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# Dealing with legitimacy: A key challenge for Project Portfolio Management decision makers

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**Abstract**

Previous research has considered combining different decision-making approaches to be critical to achieve flexibility in Project Portfolio Management (PPM). Lacking flexibility, i.e., making decisions only by rational and formal approaches, might lead to a deficient balance between different types of ideas and projects, and this may lead to innovation opportunities being missed. However, the challenges that decision makers might face in achieving that flexibility have not been investigated thoroughly. In an interview study of three industrial companies, we explored how different decision-making approaches are combined in PPM. We found that rational and formal decision-making processes are experienced as more legitimate than informal and non-rational ones. Decision makers deal with legitimacy by certain mechanisms that allow them to bypass high accepted approaches and legitimizing decisions made by low accepted ones. We discuss how these mechanisms, while contributing to achieving flexibility, might also cause a bias in decisions and destabilization in resource allocation.


*Keywords:* Project Portfolio Management; Legitimacy; Flexibility; Decision making

## 1. Introduction

Project Portfolio Management (PPM) aims to provide a coherent basis on which to judge the development projects that should be undertaken by an organisation (Jonas, 2010; Killen and Hunt, 2010; Tidd and Bessant, 2009). PPM can be seen as a decision-making process in which ideas for new products are evaluated and selected, development projects prioritised and resources allocated between development activities (Cooper et al., 1998). Since development projects that are run today are the products of tomorrow, PPM is considered to be central to implementing the business strategy (Meskendahl, 2010) and strongly influencing the future competitive position of companies (Cooper et al., 1998; Dawidson, 2006).

In their influential works, Cooper et al. (1998) and Wheelwright and Clark (1992,1999) stated that to implement a business strategy companies needed to evaluate, select and commit resources to different types of development projects. This is because each type of project has a different role and provides a different competitive contribution. However, they also stated that different types of projects imply different challenges for decision making. For example, evaluating and selecting projects that aim to develop products based on new technological platforms or focusing on new markets is much more comprehensive, ambiguous and uncertain than projects that focus on improving existing products for existing markets (Wheelwright and Clark, 1992).

Accordingly, since Simon's classical contribution of "bounded rationality" (Simon, 1979), it has been widely accepted in decision-making theory that, because of cognitive limitations and the nature of the decision situations, it is not always possible for people to make decisions in a pure rational way (March, 1978; Sadler-Smith and Sparrow, 2008). It implies that, in some situations, alternative decision-making approaches that are non-rational could be considered to be appropriate (March, 1978). Thus, both studies of PPM practice and decision-making theory support the fact that, since different types of ideas and

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projects imply different challenges for decision making, PPM decision makers would benefit from combining formal and rational behaviour with other decision-making approaches in order to be able to cope with various decision situations.

However, while it has been generally accepted in PPM research that different decision situations require different decision making approaches it has not been thoroughly investigated how people in companies deal with managing simultaneously different decision-making approaches. Some authors have asserted that combining decision-making approaches that based on different logics might be difficult (Floricel and Ibanescu, 2008) and it might lead to conflicts within the organisation (Bessant et al., 2011). Furthermore, it has been pointed out that more research is needed to fully understood the challenges of combining different approaches when evaluating and selecting ideas and projects (Aubry et al., 2007; Bessant et al., 2011; Floricel and Ibanescu, 2008; Geraldi, 2008).

Therefore, the purpose of this paper is to explore how decision makers combine different decision-making approaches when facing different decision situations in PPM. It is aimed to investigate the process of evaluation and selection of ideas and projects from the perspective of the decision makers, focusing on how they combine formal and rational decision-making processes with alternative decision-making approaches.

This paper is based on an explorative study with interviews to people involved in the evaluation, selection and prioritization of ideas and projects. It focuses on the development of complex technological products, i.e. products that require qualified personnel in several technological areas, e.g. due to the integration of mechanical, electronic and software components. It implies that product development presents both technological and commercial challenges and requires the participation of several organisational functions such as engineering, financing, manufacturing, and marketing.

The results indicated that a crucial aspect for understanding PPM is the legitimacy of decision-making approaches, that is, the fact that different decision-making approaches encounter different levels of acceptance within an organisation. Therefore, the dynamics by which an idea or project evolves is affected by the way in which decision makers deal with the legitimacy of the decision-making approaches that they plan to put into practice. Furthermore, it is discussed how legitimacy and the way decision makers deal with it, can be seen as a key challenge for decision makers, influencing which ideas and projects are, actually, selected and further developed in companies.

First, we present a theoretical exposition from which research questions are drawn. Then, we introduce the research methodology. Further, we present the results of the empirical study and the analysis that answers the research questions. Finally, we discuss the empirical analysis in relation to previous studies, and implications for the practice of PPM are considered.

