

Empowering project portfolio managers: How management involvement impacts project portfolio management performance

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Abstract

Along with the increasing diffusion of project portfolio management a new managerial role evolves: the project portfolio manager. This new role is supposed to be pivotal in planning and controlling complex project landscapes more effectively and more efficiently, in implementing project portfolio management practices as a management innovation, and in coping with traditional conflicts between line and project managers in matrix organizations. However, by empowering project portfolio managers and giving their role more clarity and significance, the complex power balance between senior managers, line managers, and project managers also has to change. These changes are assumed to lead to new tensions between traditional key players and the new role which will reduce the overall project portfolio performance. This paper uses the new role of the project portfolio manager and its interplay with line and senior management to explain how management involvement can positively and negatively impact project portfolio success at the same time. It therefore offers practitioners an initial point for designing organizational governance structures and job descriptions to increase the portfolio management performance while implementing or reconfiguring the formal role definition of involved managers. For scholars this article paves the way for an empirical study on the impact of power re-distribution in project (portfolio) management.

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1. Introduction

With a strongly increasing share of companies' spending for project-organized undertakings, the generally expected advantage in controllability for single projects comes along with a loss of transparency and hence effectiveness of the overall project landscape (Elonen and Arto, 2003). Thus, a structured and proactive management of the project landscape gets increasingly important. Good project portfolio management (PPM) is becoming a key competence for companies handling numerous projects simultaneously (Killen et al., 2008; Martinsuo and Lehtonen, 2007). A project portfolio is seen as a group of projects

that compete for scarce resources and are conducted under the sponsorship or management of a particular organization (Archer and Ghasemzadeh, 1999; Dye and Pennypacker, 2002). Existing approaches focus on describing *what* project portfolio management comprises, or should comprise. They address the processes, tasks, tools and instruments of PPM. This is of course a necessary clarification, but is by far not sufficient. Without analyzing *who* is responsible for the newly arising issues and how the key actors should cooperate and cope with their tensions, project portfolio management can neither be understood nor be implemented successfully. The present article focuses on the roles that are employed in project portfolio management. In doing so, it focuses on the new role of the project portfolio manager and how this new role changes existing ones, and how the new actor cooperates with the traditional roles. This leads to the following research questions: How does the new role of the project portfolio manager have to look like? With whom do portfolio managers have to collaborate? And how should the interplay between these

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participating management roles look like for a most effective and efficient portfolio management?

As promising and as necessary these new developments are, they will not remain without tensions between the actors (Arvidsson, 2009). A similar situation presented itself decades ago, when the gaining importance of the project manager led to new role conflicts in organizations. At that time, there was a mismatch between a project manager's (high) accountability and his (low) authority. But instead of just claiming for more influence and power for the project leader, one must rather analyze how this might affect the other management roles towards a sustainable increase of the overall management system performance. Hence, only if the overall system performance benefits from it, is it also worth to empower the project portfolio manager. I therefore see the role of the project portfolio manager in the interplay with its associated management roles and the aim of this study will be to think this scenario through to its logical conclusions. Thus, I aim for theory-based propositions to explain the impact of the interplay among the most important management roles in project portfolio management on the overall management system success.

In the following second section I conceptualize a success framework that is capable to capture project portfolio management performance as a whole. In contrast to earlier studies it uses a system of well-specified success criteria that are related to each other in a causal chain relationship. Ideally, the measures should therefore be taken at different points in time. I conceptualize the overall system success as consisting of the three dimensions: *process effectiveness*, *portfolio success* and *portfolio-related corporate success*. I further conceptually separate managerial tasks (What to do?) from the characteristics of the involved management roles (Who is doing it?) (Ritter and Gemuenden, 2003). This allows me to analyze the change of the distribution of influence and the appearance of role conflicts within the portfolio management system more precisely. In the third section I introduce a process-based understanding of project portfolio managerial tasks (What to do?) with four phases, which consist of those tasks that are related to *portfolio structuring*, *resource management*, *portfolio steering*, and *organizational learning and portfolio exploitation* (Blichfeldt and Eskerod, 2008a). These tasks are seen as directly value-creating and I hence argue that the portfolio management system success will be positively influenced by the extent to which these project portfolio management tasks are executed in an organization (Blomquist and Müller, 2006). This derived scheme will be used as the basis for the job specifications of the project portfolio management associated management roles. This becomes necessary as the implementation of the portfolio manager alone might be insufficient if it is not specified which particular managerial tasks the implementation aims for. The model furthermore provides a basis for clarity regarding the portfolio manager's work specifications, as there is still much diversity in terms of central coordination units for projects such as PMOs (Aubry et al., 2007, 2008, 2009). In the fourth section, derived from role theory (Biddle, 1986; Guirguis and Cheuning, 2005; Noble and Mokwa, 1999), I use the

attributes *role significance* and *role clarity* for the project portfolio manager's role to make assumptions about their impact on the extent of task execution and success (Who is doing it?). The characteristics of a role will influence which tasks are executed and to which extent and quality these tasks will be performed. Thus, there will be a direct effect of the portfolio manager's role on task execution and therefore an indirect effect on performance.

But as the portfolio manager's role should rather be considered in its management system context than isolatedly, in the fifth section I widen the perspective to include those management roles that I assume to have the greatest potential of being changed, causing conflicts, and influencing the management system: senior management and line management (Who else is doing it?). Furthermore, as their kind of involvement is fundamental for system success and to demonstrate their impact on the system, in section six I additionally define management involvement by three different types of activities: *empowerment*, *intervention*, and *encouragement*. Following upper echelons research (Carpenter et al., 2004; Gallén, 2009), I argue that senior management involvement in general can have positive and negative influence simultaneously (value-creating and value-destroying events). On the one hand, a strong, highly *empowered* portfolio manager is assumed to have positive influence on the extent of task execution. On the other hand, in critical situations, for example, 'power promoters' (Gemünden, 1985; Hauschildt and Kirchmann, 2001; Rost et al., 2007; Witte, 1977) can be helpful, but senior managers also tend to delay or prevent the abortion of a project they have initiated or strongly supported, even if there are clear indications that a continuation of the project induces more damage than value creation (Bonner et al., 2002; Ernst, 2002; Markham, 2000). Following this and derived from perceived procedural justice theory (Kang, 2007; Li et al., 2007; Zapata-Phelan et al., 2009), I assume that when managers bypass established rules and processes, this will lead to distrust and poor cooperation. These undesired relationship-based role conflicts (Jehn, 1997; Jehn and Mannix, 2001) are of a long-term nature and blamed for inflicting negative impact that is stronger and of higher longevity than the positive short-term effects from the spontaneous *intervention*. I separately conceptualize *encouragement* by top management also as a kind of management involvement to demonstrate and underline its importance for the system.

