

# AN INTEGRATED MODEL OF PORTFOLIO DECISION-MAKING PROCESSES

Extended Abstract

Linda Kester+\*, Abbie Griffin§, Erik Jan Hultink\*, Kristina Lauche\*

+ Corresponding Author

[l.kester@tudelft.nl](mailto:l.kester@tudelft.nl)

\*Department of Product Innovation Management  
Faculty of Industrial Design Engineering  
Delft University of Technology  
Landbergstraat 15, 2628 CE Delft, The Netherlands

§Marketing Department  
David Eccles School of Business  
University of Utah

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## INTRODUCTION

In today's competitive environment, continuous innovation is necessary to sustain firm success and long term business growth (Hauser et al., 2006). Continuous innovation implies that the firm or business unit has multiple products in development at any point in time. Ongoing success is contingent upon investing appropriately in product renewal and product line extensions within product lines, as well as investing in expanding these lines to new market spaces. However, funds are limited, and thus the firm must determine which products to invest how much in at what point in time – in other words, they must make decisions concerning the overall portfolio of product development projects that they will execute, and across what time periods, to maximize their overall success.

Recent research finds two systematic problems with new product development (NPD) portfolios. First, within many firms the NPD focus has shifted from radical to more incremental innovation, with the result that some portfolios have become unbalanced and no longer aligned to the firm's strategic direction (Barczak et al., 2009; Cooper et al., 2001; Kester et al. forthcoming). Second, many NPD project portfolios have become overloaded, leading to situations such as fire fighting (Repenning, 2001; Kester et al. forthcoming), in which portfolio managers are constantly occupied resolving urgent problems, thereby losing the 'big picture' of where efforts should be directed for highest success. The result of these challenges is that many firms face reduced overall success due to their inability to make effective NPD portfolio decisions and execute against them.

There have been regular calls in the literature to attend to developing effective portfolio management processes (Cooper et al., 1999; Hauser et al., 2006). However, to date academic focus primarily has been on methods for selecting individual NPD projects (Blau et al., 2004; Cooper et al., 2001; Englund and Graham, 1999) and on investigations into the role of human limitations in termination decisions (Balachandra et al., 1996; Biyalogorsky et al., 2006). Insights that prevent or resolve challenges in the daily practice of overall portfolio decision-making are scarce. This is unfortunate as it is a far bigger challenge to maintain an overview of the entire portfolio and to make decisions from a strategic perspective than to make individual project selection and termination decisions one by one (Cooper et al., 1999).

### **Research question**

The main objective of this research was to identify more completely how firms approach NPD portfolio management decision-making: that is, their project selection and termination decisions across projects and over time; what inputs are required to make portfolio decisions; what cultural and procedural challenges they encounter in making these decisions efficiently and effectively and why these challenges

occur. Our objective was to build theory for this important and broadly scoped, phenomenon-driven research question (Eisenhardt and Graebner, 2007), overcoming the compartmentalization that we found to be characteristic of prior research.