## 2. Theoretical framework and research questions

We first present a brief description of how decision making processes have been considered in PPM literature. Then we present some studies that discuss the need for flexibility in PPM decision making. Next, the concept of legitimacy is exposed based on insights from decision theory, and institutional theory. Finally, we take our research questions from a synthesis of the theoretical exposition.

### 2.1. PPM in theory

It is generally accepted in PPM literature that it can be viewed as a dynamic decision-making process in which the list of active projects is constantly updated and revised (Martinsuo and Lehtonen, 2006). However, it is necessary to point out that different authors give different meanings to the concept of PPM, especially when it is related to the scope of processes that are supposed to be encompassed in it. In the present paper, is going to be addressed the definition of PPM suggested by Cooper et al. (1998), because it is considered to be commonly used by many authors contributing to the field (Dawidson, 2006). PPM is defined as follows: "*Project Portfolio Management is a dynamic decision process wherein a list of active development projects is constantly revised. In this process, new projects are evaluated, selected and prioritised; existing projects may be accelerated, killed or reprioritised, and resources are allocated and reallocated among the projects in the portfolio*" (Cooper et al., 1998; Dawidson, 2006).

PPM is considered to be a decision-making process with three main objectives: maximising the return on the investment made in product development, managing risk by diversifying the types of projects in the portfolio (along certain dimensions, such as probability of success, types of technology, amount of investment etc.) and assuring that the selected group of projects contributes to realizing the firm's business strategy in terms of product lines, markets, technological platforms etc. (Archer and Ghasemzadeh, 1999; Cooper et al., 1998; Jonas, 2010; Reyck et al., 2005).

In the largely prescriptive literature of PPM, the processes, methods and tools that are suggested, are mainly based on rational decision making. (Brun et al., 2009; Christiansen and Varnes, 2008; Engwall and Jerbrant, 2003; Kester et al., 2011; Stilling Blichfeldt and Eskerod, 2008). That is, formal and hierarchical decision-making processes in which decision makers are assumed to make consistent choices that maximise the value of the firm, through systematic assessments of alternatives in comparison to predetermined criteria. Strategies are considered to be a given input of the decision-making process and resources are managed with a planning and scheduling logic. As a result, decisions are made regarding which project proposals are approved, which running processes are cancelled and which projects are prioritised. These decisions are consistently realized in a resource allocation process, in which people and other resources are distributed between projects.

### 2.2. PPM in practice

Although the rational approach is widely applied by companies that actively work with PPM (Christiansen and Varnes, 2008), empirical studies of PPM practice have reported patterns of decision making which are different from those prescribed in PPM theory. Steffens et al. (2007) found that

strategic or high-impact decisions were approached in a relatively more informal way than operative or low-impact decisions that were made by more formal and systematic ways. They argue that informal decisions in complex product development are related to the management of uncertainty and the dynamic of the business environment. According to Olausson and Berggren (2010), when managing uncertain and complex development projects, both formal and informal approaches are required. Formal processes ensure that decisions are made consistent with overall goals and provide documentation that allows past decisions to be analysed. At the same time, informal approaches, based on interaction and learning, are necessary in the presence of uncertainty and novelty. Moreover, Stilling Blichfeldt and Eskerod (2008) found that not all projects are selected and get resources as a result of formal and rational decision-making processes. Companies often have some minor projects that have not undergone the formal PPM process and are not considered by portfolio managers. Those informal driven projects are considered to be important for creativity. Christiansen and Varnes (2008) studied PPM decision meetings and found that only some projects are considered at meetings and few decisions are actually made. Instead, decision meetings work as a forum for discussing the meaning and appropriateness of different decision criteria. In addition, Engwall and Jerbrant (2003) explored resource allocation in PPM and revealed that sometimes project leaders defend their resources against common corporative goals. They suggest that it might be a consequence of how people interpret rewarding rules and directives from top management. Brun et al. (2009, 2008) state that ideas affected by ambiguity cannot be managed by formal and sequential models that emphasize the requirement of accurate information. They state that those models should be considered to be less suitable for managing radical innovation processes and innovation in dynamic environments.

### 2.3. The limitations of rational decision making

Empirical studies of PPM practice presented before indicate that managing various types of ideas and projects may require a flexible decision-making process in which different approaches are allowed to be used. Because the assumptions and guidelines stated in the main body of PPM literature are based on the logic of consequences and rational decision making, it is necessary to state what the limitations of this approach could be.

In general, decision-making theory supports the assertion that decision models based on rational theories are not suitable in every decision situation, and that different decision-making approaches should be combined in order to be able to cope with various situations. Rational decision models assume a sequential process of gathering information, developing alternatives and then selecting the optimal one; and decision makers with known objectives that determine their preferences (Eisenhardt and Zbaracki, 1992). However, according to March (1994), this model is difficult to apply in certain situations.