The overall underlying framework of this article is depicted in Fig. 1. Despite a number of direct effects demonstrated in empirical research (Belout and Gauvreau, 2004; Bonner et al., 2002; Swink, 2000, 2003), I assume the explanatory power of the model being maximized by conceptualizing indirect and moderating effects of management's role definitions and their involvement on the portfolio management system success, which will be derived in the following sections.

2. A framework for success

Although literature recognizes the elements that should constitute portfolio success (Cooper et al., 2001; Elonon and Arto, 2003), it remains difficult to capture the overall

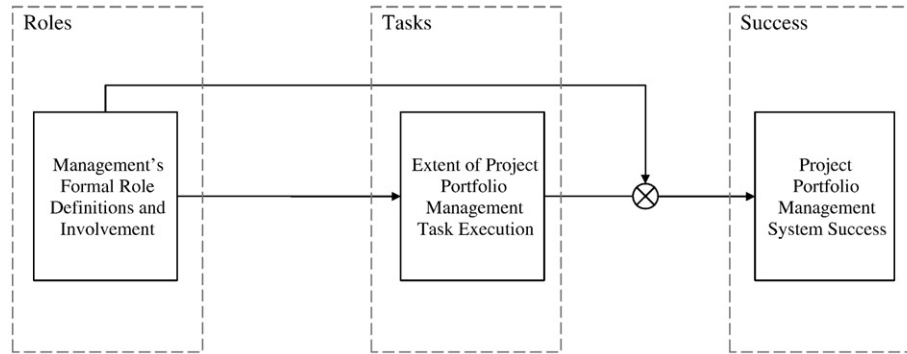


Fig. 1. Overall underlying framework.

management system outcomes. That might be because project portfolios are dynamic, multiply interdependent systems that constantly change and develop. Hence, there is a need for a comprehensive success framework that is capable to cover the system as a whole and additionally takes into consideration that changes made within a management system will take some time to have an effect and success is realized at different points in time (Jonas et al., 2010). Beyond that, for a firm's long-term success, solely financial measures to evaluate corporate success are insufficient (Shenhar et al., 2001). This has led to the development of multidimensional success measurement models, such as The Balanced Scorecard (Kaplan and Norton, 1996) and sophisticated success dimensions (Dvir and Shenhar, 1992). In project management literature it has also been suggested that project portfolio success should also be examined multidimensionally on the single project, portfolio, and corporate level (Blomquist and Müller, 2006; Müller et al., 2008). Furthermore, system evaluation models often look at inputs, processes, and outcomes (Bou-Llusar et al., 2009; Chang and Leu, 2006; Cohen and Bailey, 1997). The argument goes that it is not sufficient to assess end results only, but it is also necessary to consider how good processes are managed. For this reason, I propose using discriminated measures for process effectiveness and outcomes separately. Finally, derived from Shenhar's et al. (2001) notion regarding the project success dimensions of 'business success' and 'preparing for the future' and according to Richard et al. (2009), I propose to distinguish the outcome measures between portfolio success and corporate success.

Summarizing this, as shown in Table 1, I propose three dimensions of success measures to (1) consider the temporal perspective, to (2) use a multidimensional approach, to (3) include process effectiveness and outcome measures, and to (4) distinguish two separate measures for the outcome. Hence, I assume:

Assumption 1. *The success of a project portfolio management system is multidimensional consisting of the three dimensions of (1) process effectiveness, (2) portfolio success, and (3) portfolio-related corporate success, which will be affected by changes in the PPM system consecutively.*

To determine the effectiveness of the portfolio management process I apply a construct developed by Dammer et al.

(Dammer, 2008; Dammer et al., 2006). This construct comprises three complementary constructs: (1) information quality, (2) allocation quality, and (3) cooperation quality. Although these qualities are distinct, it is argued that they are closely related, and that their complementarities are essential for success. *Information quality* refers to the transparency that is achieved over the whole scope of projects of a certain project portfolio (Elonen and Arto, 2003), and is understood as multidimensional, using multiple criteria, such as: relevance, understandability, accuracy, conciseness, completeness, understandability, currency, timeliness, and usability of information (Dammer, 2008; DeLone and McLean, 1992; Petter et al., 2008). *Allocation quality* refers to an effective and efficient distribution of human resources among the portfolio (Fricke and Shenhar, 2000). Thereby the quality of resource allocation also depends on the quality of information available and the company's capability to process information (Jacob and Kwak, 2003). *Cooperation quality* refers to the interplay between different management roles typically involved during a project portfolio management process cycle. It particularly focuses on the quality of cross-project cooperation (Cusumano and Nobeoka, 1998; Sauter et al., 1998; Yuan et al., 2009) in terms of mutual assistance of different project teams and conflict solving between project managers.

According to Cooper et al. (2001), I define *portfolio success* by (1) the average project success over all projects regarding the

Table 1

A multidimensional success framework for project portfolio management.

