Exploring program management competences for various program types

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Abstract

This paper challenges the implicit ‘one-size-fits-all’ assumption that dominates mainstream program management competence literature. Findings from case studies of 10 programs executed in a large pharmaceutical company suggest that different programs require different competences of program managers. Based on the Pellegrinelli’s (1997) program typology we put forward a framework, linking specific management competences to program types. By establishing the link between the program typologies literature and program management competence literature, the paper shows that programs should not be treated as a generic and homogenous category in discussions on program management competences. In addition, the findings highlight program content as a significant contingency variable for understanding program management dynamics. The paper suggests a conceptual framework that combines program types with program management competence profiles that could be applied to appointment decisions, staff assessments and organizational development.

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Keywords: Program management; Program typology; Competences; Capabilities; Contingency theory; Project governance; Competence profile

1. Introduction

Having a competent manager is one of the most important factors that influence the success of projects (Turner and Müller, 2005) and programs (Vereecke et al., 2003; Delano, 1998). Thus, a large body of literature addresses the competences of project managers and their linkages to success (Malach-Pines et al., 2009; Müller and Turner, 2010). However, relying on the project management competence literature to construct a theory of program management might be misleading. A number of studies have shown profound differences between programs and projects and revealed the problems of direct transfers of assumptions and results between the two research streams (Artto et al., 2009; Lycett et al., 2004; Pellegrinelli, 1997; Thiry, 2002).

In addition, while a contingency perspective has long dominated the discourse on organization design (Mintzberg, 1979) and has started to be the general norm in project management theory (Engwall, 2003; Sauser et al., 2009; Shenhar and Dvir, 1996), it is still missing in theories on program management (Lycett et al., 2004; Artto et al., 2009). Although it is well established that programs differ (Ferns, 1991; Pellegrinelli, 1997), little attention has been paid to how these differences affect the dynamics of program management and the competence profiles of program managers (Crawford et al., 2009; Dearden et al., 2008; Malach-Pines et al., 2009; Müller and Turner, 2010).
and Nahmias, 2010; Partington et al., 2005; Pellegrinelli, 2002). With some exceptions (e.g. Pellegrinelli et al., 2007; Shao and Müller, 2011), the program management competence literature pays limited attention to differences between various programs in terms of prerequisites, technology, organizational context, etc. To put it bluntly: we still know little about what constitutes successful program management under various organizational conditions.

This paper addresses this gap between program management competence research and program typology studies. Based on an exploratory case study of the program management of 10 different programs undertaken at one organizational setting, the paper explores how various program management competences are associated with successful program management. The findings suggest that various program settings place distinctively different demands on program managers, thus requiring different competence profiles to cope with them. Building on Pellegrinelli’s (1997) typology, the study develops a set of propositions and a conceptual framework that link competences to the program types. Thus, the study complements the emerging discourse on program manager leadership competences in relation to the contingencies of the program context (Shao, 2010; Shao and Müller, 2011). It calls attention to the importance of internal program characteristics, i.e. program content, as a determinant of program management approaches.

The paper is structured as follows. Section 2 provides an overview of program competence and program typology research, resulting in a theoretical framework for the study. Section 3 discusses the empirical foundation of the study and the methodological approach taken. Section 4 presents the findings. Section 5 discusses the theoretical and practical implications of the results and proposes future lines of inquiry.

2. Theory

2.1. Competence research in project and program management

The importance of the project manager, and the competences required to successfully perform that role, has been emphasized in project management literature ever since the emergence of the discipline itself (cf. Gaddis, 1959). Today, almost 60 years later, two major research streams revolve around project management competence. The first one is based on quantitative studies, emphasizing the distinctiveness of project management (Turner et al., 2009) and addressing the relationship between certain competence profiles and project management success for specific project types (Malach-Pines et al., 2009; Müller and Turner, 2010). The second stream, building on Sandberg (2000), questions this rationalistic approach to project management competences (Chen and Partington, 2006; Chen et al., 2008). It focuses on the ways project managers conceive and experience their work and suggests competence models using interpretative phenomenographic studies (Sandberg, 2000).