One explanation is that human beings have cognitive limitations when analysing and interpreting information, and that, in practice, they operate under the absence of complete information. Thus, people develop heuristics for acting under uncertainty, and instead of maximising (choosing the best alternative), they use a logic of satisfying (choosing the alternative that exceeds some criterion) (Simon, 1979). For example, Eisenhardt and Zbaracki (1992) state that strategic decision makers display a behaviour that is simultaneously rational and intuitive. They make plans and strategies, but they also act quickly on incomplete information; they develop many alternatives, but they do not analyse them thoroughly or just focus on a few. Furthermore, it is believed that the heuristics and inductive logics that decision makers use often lead to effective decisions (Sarasvathy, 2001).

Another factor that explains limitations in rational behaviour is that rational theories of choice do not thoroughly consider ambiguous situations. Weick (1995) defines ambiguity as a state of confusion that is not necessarily related to the amount or quality of the information, but rather to the way in which the information is interpreted. According to March (1994), rational theories of choice assume an objective reality, in which contradictions, inconsistencies and fuzziness are ignored. However, when making decisions, preferences and goals might have multiple interpretations, change and be affected by choices. That is, decision makers might experience ambiguity, a lack of clarity in reality, causality or intentionality that makes them less confident that the limitations can be overcome by seeking more information.

Furthermore, rational decision models assume that decision makers have known and clear objectives that determine their preferences (Eisenhardt and Zbaracki, 1992). However, according to March (1978), sometimes behaviour is not considered to be intentional; instead, intentions are discovered to be an interpretation of action. For example, Sarasvathy (2001) states that when people create things that do not already exist, such as new technologies, markets and firms, the rational assumption of decision makers with prior goals is not fulfilled. Instead of choosing from a set of alternatives to achieve a given and clearly defined goal, people might use a different decision-making logic. They might start with given means and choose between possible effects that can be created with those means.

Thus, rational decision-making approaches might be considered to be appropriate in situations in which the quality of the information enables people to seek out alternatives, state clear criteria based on preferences and make an optimal choice. However, in decision situations affected by uncertainty, ambiguity and the absence of prior objectives, rational approaches might not be appropriate. Moreover, it is not just a matter of cognitive limitations or a lack of information. In fact, other patterns of decision making that do not display a rational logic might be considered, under certain conditions, to be “intelligent” (March, 1978).

### 2.4. Legitimacy of decision-making approaches

So far, the theoretical exposition indicates that both empirical studies in PPM and decision-making theory states that decision makers, in many cases, can benefit from combining formal and rational behaviour with other decision-making approaches, in order to be able to face various decision situations, and achieve a

balance between different types of innovations. However, previous research have pointed out that not all decision-making approaches have the same legitimacy, that is, the extent that they are accepted within an organisation. Furthermore, that a particular decision becomes accepted is influenced by the legitimacy of the approach by which this decision was taken. March (1994) states that an appropriate, or legitimate, behaviour for making decisions tends to be socially constructed by interpretations of how other decision makers proceed. Practices and rules become more legitimate as more decision makers use them. Brunsson (2007) asserts that organisations need to gain legitimacy among external and internal stakeholders. For example, rational ways of thinking are regarded as proper practice partly because they are highly valued at a societal level. Legitimacy is also affected by internal power relations, in the sense that the ability to influence what is considered to be proper decision-making procedures and proper justifications for decisions is a fundamental source of power (March, 1994).

In the context of product development, Engwall et al. (2003) assert that sequential and formal models for managing projects are considered to be legitimate practices, despite not being suitable for managing all types of projects. Christiansen and Varnes (2005, 2008) observed that decision makers sometimes use formal decision points in order to display rational behaviour and to learn what are considered appropriate rules for making decisions. Furthermore, Sundgren and Styhre (2004) state that even though intuition is considered to be useful for making decisions without complete information, it is still controversial to use it as the basis for decision making. Thus, not every way of approaching decisions is expected to have the same legitimacy in organisations.

### 2.5. Research questions

A number of studies suggest that only rational and formal approaches would not be adequate in the presence of complexity, uncertainty, ambiguity and a dynamic environment. It might lead to a deficient balance between different types of ideas and projects (Brun et al., 2008; Geraldi, 2008; Sandström and Björk, 2010) and missed innovation opportunities (Engwall et al., 2003; Kester et al., 2009). Therefore, it is suggested that decision makers should put into practice patterns of decision making that combine approaches of a different nature and logic, such as formal and informal (Olausson and Berggren, 2010; Stilling Blichfeldt and Eskerod, 2008), rational and non-rational (Brun et al., 2008), logic of consequence and logic of appropriateness (Christiansen and Varnes, 2008) and highly structured and less structured (Steffens et al., 2007). In summary, both studies of PPM practice and decision-making theory support the fact that PPM decision makers would benefit from combining formal and rational behaviour with other decision-making approaches in order to be able to face various decision situations and to achieve a balance between different types of innovations.