Dimension
Effectiveness of the management process
Information quality
Allocation quality
Cooperation quality
Portfolio success
Average project success
Use of synergies
Strategic fit
Portfolio balance
Project portfolio-related corporate success
Business success
Preparing for the future

triple constraints of time, budget, scope, plus customer satisfaction, (2) the exploitation of synergies between projects within the portfolio that might additionally increase the overall portfolio value, (3) the portfolio fit to a company's business strategy, and (4) the portfolio balance in terms of as risk, area of application and use of technology (Elonen and Arto, 2003; Martinsuo and Lehtonen, 2007). *Average project success* thereby refers to the delivering of projects on time, within budget, to the specifications, and customer satisfaction in the average over all projects within the portfolio (Cooper and Edgett, 2003; Engwall and Jerbrant, 2003; Griffin and Page, 1996; Lechler and Dvir, 2010; Payne, 1995). I further consider the exploitation of *synergies* between running projects (e.g., technical synergies) and project results (e.g., market synergies) on a portfolio level as a form of value generation itself (Henard and Szymanski, 2001; Loch and Kavadias, 2002; Pattikawa et al., 2006; Verma and Sinha, 2002). For defining *strategic fit* as the third dimension of portfolio success, I follow Dietrich and Lehtonen (2005) and comprise the alignment of project objectives with strategy, the alignment of resources with strategy, and the degree in which the portfolio reflects the overall strategy (Chao et al., 2009; Ernst, 2002; Milosevic and Srivannaboon, 2006; Srivannaboon and Milosevic, 2006). Finally, according to literature, providing a maximum of value for an organization from its project portfolios implies a *portfolio balance* along several criteria (Archer and Ghasemzadeh, 1999; Cooper et al., 2002; Killen et al., 2008). I define portfolio balance as the adjustment between high and low project risks, between new and old areas of application, and between the use of new and existing technologies within the projects (Chao and Kavadias, 2008; Chao et al., 2009).

According to Shenhar et al. (2001), the success assessment of projects has to cover the performance during the execution, as well as the success of the result. Adopting this notion to the portfolio level, Shenhar's constructs (1) business success and (2) preparing for the future can be used to investigate economic long-term effects regarding the *portfolio-related corporate success*. In literature, *business success* is more generally separated into market success and commercial performance (Shenhar et al., 2001). Market success describes the extent to which sales objectives like market share or sales volumes were achieved (Griffin and Page, 1996; Shenhar et al., 2001). Commercial success measures are derived from the classical financial management criteria such as ROI, profitability, or time to break-even (e.g., Griffin and Page, 1996). Apart from the single project level these criteria are also applicable to the portfolio level. Also derived from Shenhar et al. (2001), *preparing for the future* is defined as a long-term measurement that addresses the preparation of the organizational structure and the organization's technological infrastructure for requirements that appear in future only. But in contrast to Shenhar et al. (2001), the measures are proposed to be applied at the overall portfolio level instead of the single project success. The measurement therefore includes the indirect benefits and opportunities from projects that are realized long after project completion, such as skills learned in project execution and the development of new technologies or new markets.

3. A process-based framework for project portfolio management tasks

In practice, managerial tasks that are executed by the management seem to be inextricably interwoven with their management role attributes such as clarity, significance or competence. For my conceptual framework I separate role attributes from their managerial tasks, as it has been done by Ritter and Gemuenden (2003), because this allows a deeper analysis of the interplay between certain management roles.

For portfolio managers there are several standards from diverse project management institutions which suggest a broad range of crucial tasks divided into groups of multiple phases (e.g., PMI, IPMA). The recent literature on portfolio management theory in contrast analyzes critical success factors predominantly separately or by modeling certain aspects and their relationship with success (Killen et al., 2008; Martinsuo and Lehtonen, 2007; Payne and Turner, 1999; Sanchez et al., 2008; Söderlund, 2004). Only few studies include a broader range of tasks instead of focusing on certain activities in depth. Blomquist and Müller (2006) made use of a set of questions to measure the extent an organization uses program and portfolio management techniques and tools. Deriving from this approach and in combination with process-based understanding of portfolio management (Cooper, 2008; Cooper et al., 1999, 2001; Killen et al., 2008), I structure the managerial tasks into one overall project portfolio management process using a chronological sequence of four highly interdependent phases: (1) portfolio structuring, (2) resource management, (3) portfolio steering, and (4) organizational learning.

The first phase of *portfolio structuring* refers to all the tasks that are initially undertaken to set up a target portfolio derived from a company's business strategy. Strategic portfolio planning, evaluation of project proposals, and a conscious selection of projects are supposed to be conducted in recurrent intervals and in alignment with the firm's (strategic) planning cycles (Platje et al., 1994). Because of a highly interlaced nature and the great importance of the portfolio structuring phase for the company's strategy implementation, it might be conducted with a higher-than-average involvement from the top management team members and representatives from functional units. More generally, portfolio structuring describes the firm's ability to integrate the PPM into its existing strategic processes. That means a close adjustment with the firm's market, technology, human resource, and investment strategy. In doing so, potential resource conflicts between line managers and projects might be reduced significantly.

In the second phase, *resource management* is seen in the narrow sense of project portfolios only (Hendriks et al., 1999). This perspective straitens the broad scope of the permanent organizational challenge of effective and efficient allocation of limited resources (Engwall and Jerbrant, 2003) and the focus is on some very specific portfolio-related facets. Thus, cross-project resource planning and resource approval are supposed to be among the most conflict-ridden aspects in portfolio management (Arvidsson, 2009; Blichfeldt and Eskerod, 2008b). Additionally, the handling of resource conflicts

between competing projects and between resource-demanding and resource-supplying management roles is another time-consuming portfolio management task (Engwall and Jerbrant, 2003). Altogether, the phase of resource management builds a smooth transition from the portfolio structuring to the third phase of portfolio steering. That is because the re-allocation of resources in reaction to portfolio change requests, which take place in the middle of structuring cycles, is triggered by events that are monitored during the portfolio steering phase. Consequently, the phase of resource management builds the flexible interface between portfolio structuring (initial recurrent resource allocation) and portfolio steering (permanent reactive re-allocation of resources).

In contrast to the recurring phase of portfolio structuring, the third phase of *portfolio steering* includes all the continuous tasks that are necessary for a permanent coordination of the portfolio (Müller et al., 2008). Portfolio steering requires a continuous monitoring of the current portfolio status in terms of strategic alignment and capacity utilization, as well as the development of corrective measures in case of deviations from the target portfolio. Hence, monitoring activities determine the quality of information, on which decisions regarding prioritization and selection of projects are based, and consequently might increase the credibility of resource commitments made by line management. Furthermore, portfolio steering comprises the coordination of projects across organizational units to identify synergies between comparable projects or to identify and abort obsolete projects (Loch and Kavadias, 2002; Zirger and Hartley, 1996). Thus, portfolio steering mainly tends to increase a company's adaptive capacity and flexibility regarding external and internal portfolio changes that appear on short notice (Gerald, 2008, 2009; Spillecke, 2006).

