in Table 8. In this example it is assessed that there is difficulty in obtaining knowledge for defining the specification of a product (attributes / objectives to be achieved by the product) and also a low level of knowledge about it, a situation that requires a research effort; yet the facility to gain knowledge is evaluated as average, as well as the existing knowledge is also average for the product development (alternative to be productive) and high for its production (knowledge of the solution to be adopted as for the product to be produced). And lastly, it is understood that the knowledge is easily accessible with regard to market development / key customers and logistics, although in terms of market this knowledge is less than in terms of logistics.

Table 8. Diagram of planning the resource allocation

		Knowledge level		
		Low	Average	High
Facility to to obtain knowledge	Low	Definition of the specification of the product: research leader ($) (6 months)		
	Average		Product development: team A of P&D ($$) (1 year)	Development of the cells producing: team B of P&D ($$$) (1 year)
	High		Market development /key-clients: board of directors (no charges) (3 weeks)	Development of logistics: current supplier (no charges) (1 week)

To complete the planning activities of decision making, two concerns need to be equated:

How to communicate the decision problem for the participants and the organization as a whole: a crisis or an opportunity? The answer to this question is subjective and depends much on the situation and the characteristics and personal abilities of the GD.

Who will do what, when and how? This may be done through a working plan in which the tasks of the decision process are scheduled over time (a macro Gantt chart). The tasks may be scheduled sequentially or some may be scheduled simultaneously (to speed the decision process).

Generally, the selection/planning process for the meta-decision strategies can be synthesized through a sequence of decisions for each one of the topics previously presented.

Figure 2 illustrates the selection decisions and the planning of the meta-decision-making and subsequent planning of resource allocation, communication and work and it highlights the possible alternatives available to the GD.

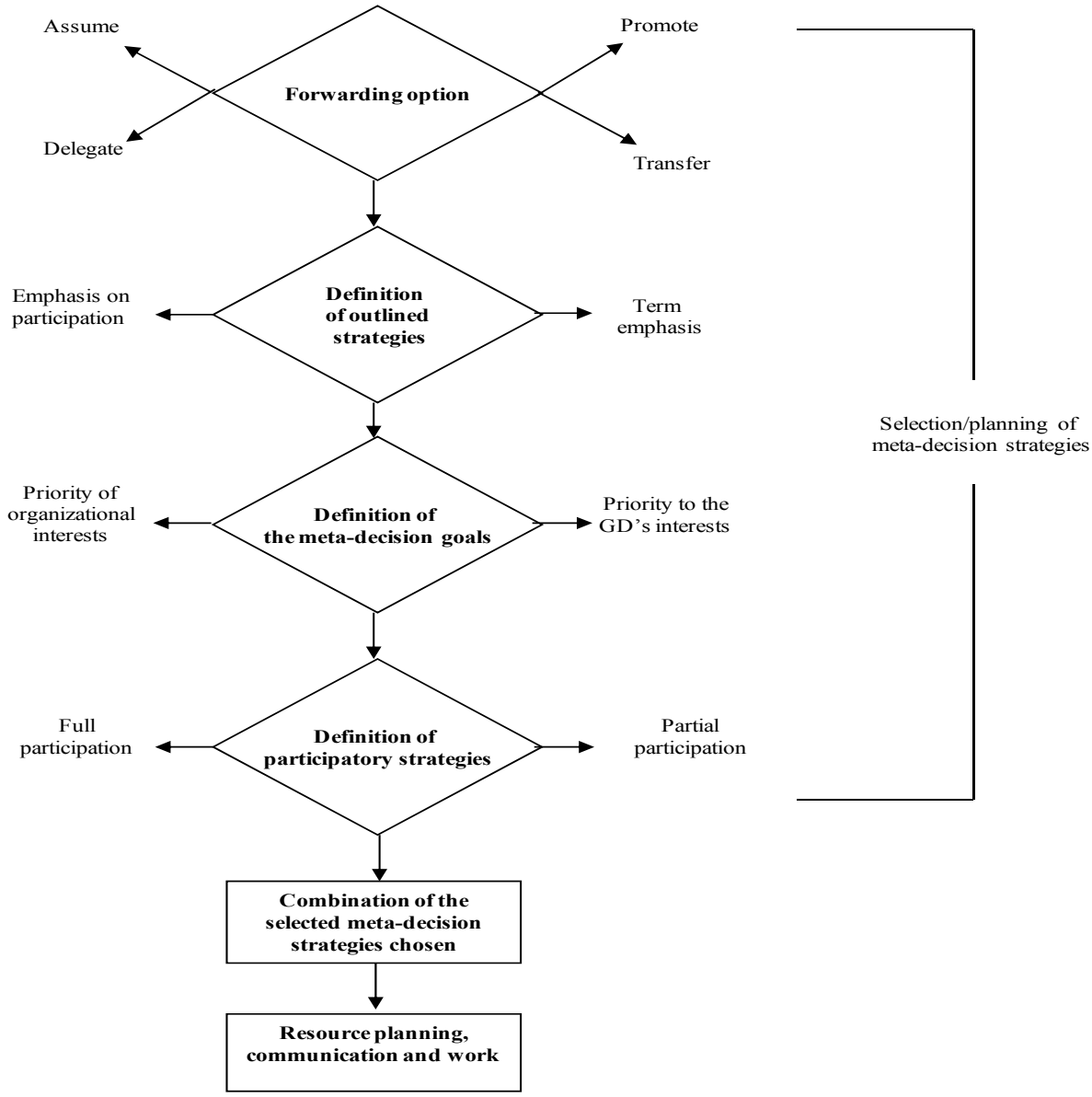

Figure 2. Selection process/planning strategies for meta-decisions and of resources, communication and work

4.3 Implementation of Strategies for Meta-decisions

The implementation of strategies for meta-decisions represents to put into action the strategies previously planned. It involves the selection and the tactic execution (concepts and tools) by the participants how it was decided by the GD. It is beyond the scope of this essay, further discussion of this stage of the decision making process; however, it is worth observe, that during the implementation phase of the meta-decision strategies, the GD needs to follow the evolution of the events so that unexpected events, such as resistances and new developments outside the organization, may be assessed and measures taken "in real time" to adjust the decision making process. These cycles or recycles are usually inevitable in a major decision.

5. Synthesis and Final Remarks

The literature on decision making is vast but fragmented and limited regarding the meta-decision-making process: how to choose what to do, with whom and when.

In this essay we seek to gather, organize and integrate in the form of key activities of meta-decision, three major groups of effort that a decision maker or a group of decision makers need to develop and to decide – diagnostic of the meta-decision making context and evaluation of the meta-decision problem, selection / planning strategies for meta-decision-making and implementation of meta-decision strategies - in a prescriptive format derived from

descriptive research so that the GD has greater understanding and control over the decision-making process itself, and thus improve their ability to make quality decisions.

The ideas here presented, can be a good opportunity to improve the understanding of how experienced decision makers develop their decision-making processes, often intuitively, and for the scholars to investigate and identify patterns in process that apparently does not have any logic.

It is hoped that this work may have thrown a spotlight on a part of the decision-making process very little explored in the literature, and provide guidelines to decision makers to have a better control over decision-making processes that would justify such an effort. Future researches will need to be developed in order to empirically analyze the meta-decisions with greater depth in order to improve the theoretical framework developed in this essay.

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