However, PPM literature has not thoroughly discussed the challenges that decision makers could face when combining different decision-making approaches (Geraldi, 2008). Bessant et al. (2011) argue that it would be a challenge for organisations to put into practice different approaches to select different types of ideas and projects. Furthermore, Aubry et al. (2007) state that defining decision-making rules might raise tensions between PPM decision makers, functional units and project and programme managers. Thus the existence of different approaches may create tensions and conflicts across the organisation, and more research is needed to explore the nature of these tensions (Aubry et al., 2007; Bessant et al., 2011; Geraldi, 2008).

Thus, there is a need to investigate how decision makers put different decision-making approaches into practice when faced with different types of ideas or projects. In particular, one aspect that has been ignored is legitimacy, that is, the extent that a decision or decision-making approach is accepted within an organisation. In PPM literature, the different approaches seem to be considered to be neutral in relation to their organisational acceptance. Thus, there is a need to investigate to what extent legitimacy affects the way in which decision makers approach decisions, and how the way in which a decision is made influences its organisational acceptance. It leads to the following research questions:

- How do PPM decision makers experience the organisational legitimacy of different decision-making approaches?
- How do PPM decision makers manage legitimacy when trying to combine different decision-making approaches?

## 3. Research setting and methods used

In this study, we intend to focus on how decision makers experience organisational legitimacy and how legitimacy influences the way in which decisions are made. This is a subjective and social phenomenon in the context of PPM decision making. In addition, the field of PPM is considered to be relatively unexplored, both in its theoretical basis and empirical validations (Aubry et al., 2007; Engwall et al., 2003). Thus, the research approach chosen for this study is an exploratory and qualitative study with data collected via semi-structured interviews. It is appropriate for understanding organisational and social phenomena (Bryman, 2002; Gustavsson, 1998; Hartman, 2001) and, in particular, decision-making processes (Locke, 2001).

Four researchers participated in the interviews and the analysis of data. Following Kvale (1979) methodology, 30 interviews were conducted in three companies (10 interviews in each company), and two researchers were present at each interview. The first author was present at all of the interviews and carried out the major part of the analysis. Companies were chosen according to the following criteria: they had a business strategy with a clear emphasis on developing new products; they ran product development in a multi-project environment; and they tried to actively manage their processes for evaluating, selecting and prioritising ideas and projects. A general description of the companies is seen in Table 1, below.

Respondents were selected from those with an active role in PPM, either by being formal decision makers, influencing decisions (because of hierarchical position or technical competence), or being affected by the decisions made by others. Among them were: product development managers, business unit managers,

Table 1
General descriptions of the studied companies.

| | Company A | Company B | Company C |
|---|---|---|---|
| Business | High-tech machinery for the electronics industry. | Machinery for diverse industries, including aerospace and electronics. | Mechanical and electronic solutions for property security. |
| Size of the firm (number of employees) | Approximately 500 | Approximately 350 | Approximately 1000 |
| Development (number of employees) | More than 100 | More than 100 | More than 50 |
| Product complexity | High: products require highly qualified personnel in several disciplines and technical areas. | High to medium: products encompass mechanics, electronics and software. | Medium to low: from mechanical products to a combination of mechanical and electronic components. |
| PPM organisation | A board of directors approves the overall budget for development. A forum of senior managers divides the budget between two business units (BUs). Each BU has its own development department and selects and prioritises its own projects. | The development unit is divided into two sections. One section manages a single large project and the other one is responsible for the other projects. Development and product managers are involved in the definition of road maps and selection criteria. | Several BUs are served by a central development unit. A senior board decides the development budget for each BU. Each BU manages its own budget, selecting and prioritising its projects. |

product managers, general managers, experienced developers, sales managers, and project leaders. Interviews focused on what people did in several processes that are named in PPM literature as related to PPM: handling of ideas, evaluating and selecting ideas, starting and managing projects, prioritising and cancelling projects, allocating resources among projects and developing strategies for product development (Archer and Ghasemzadeh, 1999; Cooper et al., 1998; Reyck et al., 2005).

An open coding approach, following Hartman (2001) and Gustavsson (1998), was used in the analysis of the empirical data. Interviews were read, line by line, focusing on how different decision situations were approached and interpreting how the respondents experienced the decision situations. We chose codes for labelling the different statements. Research notes were taken all the time, developing interpretations about how the codes could be classified into different categories. The main categories and their relationships were further developed by relating them to research literature and discussing them within the research group. A validation of the findings was made by presenting them to the companies in meetings and discussion workshops.