Organizational learning and portfolio exploitation in the fourth phase includes portfolio-relevant tasks mainly at the end of any single project life cycle. Due to the high relevance of organizational learning literature (Lichtenthaler and Lichtenthaler, 2009; Prencipe and Tell, 2001), I add this phase to the first three more common phases on the portfolio level. Learning as part of portfolio management focuses on the time when projects leave the portfolio process and even beyond that time. This can be realized through re-evaluation of project results and by utilizing post project reviews at a later date (von Zedtwitz, 2002, 2003). In this narrow context, organizational learning is aimed at securing and maintaining relevant knowledge for the organization after project closure, while portfolio exploitation means the utilization and dissemination of project results and lessons learned from earlier projects, which is often seen as a particular task of the project manager (Prencipe and Tell, 2001). Following the argumentation of Lichtenthaler and Lichtenthaler (2009), who demonstrate the importance of the interaction between exploratory, transformative, and exploitative learning in organizations, I propose to consider learning aspects within the portfolio management process and with respect to their relevance in the fourth phase.

In general, firms might not necessarily accomplish all four phases summarized in Table 2 to the same extent, but taken together, they represent the activity level to which project

portfolio management is implemented and utilized. In my conceptual model I will in the following refer to it as *extent of task execution*. All these tasks are seen as directly value-creating and therefore, one can assume a direct causal influence of task execution on success. Thus, my first proposition is:

Proposition 1. *A higher extent of task execution indicates a higher maturity of project portfolio management that leads to higher process performance, portfolio success, and portfolio-related corporate success.*

4. The role of the project portfolio manager

Even though research on project portfolio management is gaining more and more recognition, there are still only few articles that explicitly discuss the role of the project portfolio manager (Blomquist and Müller, 2006). The majority of the related literature mentions this role simply as the owner of a certain PPM task, such as risk management (Drake and Byrd, 2006; Olsson, 2008), which is then the actual focus of the analysis. Besides the project portfolio manager and with particular regards to the multi-project level, so far the multiple-project manager (Patanakul and Milosevic, 2009), the program manager (Blomquist and Müller, 2006) and several kinds of (multi-) project management offices (Aubry et al., 2007, 2008, 2009; Hobbs et al., 2008) are explicitly mentioned in literature. All these roles have in common that they in some way aim for a cross-project coordination of multiple projects within an organization but they slightly differ in terms of their particular objectives. For instance, depending on their assigned responsibilities portfolio managers can either be more administrative personnel or be able to shape the company's future through their influence, or somewhere in between (Blomquist and Müller, 2006). The administrator function is mainly

Table 2
Formal managerial tasks derived from a process-based definition.

Phase
Portfolio structuring (cyclic)
Strategic (portfolio-) planning
Definition of the long-term target portfolio
Evaluation of project proposals
Deliberate selection of projects
Resource management
Cross-project resource planning
Formal resource approval
Conflict management in case of resource conflicts
Resource re-allocation in reaction to short-term change requests
Portfolio steering (continuously)
Monitoring of the strategic alignment of the portfolio
Development of corrective measures in case of deviations from the target portfolio
Identifying synergies between projects
Coordination of projects across business lines (e.g., divisions or departments)
Organizational learning and portfolio exploitation
Evaluation of project results
Post project reviews (e.g., benefits tracking) at a later date
Store and maintain relevant knowledge after project closure
Utilization of lessons learned from earlier projects

responsible for gathering and consolidating relevant information for decision makers. The shaper function, in contrast, is an important initiator for the underlying strategy of the portfolio and is responsible for pointing out opportunities and risks acting as the extended arm of the senior management (Gemünden et al., 2008). Hence, I define the *project portfolio manager* as a central coordination unit that supports the senior management with its specialized knowledge about project portfolio practices (Dillard and Nissen, 2007). It is supposed to be pivotal regarding the aforementioned managerial tasks within the project portfolio management process.

However, because a management role cannot only be defined by its managerial tasks and in order to go into more detail from a conceptual point of view, I choose the attributes *role clarity* and *role significance* of the formal role definition of the project portfolio manager as the origin for my further argumentation. Therefore, it is necessary to understand the relevant parameters of this role and its theoretical influence to begin with regardless of other affected roles but, secondly, in the interplay with other pivotal management roles as well. An employee's *role definition* is the individual understanding of which duties and responsibilities form a particular job (Moideenkutty, 2009; Morrison, 1994). Moideenkutty (2009) additionally includes the perspective of those who interpret the role obligations and suggests the measurement from the supervisor's perspective as well. Following up on this, I suggest using the top management perception of the project portfolio manager's role. I additionally propose to use the relative influence by the project portfolio manager on the management system in comparison with senior management's perception of the line manager's influence.

"*Role clarity* has been explored in literally hundreds of occupational stress studies" (Bliese and Castro, 2000, p.66). However, I propose to use it as the first attribute of the role definition that might affect the extent to which tasks are executed. According to earlier studies, managers are assumed to be more effective when they understand what needs to be done, whereas role ambiguity decreases work performance (Hall, 2008; Tubre and Collins, 2000). Onyemah (2008), in contrast, stressed in his study on salespeople an inverted-U shaped relationship where moderate levels of role ambiguity are associated with higher performance while low and high levels are associated with low performance. In the narrow PPM context, the questions regarding role clarity aim for formal differentiated role descriptions, so that each task is carried out exclusively by the intended person instead of double or redundant work. It includes clear definitions of the objectives and the authorities of the project portfolio manager. *Role significance*, in contrast, is about the top management's perception of whether the project portfolio manager is one of the key players in realizing the portfolio strategy. This means a high degree of involvement in defining the target project portfolio, high involvement in steering the project portfolio, and playing a crucial role for the portfolio success. I propose to analyze the significance as the second dimension within the role definition, comparing it to the associated role significance of line managers. Literature defines role significance by the extent