Previous research has shown that findings obtained in the project context are not automatically valid in the program context (Lycett et al., 2004). Specific research on program management competences, however, is still an emerging field. The emphasis of this discourse has been to distinguish between competences for successful project management and competences for successful program management (Ferns, 1991; Pellegrinelli, 2002, 2008). For instance, Partington et al. (2005) identified the importance of wider contextual and strategic awareness for a program manager than for project managers. Furthermore, in comparison to project managers, program managers are supposed to be more capable of embracing uncertainty and ambiguity (Pellegrinelli, 2002) and to act in an ambidextrous mode, i.e. to simultaneously adhere to short-term exploitation of existing knowledge and long-term exploration of innovative solutions (Pellegrinelli et al., 2015; Rijke et al., 2014). Furthermore, program managers should be more able to improvise and adapt to continuously changing conditions, be more skilled in relationship building and stakeholder management, and possess more sophisticated leadership competences than project managers (Pellegrinelli, 2011; Shao and Müller, 2011).

With few exceptions (Shao, 2010; Shao and Müller, 2011), program management competence is discussed in the literature as a generic, universal quality, independent of program type, technical content, or organizational context. The focus is on the distinctive, unique features of program management. By the same token, when distinguishing between the functions and activities of project managers and program managers, scholars tend to regard programs as a homogeneous, generic category (Pellegrinelli, 2002; Partington et al., 2005; Crawford and Nahmias, 2010; Pellegrinelli, 2011).

During the past decade, the issue of contextual conditions and effects on program management is starting to gain momentum in program management research in general (Pellegrinelli et al., 2007; Yu and Kittler, 2012). So far, however, the contextual effects on program management competences have rarely been studied. An exception is Shao and Müller (2011), who found that some program managers varied their leadership styles according to specific situations during program execution (when approaching a deadline, etc.) and hypothesized that context might have a moderating effect on the relationship between program leadership style and program success. This hypothesis was statistically validated by Shao (2010), who identified that flexibility in program governance structures affects the relationship between leadership and program success. Nonetheless, despite the growing body of research on contextual issues in program management, it is not central in the competence stream of the literature.

As a result, we know little about how context-specific factors require particular program management competences. Thus, despite its prominence in organization theory (Mintzberg, 1979), project management research (Engwall, 2003; Sauser et al., 2009; Shenhar and Dvir, 1996) and project management competence research (Malach-Pines et al., 2009; Müller and Turner, 2010), the contingency approach to program management competences has not been developed. In the existing literature, program management is still conceptualized as a homogeneous category.

2.2. Program typologies

Several different studies have shown profound differences between various programs and have suggested a wide range of
program typologies, describing various types of program configurations in relation to the nature and mixture of projects. In an early attempt, Ferns (1991) suggested a typology of three categories of programs: (1) “strategic programs”—arising from significant strategic reorientation following a major organizational one-time event and affecting organizational structures, strategies and policies; (2) “business-cycle programs”—basically portfolio types of programs whose major objectives are project prioritization and control related to planning and budgeting cycles; and (3) “single-objective programs”—close to megaprojects (the space program, etc.), often operating outside the boundaries of a single organization.

In an alternative typology, Gray (1997) claimed that program dynamics differ according to the level of control and intensity of direct management imposed on the projects. The suggested typology included (1) “loose programs,” in which the program label is used only for reporting, (2) “strong programs,” in which program management controls and directs the projects closely, and (3) an intermediate “open programs” category, in which program management facilitates information flow to coordinate the projects without directly controlling them.

In a third suggestion, Gray and Bamford (1999) broke programs down into two types: “delivery programs” and “platform programs.” The former are revenue-creating with a focus on the external customer (product development, external client contracts, etc.), while the latter build up physical and organizational capabilities in order to enable “delivery programs.”

Furthermore, Evaristo and van Fenema (1999) introduced a fourth typology based on the number of locations in which the projects of the program are taking place, and the nature of the location–project interplay (depending on whether the projects are local or distributed, and whether any of the locations are shared or not). In addition, Vereecke et al. (2003) suggested a typology based on two dimensions: (1) whether the projects existed or not when the program was created, and (2) whether the intended program outcome represents a major, or an incremental, change to the organization. Finally, Pellegrinelli (1997) categorized programs into three types based on the rationales for program creation, related to different ways in which program-based management can create value, in comparison to the individual project management.

However, many of these typologies are primarily conceptual contributions based on logical reasoning by knowledgeable scholars. Few of them are based on explicit empirical evidence.