The process of coding of the empirical material indicated, after some interviews, that there were a certain group of codes that appeared in all the interviews. They had in common that all of them referred to approaches for making decisions in PPM. The analysis continued focusing in those codes and trying to identify if different codes could be organised in one conceptual category. This analysis led to identifying four dimensions in which the coded approaches could be organised such as *formal–informal*, *rational–non-rational*, etc. As each dimension seemed to include approaches of opposite nature, the analysis continued focusing on how this duality was experienced and managed. This leads to the interpretation that some approaches were more accepted than others and that it was experienced as a challenge by decision makers. The analysis of interviews was combined with the investigation of research literature. The literature study was guided by the preliminary findings of the different levels of acceptance of decision approaches. This led to integrating to the analysis the concept of *legitimacy* as it is presented in decisions-making theory, and institutional theory. The analysis of the interviews continued and certain behaviour identified in the interviews was interpreted as a way to deal with the different levels of acceptance of the decision making approaches. This leads to the core category *dealing with legitimacy* which was built up from the analysis of the interviews and the theoretical study.

The limited empirical base of this study does not allow us to assert that the findings exposed here would be generally valid. However, the results have a theoretical distance from the empirical data (Alvesson and Sköldberg, 1994) in the form of conceptual categories and their relationships, further developed through a discussion with the theoretical framework. Consequently, the results of this paper should be considered to be conceptual categories in a research process of building a description and an explanation of the decision-making process within PPM. This implies that they can be used for guiding the study of the same phenomenon in other empirical settings, for example, by a selective coding of data.

## 4. Results and analysis

In this section we present the results and the analysis from the empirical investigation. We illustrate key observations with quotations, intending to give the reader a better opportunity to understand how we made the different categorizations and interpretations. First, in Section 4.1, we categorize the decision-making approaches that the respondents talked about. In Section 4.2, we describe how decision makers experience the organisational legitimacy of the different approaches. Finally, in Section 4.3, we describe how the respondents deal with legitimacy when making PPM decisions.

### 4.1. Different approaches to making PPM decisions

The preliminary reading of the interviews gave the impression that the respondents were actually giving contradictory descriptions of how they considered the decision-making process should work versus how it actually worked. For example, respondents talked about the importance of planning and forecasting, while at the same time expressing the impossibility

of predicting everything. They advocated the use of objective financial figures in evaluating ideas, then, some minutes later, they argued for the necessity of subjective judgement. One respondent stated that the existence of written routines was imperative, then immediately explained how ideas were developed informally in coffee breaks. While it was argued that people at high levels in the hierarchy should make the most important strategic decisions, others told of projects that started at low levels, without senior management permission.

We classified respondents' apparently contradictory statements about how to approach decision making along four dimensions. The first dimension is related to the paradigm through which product development is understood, the second one is related to the use of rational decision making, the third one is related to the existence of formal and informal decisions and the fourth one is related to the influence of power in decision making.

*4.1.1. Paradigms for understanding product development*

Respondents alternated between two alternatives to explain how product development occurs or should be managed. Sometimes they understood product development as something that was possible to forecast and plan: "*We make an assessment about what demand there might be for this type of product …. It is these types of analysis which are the basis of why you choose 'go' or 'no go' in such situations. Much is linked to the projections and volumes that are an input from the market*," (Product Manager I). Other times they talked about product development as an emergent and unpredictable process, in which changes were considered to be unavoidable: "*Whatever we choose will never be quite the right choice, because you live in a dynamic world that is not stable. What one had as an input when one decided something is not valid after a while. Then there have arisen other things that are more important or the thing that one has started needs to be changed*," (Development Manager I).

*4.1.2. Rationality in decision making*

Respondents described one alternative for making decisions as using rational and analytical procedures that aim to optimise decisions: "*It is not too bad actually having some kind of model … some sort of estimate on what works best and what is the most important thing to prioritize*," (Marketing and Sales Manager). At the same time, they were told about approaching decisions by non-rational means, such as intuition or "gut feeling", or when decision making was influenced by particular interests that prevailed over optimal decisions: "*It is difficult to evaluate a product that does not exist…. We look at market factors, but much is based on experience*," (Development Manager II).

*4.1.3. Degree of formalisation*

Respondents talked about decisions taken in formal processes with structured and documented procedures, as in stage-gate models. They also described informal processes as spontaneous meetings and discussions and decisions made without any written procedure: "*The formal decision is taken in one of the management meetings. But it is actually an informal decision between me, the business manager and the sales manager…. We often sit and talk. It can be over a cup of coffee or after a meeting*," (Product Manager II).

*4.1.4. Exercise of power*

Respondents referred to the organisational hierarchies that are part of the decision-making process and the extent to which they influenced it. They described the decision-making process as hierarchical when it was strongly influenced by higher levels of organisational hierarchies: "*It's not unusual that there is conflict between two projects on any given resource, it can be money or people, and then you have to decide what to do. In many cases it is he (the General Manager) who must judge if they cannot agree*," (Development Manager I). Simultaneously, non-hierarchical decisions where described as what happens when middle managers act without higher approval: "*It's not that we are waiting for their (higher managers) approval to start. We just start*," (Product Manager II).