to which a role is perceived to be critical to the overall success of the execution effort (Noble and Mokwa, 1999; Thorpe and Morgan, 2007). It is assumed that high role significance indirectly influences the performance through an increased role commitment as mediator (Noble and Mokwa, 1999). Ho (1996) additionally shows a positive impact of a high role significance directly on the business performance. Hence, for this study I assume that high role significance strengthens the project portfolio manager's role and hence increases the extent to which the managerial activities are conducted and therefore has a positive indirect impact on system success as well. A third attribute that is typically used in literature for describing a management role is the *competency* that is necessary to fulfill its job properly (Blomquist and Müller, 2006). I disregard this attribute—understood as the qualification level and the amount of professional skills for PPM tasks execution (Geoghegan and Dulewicz, 2008)—for that it might not show great potential for surprisingly new findings that contribute to the addressed research question in this narrow PPM context. Although competency may indeed be related to success and performance (Ammeter and Dukerich, 2002), it might hold lower conflict potential since more competency is assumed to be positively related to the system success, which would apply to all involved management roles equally.

Summing up, the role definition of the project portfolio manager consists first of its formal *role clarity* regarding the broad batch of tasks and responsibilities within the project portfolio management process and second of its *role significance* for the overall system success perceived by the top management. These two attributes, related to external locus-of-control, are chosen according to Thorpe and Morgan's (2007) work about middle managers' contribution towards the successful execution of strategy. Both are capable of being directly influenced by the senior management and hold a nontrivial potential of conflicts. Due to the relatively high novelty of PPM in general and of that role in particular, clarity and significance of the project portfolio manager's role in the PPM context is assumed to have direct effects on the extent of task execution. Finally, role clarity and role significance are rather not independent but understood as complementary regarding their influencing effects of their superior factor role definition, which leads to my following proposition:

Proposition 2.1. *A formal, clearly defined role of the project portfolio manager in combination with high role significance positively impacts the extent to which the project portfolio managerial activities are executed.*

5. Middle and senior management involvement

Besides the above described role of the project portfolio manager there are many stakeholders inside and outside a company who directly or indirectly affect PPM. Hence, developing this concept further, additional management roles have to be taken into consideration. On the single project level, besides the project manager (Anantatmula, 2008; Geoghegan and Dulewicz, 2008), especially project sponsors on senior

management level (Bryde, 2008; Crawford et al., 2008), steering committees (Lechler and Cohen, 2009), as well as many kinds of project teams and their members (Gevers et al., 2009; Müller et al., 2009) have been studied in recent years. Less directly related to project portfolios but still in the same context of project organization, numerous research has also been conducted regarding the role of the top management support and top management teams in general (Carmeli and Halevi Meyrav, 2009; Carmeli and Schaubroeck, 2006; Carpenter et al., 2004; Dammer, 2008), on the role of certain top managers, e.g., CEO or CIO (Leker and Salomo, 2000; Smaltz et al., 2006), and on the role of line management such as department or division heads (Bredin and Söderlund, 2007; Keegan and Hartog, 2004).

For the purpose of my conceptual model, in the following I will only focus on those roles which are assumed to cause the highest potential of impacting the portfolio management system by their mutual interaction. Thus, the two management roles whose relationship with the project portfolio manager I will bring into focus are the line management and the senior management, in which both roles might constitute a generalization and represent several of the aforementioned players. The most obvious role of the project manager in my model remains disregarded. Even though the project manager role is without any doubt seen as highly important for the system, it is assumed to remain unaffected in its role structure and role attributes. When shifting management responsibilities towards the new role of the project portfolio manager, this might be less overlapping with project managers' accountabilities on single project success.

According to upper echelons research, the *senior management* in this role model represents the key decision makers of an organization (Carpenter et al., 2004; Gallén, 2009). In PPM context, senior management first of all has to define in which situations projects are the best suitable kind of organization. Thus, they should decide about processes and standards for the overall project organization in general and the prioritization, selection, and evaluation mechanisms. Top level managers have to approve the target portfolio from a strategic perspective and in case of perceived deviations or fundamental conflict situations they are to deliver decisions such as re-allocation of resources or re-prioritization of projects in time. Comparable to the role of power promoters from Witte's very early work in the innovation management literature (Gemünden, 1985; Hauschildt and Kirchmann, 2001; Rost et al., 2007; Witte, 1977), senior managers in PPM are further supposed to surmount barriers of will regarding the changing system through their hierarchical potential. The *line management*, on the other hand, is seen in this study as resource owners that stand representatively for functional managers from the different disciplines and departments that are responsible for an effective and efficient use of the departmental employees across several projects (Platje et al., 1994). Ideally, it is expected to deliver information about the capacities in terms of quantity and quality of competences that are available for planned portfolio activities. And it is further responsible for consistent and reliable resource commitments. Beyond this traditional understanding of the line management in a matrix environment, for a project-based organization this role is supposed to change

towards a competence coach function, which is directed particularly towards handling the challenges that come along with the projectification of the firm and it might even substitute traditional line management (Bredin and Söderlund, 2007).