## METHODOLOGY

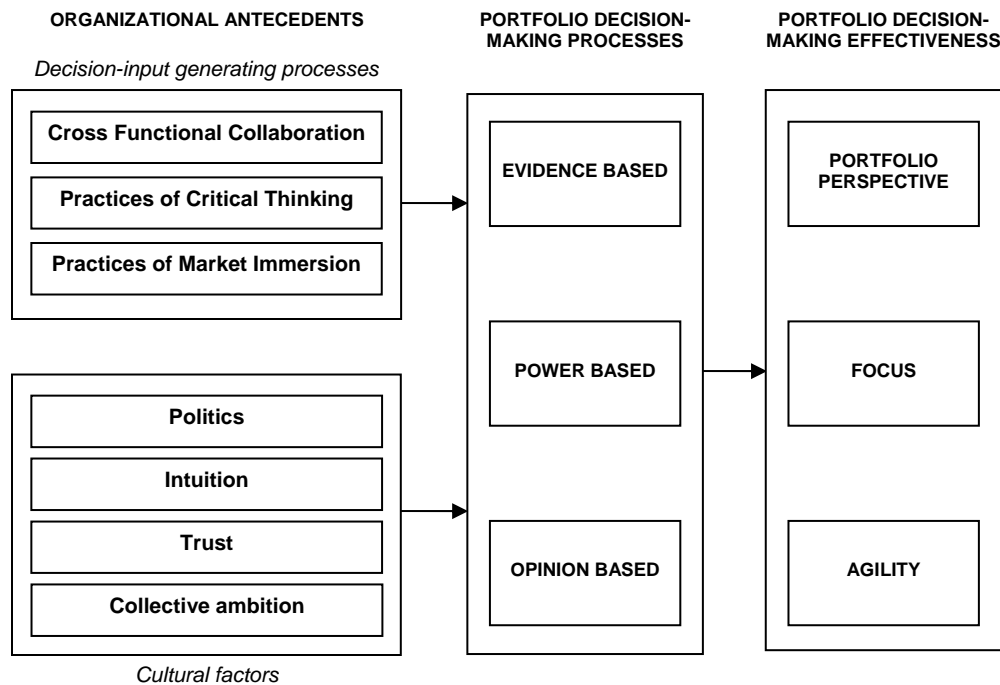
The focus of this research was on identifying how the processes of portfolio decision-making work. As no a-priori theory was available to explain this phenomenon we used Grounded Theory, which is typically used to elucidate processes and build theory (Bryant & Charmaz 2007; Charmaz 2006). Using multiple cases from different industrial contexts, geographical locations, and technology orientations strengthened the external validity and enhanced the generalizability of the conceptual model developed (Eisenhardt, 1989; Yin, 2003; Miles & Huberman 1994).

We used three data collection methods: studying company documents, conducting semi-structured interviews and observing portfolio decision-making meetings to triangulate data methods. All data were collected iteratively to enhance data depth and quality (Yin 2003). Table 1 provides an overview of the collected data.

**Table 1. Case sample and collected data**

Industry	Size	# meetings	# interviews	Types of informants
Food firm (US)	Medium	5	13	President, CEO, VP's of marketing, manufacturing, sales, finance; R&D managers, packaging manager, HR manager, sales managers
Medical devices (US)	Large	2	23	President, VP's & directors of marketing, R&D, manufacturing, sales, quality, finance; HR product managers, legal managers
Financial services (EU)	Large	1	13	Managing director, CFO, director of research, portfolio managers, product managers
Food firm (EU)	Large	5	26	Directors of research, quality, R&D, marketing; development manager, R&D managers, research managers, marketing managers, brand managers, manager operations, sales manager
<b>Total</b>		<b>13</b>	<b>75</b>	

Each interview and all field notes were transcribed to allow for a detailed coding procedure as described by Glaser and Strauss (1967). The coding procedure consisting of three steps: initial line-by-line coding (obtaining detailed information in the form of codes), focused coding synthesizing data into categories), and axial coding (specifying the properties of the categories and identifying relationships). The first two steps in the coding procedure applied to the within case analysis and the last step to the cross-case analysis. This process resulted in 14 core theoretical categories of the model each with related first and second level codes and formed the basis of the theoretical model as presented in figure 1. The theoretical model was grounded in the existing literature to provide more rigors to the model and induce more careful thought about the possible relationships between the constructs in the model. Importantly, the constructs in the model linked to existing concepts from organizational behavior, management, marketing, and new product development. This means that a multifunctional perspective is needed for understanding portfolio decision-making processes.



**Figure 1. The general model of portfolio decision-making**

## RESULTS

Our model (figure 1) proposes that portfolio decision-making effectiveness is determined by the interplay between evidence-, power-, and opinion-based decision-making. These three decision-making processes are fueled by a set of organizational antecedents, distinguished as three decision input generating processes (cross-functional collaboration, practices of critical thinking, and market immersion) and four cultural aspects (the degree of politics in the firm, the extent to which people rely on their intuition, the amount of trust between people in the firm, and the extent to which people in the firm shared company goals and values).

### Dimensions of portfolio decision-making effectiveness

*Portfolio Perspective.* Taking a portfolio perspective means that the firm’s decision-making processes have produced a complete understanding of all of the projects in the portfolio, and that the projects in the portfolio are aligned with the firm’s strategy. An effective portfolio management process provides an ongoing overview of all of the projects being considered, all those underway, where each of those projects is currently positioned in the NPD process, and when each is expected to launch into the marketplace.