*4.2. The challenge of legitimacy*

Respondents talked about some approaches as the right ways of working: "*It must be approved anyway. And perhaps it is something that I, as a product manager, do not like. But that's the way it is*," (Product Manager II). At the same time, respondents described situations in which these right ways of working were inappropriate. In these cases, they described other approaches as more appropriate, but these other approaches were never explicitly described as the right ways of working: "*It started with me and one person from the development department when we were together on a training course. We sat there and we thought about how … this (product) should work …. It was, so to speak, illegal work. And it is not the way it should work. It is the business unit that should evaluate if this product should be developed*," (Sales Manager). Moreover, respondents expressed frustration when the use of the approaches considered to be the right ones did not actually lead to success: "*The difficulty is that we live in a dynamic industry. It is the basic problem, but it's also an opportunity. That's the way it looks. It is not very much to worry about, but it makes it (prioritizing) difficult to handle*," (Product Manager II), or: "*So one starts projects from the bottom …. Then there are a number of toll gates, which I actually think is good. I do not question it. One should not start buying (material) and launch major projects before one knows if it works*," (Development Manager I).

Turning to the first research question – how do PPM decision makers experience the organisational legitimacy of different decision-making approaches? – the empirical observations clearly reveal that some decision-making approaches are experienced by decision makers as more accepted than others. Decision makers seemed to be aware that different approaches encounter different levels of acceptance, despite how appropriate they actually might be in a given situation. What can also be seen is that the planning paradigm, rational decision making, formal processes and hierarchical decision making all benefit from a higher level of organisational

Table 2
Organisational legitimacy of decision-making approaches and how decision makers deal with it.

| Dimension of decision-making approaches | Mechanisms of dealing with legitimacy |
|---|---|
| Product development paradigm | Switching paradigm: decision makers switch from one paradigm to another when the conditions for managing product development change. The planning paradigm is considered to be the right principle, but the emergent paradigm works as a way of handling frustration when plans cannot be fulfilled. |
| Rationality in decision making | Appearing rationality: decisions are sometimes based on intuition, or on particular interests that are different from corporate ones. However, decision makers tend to give the decision-making process an appearance of rationality by approving those decisions that have already been made, through a rational decision-making process. |
| Grade of formalisation | Later formalisation: actions and decisions made in informal ways are formalised afterwards in formal decision meetings. |
| Exertion of power | Hidden start: when an idea is considered to have potential, its development is started without higher approval. Then the idea is validated in an official decision, at a higher level of the hierarchy. |

acceptance than the emergent paradigm, non-rational decision making, informal processes and non-hierarchical decision making. We interpret that decision makers seemed to experience the presence of legitimacy in a conflictive way, in the sense that the less accepted approaches are used, but decision makers must also, in some way, deal with their more limited level of acceptance.

### 4.3. Dealing with legitimacy

Further analysis of the empirical data leads to the answer of the second research question—how do decision makers manage legitimacy when trying to combine different decision-making approaches? Decision makers put different mechanisms in practice that allow them to avoid drawing exclusively on the highly accepted approaches when they are not considered to be suitable, and giving legitimacy to the decisions that have been made by the lower accepted ones. Four different mechanisms for handling the issue of legitimacy in PPM decision making could be identified: switching paradigms, appearing rationality, late formalisation and hidden start. These mechanisms, and the indicators in the empirical data that led to these interpretations, are described as follows. Table 2 below summarizes these results.

#### 4.3.1. Switching paradigms

Respondents described product development as a context in which information about markets, ideas and projects is clear and certain. In this context, planning and controlling are presented as things that are possible to achieve. Forecasting and planning are described as ideal ways of working. Reprioritization and changing plans are presented as undesirable and experienced by respondents as a failure. However, they also stated that sometimes plans are not fulfilled and prioritizations must be carried out. Respondents use the emergent paradigm for giving reasons for not being able to foresee certain events and being forced to change course. They described the context as dynamic and they stated that people must prepare themselves for change and reprioritization. Although this is not described as an accepted view of product development, it seemed to serve to mitigate anxiety and frustration when plans cannot be fulfilled.

#### 4.3.2. Appearing rationality

The respondents advocated rational means as the right way to make decisions. They stated that rational means help decisions to become accepted internally, by showing that an optimal decision is made and by communicating the grounds on which it was made. However, respondents described how rational methods are not suitable for making decisions when the information is uncertain or ambiguous. They gave examples about early stages of an idea in which non-rational means, such as intuition, allow estimations and decisions to be made, based on the knowledge and experience of some people. Moreover, it is common practice that business units influence decision making to defend their particular interests, although this is never depicted in the empirical material as the right way of behaving. However, non-rational means are allowed to contribute, but are followed by the use of rational means. For example, some ideas are first evaluated by intuition and then developed further by avoiding formal decision points. Then, when the ideas reach a certain level of development, a formal decision is made via rational means.