However, the interplay between the three roles of project portfolio manager, line management and senior management is assumed to be crucial for the project portfolio management process. Poor cooperation symptomatically arises in the form of role conflicts and the conflict potential between the three roles is tremendous and the kinds of conflicts are multifaceted. Conflicts on critical resources that appear between projects lead to conflicts with line management (Sbragia, 1984). For instance, when firms tend to provide more influence to their projects, more autonomy to their teams, better qualifications, information, and top management attention, and an integration of customers and suppliers to the project (Kleinschmidt et al., 2007; Wheelwright and Clark, 1992b), then each single project within the portfolio gets a more vigorous effect regarding its objectives, but on the whole there is the risk that rivalry between multiple powerful projects negates advantages for a single project by drawbacks through poor PPM performance. In many cases each project has its own steering committee of high-ranking senior management members, which enables the project to enforce its demands vis-à-vis line management (Lechler and Cohen, 2009). For line managers a lack of transparency regarding which of the claimed requirements have priority occurs (Elonen and Arto, 2003). Consequently, conflicts arise if many projects use the same critical resources (Laslo and Goldberg, 2008). Projects block each other if they are not coordinated and prioritized by a higher strategic management level. Additionally, following Larsen and Brewster's (2003) argumentation on the change of organizational structures, which adds up to more and more complex line manager roles within the organization and less well-defined line management roles than the traditional organization, one can assume less role clarity for the line management regarding PPM as well. Furthermore, following the preceding argumentation that a strong project portfolio manager role is significant for the extent of task execution and the fact of its embeddedness into the overall portfolio management system, the strengthening of the portfolio manager consequently might come at the expense of other players in the same system. Thus, empowering the project portfolio manager means disempowering line managers and top managers to a certain extent. This might not remain without conflict potential. While top managers delegate their authority voluntarily, line managers are disempowered by assignment or, even worse, by accident if they are not considered in formal role definitions. Such an assignment severely limits the traditionally strong role of the line managers (Keegan and Hartog, 2004; Laslo and Goldberg, 2008) within a matrix organization. Due to this loss of authority, it is most likely that line managers will put up direct or indirect resistance. On top of that, through their definition as resource owners, line managers have strong leverage disposable for confrontations. Generally speaking, these role conflicts that arise between two or more different roles within the same management system lead to inefficiency, ineffectiveness, and reduced PPM process performance. This understanding is derived from Jehn and Mannix' (2001) definition of undesired relationship conflicts that are

defined as interpersonal incompatibilities that become apparent in tensions, friction, animosity, and annoyance among team members. These conflicts will not necessarily have a noticeable direct impact on the extent of task execution but will indirectly weaken the effect between task execution and system success. This leads to the following proposition:

Proposition 2.2. *A formal, clearly defined role of the project portfolio manager in combination with a high significance of that role moderates the impact of the extent to which the project portfolio managerial activities are executed on the system success.*

6. The impact of management involvement

Following the preceding argumentation, the impact of a strong project portfolio manager is highly dependent on the influence of associated management roles. The direct and indirect influences of the senior management and the line management on the project portfolio management system that goes beyond the execution of certain PPM tasks will in the following be considered under the term of *management involvement*. In literature, management involvement and its influence have often been discussed from different research perspectives, such as information management or strategic management (Brentani et al., 2010; Burgelman and Doz, 2001; Kearns, 2006). In the majority of research, it is investigated more narrowly and under the terminology of top management support (Cooper and Kleinschmidt, 1995; Patikawa et al., 2006; Swink, 2000, 2003). In project management literature, Crawford et al. (2008) identify top management support as one key theme that has emerged more recently. However, several empirical studies show contrary results of positive or negative influence of top management involvement.

For instance, concerning the single project success, the majority of literature shows a positive impact of top management support (Young and Jordan, 2008; Zwikael, 2008). Wheelwright and Clark (1992a), for example, demonstrate the importance of the senior management regarding new product development projects. Pinto and Prescott (1990), alongside many others, give empirical evidence on strong positive influence (Fortune and White, 2006). Regarding the role definition of the project portfolio manager, it is further argued that role clarity on work demands is relatively unimportant in the face of low leadership support (Bliese and Castro, 2000). But there is also literature that points out the negative influence of top management involvement on project success (Bonner et al., 2002; Kessler, 2000). Especially wrong commitment to selected “pet projects” takes negative effects when projects are continued without rational reasons (Balachandra, 1984). Zirger and Hartley (1996) demonstrate how too highly committed top management leads to longer project development times due to political involvement of many top managers at the same time.

While top management support is mostly seen as a major success factor in project management, this does not necessarily apply to project portfolio management. Indeed, Cooper and

Kleinschmidt (1995), in their study of new product development programs, show the positive influence of resource support and resource commitment by top management. Brentani and Kleinschmidt (2004) support this finding with their results regarding the additional dimension of active top management involvement for new product development programs. Furthermore, Dammer (2008) gives empirical evidence on the positive impact of top management support directly on project portfolio success. But there are a few authors who differ from this opinion regarding the portfolio level and argue that top management support and its adherent allocation of additional resources do not necessarily lead to a higher project portfolio success (Ernst, 2001). Since each privileged attendance for a selected project necessarily means neglecting other projects at the same time, autocratic top management decisions which favor individual projects question the value of the whole project portfolio management process. Ernst (2001) argues, based on his research, for an inverted-U shaped relationship between top management support and the success of new product development programs.

Altogether, there is broad consensus on the high influence of senior management involvement in literature. But due to the variety in findings, one can assume that management involvement in general can affect PPM positively and negatively at the same time, depending on the kind of involvement and the success criteria (Brentani and Kleinschmidt, 2004). Hence, to explain the interplay between the key players of PPM and potential conflicts, I define management involvement as a multidimensional theoretical construct, which can influence the project portfolio management system positively and negatively simultaneously. As a logical result, for the purpose of this study I further propose to separately use those actions—regardless of top management or line management activities—that support the project portfolio manager in a positive manner, such as providing sufficient and dedicated resources for the management of the project portfolio, delivering of timely decisions when problem situations arise, setting rules and standards, adherence to the defined processes and rules, and acting like role models in the system. These collective activities can be seen as strategic or macro involvement in favor of the project portfolio manager and will be summarized under the term of *empowerment* (Seibert et al., 2004; Tuuli and Rowlinson, 2009). According to the structural perspective of empowerment in literature, adopted to the PPM context, I define empowerment as the indirect support by top management or line management which influences the authority of the project portfolio (Tuuli and Rowlinson, 2009). This can also be seen as the power-related involvement that affects the relationship of several management roles in the system by influencing the power distribution within an organization. This adds up to the following propositions:

Proposition 3. *Empowerment has a direct positive influence on (3.1) the strength of the role of the project portfolio manager in the management system and (3.2) the extent to which project portfolio management will be conducted.*