2.3. Theoretical framework

So far, there is little research on the implications of program types for program management approaches (Artto et al., 2009). Instead, mainstream studies of program management competences emphasize generic qualities, neglecting the potentially different characteristics of programs and, consequently, their potential implications for program management competences. Even though this generic approach helps to reduce complexity and establish a theoretical foundation for the field, further studies should elaborate on a contingency perspective of programs (Artto et al., 2009; Lycett et al., 2004).

Drawing on Pellegrinelli’s (1997) program typology as a framework, this paper applies a contingency perspective to program management competence. The framework was chosen because it distinguishes various types of programs based on the benefits gained through coordinated management of projects (Table 1). Thus, the typology is closely related to differences in the rationales for program existence as well as to the overall task that each program manager needs to achieve. Specifically, the best fit between a program manager and her/his program should manifest in extraction of higher benefits from program management.

3. Methodology

3.1. Research design

A 4-month, in-depth research study was conducted at the Operations Division of a large pharmaceutical company, which used the program management approach for a range of change initiatives throughout the organization. The research followed a multiple case study design, exploring the way various programs were managed by the organization and the competencies of the program managers. The empirical data collection process was inductive in nature (cf. Eisenhardt and Graebner, 2007): rather than aiming to prove or refute predefined hypotheses, the purpose was to explore challenges in program management. This inductive approach is particularly suitable for a relatively new, emerging research direction such as program management competence.

A sample of 10 programs was selected (Table 2) representing programs of differing content, size, complexity and lifecycle phase. The program activities encompassed several continents and a number of countries, including the United States, United Kingdom, China, Russia, Sweden, and Algeria. The geographical diversity of the sample represents a particular virtue of the research, since many studies of program management approaches tend to be based on programs carried out in a single country (cf. Partington et al., 2005; Vereecke et al., 2003). The program

<p>| Program typology used in the study (based on Pellegrinelli, 1997). |
|------------------------|--------------------------|</p>
<table>
<thead>
<tr>
<th>Program type</th>
<th>Short description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portfolio</td>
<td>Aims to exploit a common theme (common resources, knowledge, skills, infrastructure, etc.) among relatively independent projects, which enables greater efficiency and better performance. In such programs, project managers and project sponsors maintain strong relationships. The aim is to extract additional benefits through coordination.</td>
</tr>
<tr>
<td>Goal-oriented</td>
<td>Represents extraordinary, one-time initiatives outside organizational standard operating procedures. The aim is to develop new services, products, systems, plants, or infrastructures by defining, scoping and managing projects appropriately.</td>
</tr>
<tr>
<td>Heartbeat</td>
<td>Aims to achieve evolutionary improvement of existing systems and processes or organizational change. This program type creates value by reconciling contradicting views and demands for change from various organization actors in order to enhance existing systems and practices while sustaining operations.</td>
</tr>
</tbody>
</table>
type was identified during the data analysis phase using the Pellegrinelli’s (1997) framework.

The study had an insider–outsider design (Bartunek and Louis, 1996), with one of the authors acting as “insider” who closely followed the program managers using an ethnographically inspired approach (Fetterman, 2010). The insider spent 2–3 days a week, for 3 months (October 2013–December 2013), on location at the company. During this period, he had his own physical workstation at the office and had physical access to all company facilities, enabling him to interact freely with employees in various ways. The other authors acted as “outsiders” who reflected on observations from a distance. The insider and the outsiders met periodically to discuss their observations, tentative findings and guidelines for future empirical work.

3.2. Data collection

As in most qualitative case studies, several data collection methods and multiple data sources were used (Yin, 2009): participant observations, semi-structured interviews, and document analysis. Every day of participant observations on-site resulted in a written field note. Each of the notes consisted of one to four pages of bullet points of quotes, notes on numerous informal interactions with the staff during the day and related reflections. Among other things, these observations included two program meetings and a series of five meetings of an organizational development task force. A total of 18 semi-structured interviews were conducted with program managers and other relevant actors (such as program sponsors and program team members, including managers of projects within the programs, and a portfolio manager). The interviews lasted between 40 min and 2 h and 15 min, averaging slightly more than an hour. Most of the questions were open-ended, with follow-ups aimed at acquiring a deeper understanding and eliciting specific examples of the matters discussed. All the interviews were recorded and transcribed. The interviews were supplemented with a document analysis, for which the documents studied were of two types: program-specific, i.e. internal audit reports, overview presentations, organizational charts, problem escalation matrices, lessons learned notes, and program reports (such as risk logs); and general documents, for instance corporate guidelines and instructions, that