#### 4.3.3. Late formalisation

Respondents referred to formal processes as the desirable way to manage decision making. They talked about how formal processes facilitate control and follow up decisions, processes and projects. They also stated that formal processes make it possible to ensure that crucial aspects are taken into account when making decisions and prevent strong personalities from forcing their opinions through. However, respondents also gave examples of situations when an informal approach is chosen. When formal procedures are not considered to be the most appropriate way to solve a problem, some phases are bypassed. For example, when information on new ideas is unclear, incomplete or uncertain, stage-gate models are often not used in practice. Furthermore, respondents described how most of the people that participated in a formal decision meeting were involved earlier on informal discussions. For example, they mentioned that discussions for gaining the support of key actors are often carried out in informal ways. As a consequence, many decisions have already been made, and some actions, that imply allocation of resources, have already been done before they are considered in formal meetings. Later, decisions made in informal ways are, at some point, forced to undergo formal

processes, for example, when a formal decision for starting a project is made.

#### 4.3.4. Hidden start

From the interviews, it is also apparent that it is accepted that higher levels of organisational hierarchies make strategically important decisions. Respondents stated that they apply a perspective that goes beyond particular interests and ensure that decisions are made according to overall organisational goals. One common example given by the three companies was that decisions made hierarchically could resolve the conflict arising when two business units are competing for the same resources. However, despite this acceptance, middle managers complain that they are not allowed to take responsibility for their own decisions. Furthermore, examples were given about decisions made by lower hierarchies. Non-hierarchical decisions are made when new ideas are considered to be promising by middle managers and to allow a more rapid further development, without having to wait for higher-level authorization. Middle managers initiate the action without waiting for higher-level approval, and then the project is made official when the higher approval is decreed.

## 5. Discussion

In this section, the findings presented earlier are discussed in relation to the main assumptions and suggestions stated in PPM literature, and implications regarding the evaluation and selection of different types of ideas and projects are drawn. First, what legitimacy of decision-making approaches implies for the organisational control of PPM processes is discussed; then, what a flexible PPM decision-making process might imply.

### 5.1. Legitimacy and the tensions of flexibility

Previous research has pointed out that not all decision-making approaches have the same legitimacy, that is, the extent to which they are accepted within an organisation. Accordingly, the results indicated that decision makers put into practice some mechanisms that allow them to avoid drawing exclusively on the highly accepted approaches when they are not considered to be suitable, and to give legitimacy to the decisions that have been made by the lower accepted ones. Thus, how decision makers deal with legitimacy would influence their capability to embrace a flexible decision-making process.

However, PPM literature has not thoroughly considered the issue of legitimacy as a conditioning factor to achieve flexibility in PPM. Furthermore, PPM literature has mainly considered decision-making approaches to be neutral in relation to their organisational acceptance, or displaying a legitimacy that is able to be controlled by formal PPM structures. For example, it is suggested that informal activities might be managed by quasi-formalised approaches in which, at the same time, formal and informal approaches are allowed (Olausson and Berggren, 2010); or by loosely coupled resources, that is, resources that are formally assigned but that decision makers are allowed to allocate to informal activities (Stilling Blichfeldt and Eskerod, 2008).

Legitimacy is affected by internal power relations that allow some groups to influence what is considered to be proper decision-making procedures and proper justifications for decisions (March, 1994), and by what is regarded as proper practices among external and internal stakeholders and by values rooted in a more general societal level (Brunsson, 2007). This means that individual decision makers, groups and organisations in general do not totally control all the factors that might influence the legitimacy of particular decision-making approaches. Thus, it questions the assumption that legitimacy of decision rules can be completely controlled and designed by formal PPM structures.

Achieving balance in PPM requires managing a decision-making process through different approaches, something that might create tensions and conflicts across the organisation (Bessant et al., 2011). The issue of legitimacy, and the way decision makers deal with it, suggest that achieving flexibility in PPM is not as simple as combining different decision-making approaches. Rules and methods for decision making are influenced by the acceptance of multiple actors across the organisation. The fact that an innovation becomes selected and developed in the form of a project depends on how decision rules are negotiated and accepted. The mechanisms presented in this study, by which decision makers deal with the legitimacy of the decision approaches, might be viewed as a manifestation of how PPM decision makers try to manage the tensions that a flexible decision-making process implies.