As the counterpart of empowerment I define *intervention* as the operative or micro involvement of senior management or line managers in the PPM tasks, such as in the case of top

management investing much personal time to accelerate selected projects, outside of official processes and rules (Ernst, 2002). However, interventions by line or senior management per se are supposed to be necessary in terms of overruling decisions in case of unforeseen deviations from the planning on a short notice. So why should interventions by management lead to negative consequences for the overall system success? For example, if the top management invests much personal time to accelerate selected projects, one could assume that thereby the average project success on portfolio level would increase as well or that it would at least not necessarily decrease. I argue that these activities have lower value-creating effects than value-destroying effects, which materialize especially when the aforementioned assistance takes place outside of the officially agreed processes and rules. According to the theory of procedural justice, which refers to the fairness of the formal procedures governing organizational decisions (Kang, 2007; Li et al., 2007; Zapata-Phelan et al., 2009), this kind of action leads to less confidence, trust, and poor cooperation quality in the organization and may finally result in relationship-based role conflicts (Jehn, 1997; Jehn and Mannix, 2001). These have a lasting negative long-term effect, thus negating the short-term positive effect of the assistance of a project. As a result, this kind of micro involvement in the operative portfolio steering first weakens the project portfolio manager's role. Second, even though it might not directly negatively impact the extent of task execution, it inflicts negative influence on the quality of task execution and it hence can be assumed to moderate the relation between the managerial tasks and system success. Perceived procedural justice offers employees "some control over the processes and outcomes of decisions, thereby reassuring them about the likely fairness of their long-term outcomes" (Kang, 2007, p.91). In contrast to the power-related involvement of empowerment, intervention can also be seen as task-related involvement because of its intrusion regarding the operational work. Thus, I propose:

Proposition 4. *Intervention has (4.1) a direct negative influence on the strength of the role of the project portfolio manager in the management system and (4.2) a negative moderating impact on the relationship between the extent of task execution and the overall system success.*

In terms of empowerment and intervention, the roles of the line management and the top management are considered as similar regarding their influence on task execution and the project portfolio manager's role definition. The influence of empowerment on task execution is assumed to be basically mediated by the project portfolio manager's role definition, whereas the influence of intervention on success is basically seen as a moderator for the impact of the extent of task execution on success. Consequently, for better overall system performance both top management and line management are required to empower the portfolio manager's role and must not intervene in the project portfolio manager's work on a micro involvement level. But while top management might not be aware of destructive interventions, line managers without any

formal role integration into PPM simply have no reason to behave accordingly (Laslo and Goldberg, 2008).

Thus, I finally propose a third dimension: *encouragement* for intra-organizational collaboration (Mollenkopf et al., 2000; Thieme et al., 2003). Similar to the involvement dimension used by Brentani and Kleinschmidt (2004), I define encouragement as the motivating influence that senior managers exert on middle managers to influence changes towards the intended direction. Encouragement is part of the leadership style (Thomas and Bendoly, 2009), and in the closer context of role conflicts in PPM this means to convince of and motivate line management for the idea of PPM and to make the circumstances comprehensible (Laslo and Goldberg, 2008). According to Xie et al. (2003), this kind of senior management involvement positively influences the quality of collaboration and particularly the quality of information that is shared across functions and product development units. Consequently, *encouragement of the line management through senior management* might become a key variable in reducing conflict potential. It significantly influences the line management's involvement in a positive way and makes a strong contribution to reduce possible role conflicts between the line management and the project portfolio manager by increasing the empowerment and decreasing the intervention caused by poor integrated line managers without role clarity but high role significance. According to Laslo and Goldberg (2008), higher organizational performance can be achieved when managers just learn that they have no basic differences in interests. This leads to my last proposition in this model, which is summarized and depicted in Fig. 2.

Proposition 5. *Encouragement influences the line management involvement towards (5.1) strengthening the degree of empowerment of the project portfolio manager and (5.2) weakening the degree of interventions.*

7. Conclusions and discussion

The key question I address in this study is how the interplay between portfolio managers and the associated line and senior managers in project portfolio management impact the overall system success. Undoubtedly, success is influenced by these three management roles, but depending on their kind of involvement, they are proposed to have either a positive or negative impact. The negative impacts are theoretically based on the unintentional enhancement of undesired relationship-based conflicts. But a strong project portfolio manager is positively related to success as well. Thus, not getting involved might also be a bad strategy, because inactivity in terms of being not supportive is also another kind of involvement that will not remain without effect. Instead, it is decisive to balance the portfolio manager's empowerment and the necessity of interventions into the process, which in turn comes at the expense of the project portfolio manager's authority. Conflicts of interests and lacking cooperation among the involved management roles are thereby seen as symptoms of a wrong management involvement (Laslo and Goldberg, 2008), which