*Focused Effort.* Good portfolio management processes should keep the firm’s efforts focused on only those short-term actions that will enable them to achieve their long-term goals. This effort prevents teams and product line managers from just chasing innovation in an opportunistic manner.

*Agility in Decision-Making.* Firms with effective portfolio decision-making practices need to be agile. They can make decisions quickly when needed. For example, if a major technology is invented that

allows them to improve their solution to a target market problem, or if a competitor unexpectedly changes direction, their decision-making processes should allow them to address those opportunities in a proactive, rather than reactive manner.

### **Portfolio decision-making processes**

*Evidence-based decision-making* processes present and debate the detailed assumptions behind the technical, financial, and market facts that are derived from processes of cross-functional collaboration, critical thinking and market immersion.

*Power-based decision-making* processes are centered on power struggles deriving from political processes in which the goals of individuals or subgroups dominate other individuals, subgroups or even company goals. Personal or group gains and losses dominate the decision-making process over evidence-based argumentation.

*Opinion-based decision-making* processes deal with the evaluation of holistic subjective opinions, which originate from intuitive processes that are based on overall feelings and personal experience rather than facts.

### **Organizational antecedents**

*Cross-functional collaboration.* The basic premise of a cross-functional collaboration process is having extensive communication networks that are easily accessed and used by people across all the functions involved with making these decisions. Short communication lines are key to cross-functional communication, and deliberate co-location of the disciplines involved can lower the hurdles of approaching someone who operates in a different functional area. Cross-functional collaboration provides an understanding of the different underlying assumptions (interpretations) of the numbers that are generated as decision-making evidence by each function, resulting in multiple perspectives and shared experience in the decision input.

*Critical thinking* is about understanding the technical and financial risks of the decision, resulting in analytical knowledge with quantitative expressions of technical information and of financial ramifications of potential decisions. Factual evidence steers in-depth discussions in which the focus is on what the data mean and how they can be used to understand the problems and risks at hand.

*Practices of market immersion* mean that people across all major functions (not just marketing) are actively involved in market research and seek personal contact with customers to get a full understanding of their target group. The firm uses practices of market immersion to engage in both various types of proactive and reactive market research activities to understand customers and other stakeholders and to identify their (latent) needs.

We identified four prevailing cultural factors influencing portfolio decision-making processes: the degree of politics in the firm, the extent to which people in the firm rely on their intuition in solving

problems, the extent and nature of (dis)trust between people in the firm, and the degree of collective ambition.

## **DISCUSSION**

Our goal was to study portfolio decision-making effectiveness from an integrated perspective, looking at how decisions are made simultaneously across the full set of NPD projects in development. We find that the “how” of decision-making is complex. This research identified a number of constructs that describe the systematic nature of portfolio management, resulting in a general model of portfolio decision-making effectiveness and antecedents.

The model proposes that portfolio decision-making effectiveness is determined by an interplay between evidence-, power-, and opinion-based decision-making processes. While evidence-based decision-making processes may in theory lead to more objective, and thus hopefully “better” decisions (Ansoff, 1991), the reality is that the data associated with predicting market, technology and financial success needed for making these decisions will always be incomplete. Additionally, because these numbers represent forecasts, they will always be at least somewhat inaccurate. Thus, even decisions based purely on market, financial and technical data, argued and understood by all functional domains, may lead to portfolio failures. Pure evidence-based processes also may lead to slowness in making decisions, as it takes time to gather, understand and agree on the meaning of the needed data.

Because the evidence for decisions is never complete or accurate, the reality in organizations is that other forces, such as individuals’ opinions and the power bases of those involved with making these decisions, will at some point come into play. These processes have benefits in that they may allow the firm to be agile in their decision-making, and provide the short-term focus necessary to execute toward the long-term plan. Furthermore, when managers are experts in the domains being considered, or when managers operate politically with the best interests of the firm and its stakeholders at heart, decisions based on these processes may be effective ones that lead to a series of successful new products.

This study contributes to the NPD and portfolio management literatures in several ways. First, we identify three dimensions of portfolio decision-making effectiveness; secondly we provide a systemic overview of the processes and organizational antecedents that interact in achieving portfolio decision-making effectiveness; thirdly we extend and integrate various concepts from the literature and show how they are related to the portfolio decision-making system. Research on portfolio decision-making should investigate the processes from multiple theoretical lenses, rather than just from one lens, as typically has been found in past research.

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