### 5.2. The paradox of flexibility

One of the main arguments supporting the need to achieve flexibility in PPM relates to the consequences of overemphasizing formal and rational decision approaches over others. Some types of ideas and projects might be rejected (Engwall et al., 2003; Stilling Blichfeldt and Eskerod, 2008) and an unintended unbalance between explorative and exploitive initiatives might be achieved (Cooper et al., 1998; March, 1994). However, flexibility might also lead to undesirable consequences.

First, the heuristics that people use to adapt their rationality (Eisenhardt and Zbaracki, 1992), making estimations (March, 1994) or choosing which logic of decision making to rely on (March, 1978) is not free of biases. That means that despite informal and non-rational approaches might be considered to be appropriate in relation to a particular decision situation, nothing ensures that the idea or project that in fact is further developed contributes to fulfilling organisational goals. Second, informal activities might affect the formal resource allocation process. Stilling Blichfeldt and Eskerod (2008) had already observed that projects driven in informal ways might use a considerable amount of resources, affecting the planning and allocation of resources in PPM.

This takes us back to the PPM literature and the main problems that a PPM process aims to solve. In fact, two of the principal organisational needs that PPM research aimed to address are how to select a group of ideas and projects that contributed to portfolio balance, value and strategic fitting and how to solve the chaos in resource allocation among projects

(Cooper et al., 1998; Elonen and Artto, 2003; Engwall and Jerbrant, 2003). Thus, a flexible PPM decision-making process in which people are able to act within formal processes and use rational approaches, at the same time that they may act in informal ways and use non-rational approaches, implies a paradox. On the one hand, it enables the achievement of balance between different types of innovations by allowing certain ideas and projects to overcome a state of ambiguity. On the other hand, it implies, at the same time, the risk of bias in decisions, a lack of transparency in the decision-making process and activities that alter the planning of resource allocation. The risk of biases and the interferences in the resource allocation process seem to be unavoidable consequences of the dynamics by which decision makers achieve flexibility.

This ways of viewing the chaos in resource allocation, which often affects multi-project organisations (Engwall and Jerbrant, 2003), as related to flexibility in PPM decision making suggests that it seems to be more difficult, than has earlier been discussed in PPM literature, to discern whether a pattern of decision making is considered to be intelligent or dysfunctional. In other words, if the resource allocation chaos is considered to be a problem to be solved or an unavoidable consequence of a flexible process.

## 6. Conclusions

This paper contributes to the research field of PPM by shedding light on the issue of legitimacy of decision-making approaches and the implications that it has for the management of project portfolios in product development. It was found that different decision-making approaches display different levels of legitimacy, that is, encounter different levels of acceptance within an organisation. Therefore, the dynamics by which an idea evolves is affected by the way in which decision makers deal with the legitimacy of the decision-making approaches that they plan to put into practice. Thus, the fact that an idea becomes selected and developed in the form of a project depends on how decision rules are negotiated and accepted. However, the level of acceptance of decision-making approaches is affected by some factors that are outside the control of decision makers. As a consequence, decision makers put into practice some mechanisms that allow them to avoid drawing exclusively on the highly accepted approaches when they are not considered to be suitable, and to give legitimacy to the decisions that have been made by the less accepted ones.

These findings contribute to a new way of understanding the problems that have traditionally been addressed in PPM literature: the risk that poor ideas are developed for too long and the problems for fulfilling the planning for allocation of resources among projects. A flexible decision making process enables the achievement of balance between different types of innovations, but at the same time, both informal activities and the subjective nature of some non-rational approaches imply the risk of biases and alteration of how the resource allocation of product development is planned. It leads to the question of whether problems in fulfilling resource allocation plans and the risk of biases in decision making are problems that arise due to poor decision-making practices, and whether they should, instead be understood as probable consequences of a flexible process.

The implication for PPM research is the need to broaden its focus of attention, integrating as object of investigation the legitimacy of decision-making approaches and the way decision makers deal with it. Furthermore, it also implies the need to integrating to the analysis of empirical data decision-making theories in order to allow behaviours that deviate from rational decision making to be understood as forms of rationality and to discuss their appropriateness in certain circumstances.

The findings indicate that a flexible decision-making process implies that decision makers might put in practice certain approaches that are less accepted within the organisation. Thus, managers should be aware that, some aspects of the evaluation and selection process might be difficult to be designed from the outside or managed at the moment it happens. This implies that only building up formal structures for organising and supporting decision making as it is suggested in PPM literature is not enough for facing the challenge of evaluating and selecting different types of ideas and projects.

An issue for future research is to support decision makers in achieving a dynamic in which approaches with different legitimacy are put into practice. The nature of some of these approaches involves difficulties, for example, supporting an informal process without eliminating its spontaneous and self-organising nature, supporting intuitive decision-making process which, in part, people may be unaware of or supporting the first steps in the development of an idea generation without removing its chaotic and ambiguous character.

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