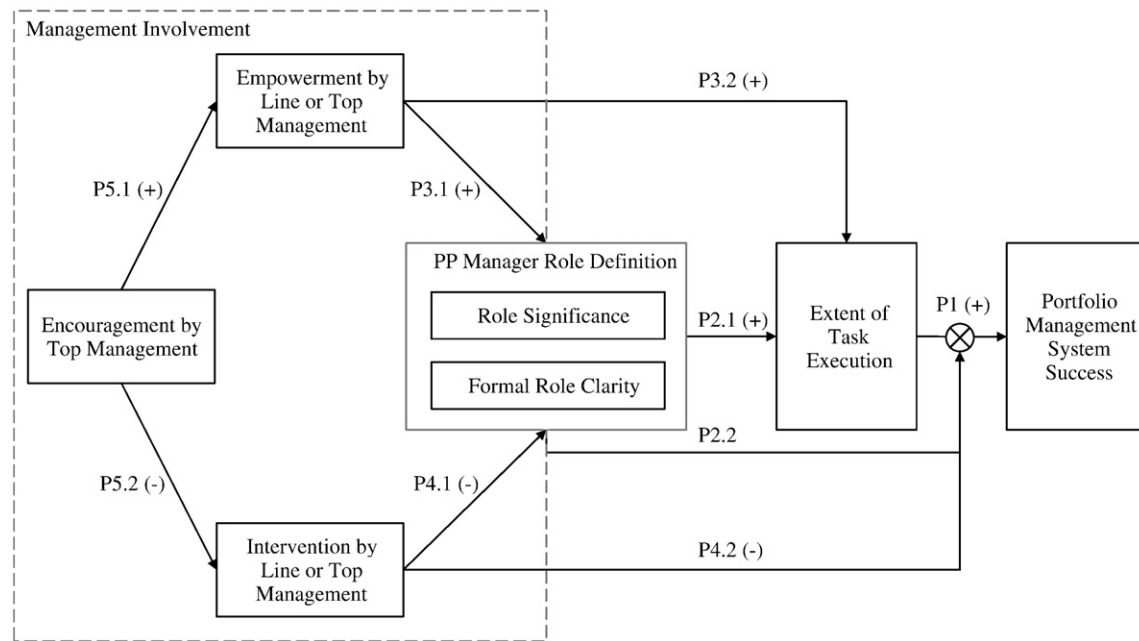


Fig. 2. Detailed framework describing the effects of the management's formal role definitions and its involvement on the extent of portfolio management task execution and the overall portfolio management system success.

additionally is supposed to be contextual dependent. The direction and strength of influence depends on (1) the role that is involved, on (2) how the concrete involvement looks like, and on (3) the success perspective that is addressed (Richard et al., 2009).

Regarding this underlying question, this study makes three major conceptual contributions to the understanding of the project portfolio management system and its management role's interplay. First, by splitting up management involvement into its three disjunctive kinds: *empowerment*, *intervention* and *encouragement*, it provides a more precise understanding of the impact of management involvement in general and specifically provides a reason for the manifold contrary results of senior management support provided by earlier studies, even beyond project portfolio management literature. Second, I consider the managerial tasks of portfolio management as a whole conceptualized by a four phased process-based framework for the multifaceted formal tasks of portfolio structuring, resource management, portfolio steering, and related organizational learning. Hence, this study closes a current research gap in terms of the definition of work specifications for the project portfolio management actors. Third, this study contributes to the literature on project portfolio management by explicitly considering the temporal perspective of success criteria and conceptualizing a dynamic multidimensional model for project portfolio management system success, based on research on teams that introduce 'process criteria of effectiveness' (Hackman, 1987; Hoegl and Gemünden, 2001; Hoegl et al., 2004). I therefore distinguish between the process effectiveness, portfolio success, and portfolio-related corporate success, which will be consecutively affected by changes made in the project portfolio management system. Summing up, scholars can use this conceptual model in future studies to empirically test performance

effects of management involvement; first, with a more differentiated consideration of the discriminative effects of empowerment, intervention and encouragement, second by considering the managerial tasks of portfolio management as one whole process and, third, with a more holistic consideration of undesired side-effects by using dedicated control variables when testing the influence of management involvement on different success dimensions. Regarding project portfolio management in practice, the main contribution is to make aware of the neutralizing effects by mixing different kinds of management involvement such as micro and macro involvement. Hence, one guiding principle for senior managers is not only to define reasonable, transparent rules and processes, but also to commit themselves to these rules. Decision makers have to take full responsibility for prioritizations and decisions made. It is furthermore essential how decision makers manage to relate decisions to corporate strategy and make their decisions credible and comprehensible to the line managers (Christiansen and Varnes, 2008). Assuming confirmed propositions on management involvement, for better PPM performance both top management and line management should empower and must not intervene in the project portfolio manager's work on a micro management level. This study finally offers practitioners a starting point for rethinking organizational structure and job descriptions to increase the management performance while implementing or reconfiguring the formal role definition of involved managers.

This study has some limitations that need to be considered when interpreting this concept. First, using the three roles of top management, line management and project portfolio manager to represent the key players in project portfolio management means to necessarily neglect several other roles that are also part of the management system. First and foremost, it is the project

manager, whose role remains unattended due to complexity reasons although literature indicates that senior management interventions can strongly affect the project manager autonomy as well (Anthony and McKay, 1992). Second, conflicts might be stronger and might arise more often in a traditional matrix environment. Even though the majority of industrial organizations might be in a matrix structure organization, the conflict potential is presumably determined by the degree of projectification of the firm (Arvidsson, 2009). Conflicts appear due to the change from a 'line supported by projects' towards a 'projects supported by line' organization, which can be seen as management innovation. To overcome those barriers I suggest using literature on promoters in innovation management research as one starting point for further analysis (Gemünden, 1985; Hauschildt and Kirchmann, 2001; Rost et al., 2007; Witte, 1977). Furthermore, the strength of the impact might also vary for different types of portfolios or regarding the degree of complexity (Verma and Sinha, 2002). Hence, future analysis should take contextual factors, such as industries, type of portfolio, and the organizations project portfolio management maturity into a more detailed consideration. This study further does not address conflicts of goals as a possible source of the sensible balance among the actors of PPM. Although the overall objectives might be shared among the three roles discussed, imbalance might also be the result of goal discrepancy, missing goal clarity or less well shared goals among the participating roles, which could explain the kind of involvement chosen in different situations. Additionally, there is a plurality of management roles that make the system infinitely more complex and should be taken into consideration when interpreting the concept. Each role can be embraced by many managers and each manager can embrace many roles at the same time. The addressed clarity is the most promising role attribute to reduce this complexity, but obviously clarity means not singularity and the organizational performance may increase by the plurality of a certain role as well. Finally, the discussion about portfolio management competencies is limited in this study. Beyond the role of the portfolio manager, especially the PPM competencies that are required by the other players in the management system have to be brought into the focus of future studies. Effective encouragement, for example, requires certain knowledge and competencies about PPM on the part of senior management. Thus, the impact of task execution and management involvement on performance might be moderated by the (different) skills possessed by the actors. Then, it might not only be the extent of task execution and the management involvement, but the quality of managers involved that gives their activities a different impact. Hence, enhancing my conceptual framework by including the construct of competencies might be interesting for future studies.

Altogether, the conceptual model theoretically derived in this study advances the understanding of project portfolio management from a management role point of view, which implies several changes in power distribution within the system which do not remain without conflict potential. It might pave the way for future research in this field, although the challenging issue for a quantitative study might lay in implying a longitudinal

design for analysis with multiple informants that is required to assess the influence of management involvement in the model proposed.

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