<table>
<thead>
<tr>
<th>Program #</th>
<th>Brief program description</th>
<th>Region</th>
<th>Program type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program 1</td>
<td>A market entry program, centered around building a new production plant</td>
<td>Algeria</td>
<td>Goal-oriented</td>
</tr>
<tr>
<td>Program 2</td>
<td>ERP system implementation in a large manufacturing plant, including business process re-engineering</td>
<td>Sweden</td>
<td>Heartbeat</td>
</tr>
<tr>
<td>Program 3</td>
<td>Introduction of changes to manufacturing and supply chain systems and processes required to comply with a new regulation</td>
<td>Europe</td>
<td>Portfolio</td>
</tr>
<tr>
<td>Program 4</td>
<td>Supply chain and manufacturing preparations due to deployment of new product lines</td>
<td>Europe</td>
<td>Goal-oriented</td>
</tr>
<tr>
<td>Program 5</td>
<td>Supply chain reconfiguration and obtaining regulatory approval for five different product lines because of expiration of collaboration agreements</td>
<td>US and Europe</td>
<td>Goal-oriented</td>
</tr>
<tr>
<td>Program 6</td>
<td>A market entry program centered around building a new production plant and outsourcing to contract manufacturing partners</td>
<td>Russia</td>
<td>Goal-oriented</td>
</tr>
<tr>
<td>Program 7</td>
<td>A market entry program centered around building a new production plant, outsourcing to contract manufacturing partners, and merger and acquisition activities</td>
<td>China</td>
<td>Goal-oriented</td>
</tr>
<tr>
<td>Program 8</td>
<td>Large-scale supply chain reconfiguration around the world, including closing several plants and transferring products between production sites</td>
<td>Worldwide</td>
<td>Heartbeat</td>
</tr>
<tr>
<td>Program 9</td>
<td>Introduction of changes to manufacturing and supply chain systems and processes required to comply with new regulations</td>
<td>Worldwide</td>
<td>Portfolio</td>
</tr>
<tr>
<td>Program 10</td>
<td>Initiative aimed at creating a strategic alliance with another pharmaceutical company in relation to one of the product lines</td>
<td>US and Europe</td>
<td>Goal-oriented</td>
</tr>
</tbody>
</table>

<p>| Table 2  |
| Programs studied. |</p>
<table>
<thead>
<tr>
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<th>Program type (Pellegrinelli, 1997)</th>
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<p>| Table 3  |
| Empirical data overview. |</p>
<table>
<thead>
<tr>
<th>Program #</th>
<th>Interviews with program manager</th>
<th>Interviews with program sponsor</th>
<th>Interviews with program team member</th>
<th>Participant observation (e.g. program meetings)</th>
<th>Document analysis</th>
<th>Informal communication</th>
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<tbody>
<tr>
<td>Program 1</td>
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<td>Program 2</td>
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<td>Program 3</td>
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<td>Program 4</td>
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<td>Program 5</td>
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<tr>
<td>Program 8</td>
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</tbody>
</table>
shed light on project, program and portfolio practices throughout the organization.

The empirical data, attributable to the specific programs are summarized in Table 3. One of the three program sponsors interviewed provided data about two different programs, #1 and #7, within one interview and is counted twice in the table. A total of more than 500 pages of empirical data were collected and analyzed in the study (not counting company documents).

3.3. Data analysis

The analysis was partly conducted concurrently with the data collection process. After acquiring a sufficient level of understanding of the way programs were managed at the company (approximately after 1 month into the field work), the researchers performed a broad literature review of program management, searching for any discrepancies between the literature and observed practice. One such discrepancy appeared to be the uniform view concerning program management competences in the literature in relation to the distinct managerial challenges that the various empirical programs entailed. This subsection details the analytical procedure followed in order to understand these differences better.

In the first step, the programs were classified into three categories according to the Pellegrinelli’s (1997) typology, based on the type of benefits arising from the coordinated management of projects, such as the use of a common IT system, lobbying capacity to attain higher efficiency, development of new products, services or assets, or renewal and change of existing systems, structures and processes.

However, the categorization process was not clear-cut and some of the programs were difficult to place in a particular category. For instance, Program 7 started off as a broad market entry program, balancing the interests of a number of organizational units around the world, before reducing its scope to the construction and launch of a large manufacturing plant. Moreover, the programs related to the introduction of new regulations seem to have both portfolio and heartbeat characteristics. In particular, they both extracted benefits from the coordinated use of common resources, such as IT systems and legislative expertise, and reconciled conflicting opinions about how the new requirements should be operationalized into cohesive changes throughout the company. We chose to classify them as portfolio programs, since the key motive for creating the programs was related to the use of common resources.

Despite these challenges related to reduction of complexity in any categorization or typology (Doty and Glick, 1994), the final categorization helped to capture the essence of the programs. In social science, every typology is a simplification (Eisenhardt, 1989). Typologies, however, play a fundamental role in theory building and provide a number of advantages; including parsimony, equifinality, integration of multiple attributes, and embracing multiple patterns of relationship between the attributes and their effects across various types (Doty and Glick, 1994). The fact that there were more than one program in each category allowed us to both check within-group similarity and explore between-group differences in order to achieve analytic generalization (Yin, 2009).

In the second step, the distinct program management competence areas for each of the program types were identified. In line with our inductive approach, we chose to derive competence areas directly from the empirical data and not limit the analysis by applying a single competence framework from the literature. Program management competence constitutes a developing research direction, which, as our literature review suggests, so far lacks a universally agreed and validated conceptual framework to warrant a more deductive approach. Furthermore, even though project management competence literature is more developed, it is not an appropriate foundation for the discussion of program management competences (Artto et al., 2009; Lycett et al., 2004). Thus, to allow for serendipitous findings commensurate with the inductive research approach, the data were reviewed with a focus on the specific challenges that each of the programs faced and the competences that were required to overcome them.

The analysis focused on competences needed to deal with challenges pertinent to the program types rather than the competences actually possessed by the program managers. Thus, the analysis of the interviews differed between the programs. For programs that faced severe challenges, the analysis aimed to infer the competences that the managers lacked and that might have helped them to overcome or avoid the identified challenges. For the successful programs, the focus was more on the competences that either helped the managers to overcome the challenges or to prevent them altogether. Further insights were obtained from the descriptions and observations of the everyday work content and challenges of the program managers. In addition, the assessment of the particular program’s progress and the program management approaches employed by the program sponsors supplemented the picture.

When several factors indicated a match within a category, while differing between the categories, the interpretation was that there was a fit between program type and management competence. Finally, after reviewing the resulting sets of individual competence areas, we conceptualized them into three distinct core management roles for each of the program types.

The validity and reliability of the findings were corroborated by several means. First, the data allowed for triangulation using various sources and collection techniques (Yin, 2009). Second, the conclusions drawn from the data were validated with the company’s managers during several workshops and worldwide webinars at the company. Minor corrections were made based on the comments received during these meetings. The researchers, however, assumed full responsibility for the final interpretation.

4. Results

Many of program management competences were regarded as significant for all programs types due to their overall positive nature. In particular, effective leadership and communication skills appeared to be generally important, independent of program type. However, each particular program type also required a...
distinct sub-set of competences that were of less importance for the other program types. The following subsections focus on these distinct competences.

4.1. Competences for portfolio programs

Portfolio-like program managers did not have much formal power over the projects they were coordinating. In order to successfully manage this type of program, managers had to be particularly proficient in two areas. First, they had to be able to create visibility in order to have a grasp on what was really going on with their projects. Second, they needed a set of competences related to effective communication with the program board and other high-level stakeholders, including timeliness, clarity and the ability to distill and present the most relevant pieces of information.

4.1.1. Informal influencing

Managers of portfolio programs needed to be particularly skillful at influencing other people, including project managers and senior executives. That appears to be related to the lack of formal authority and managerial power of the managers of this type of program. The various projects assembled within a program of this type were not necessarily closely related. The project managers mainly reported along their functional and regional ranks and in many cases were reluctant to share information with their program manager. In fact, the organizational barriers to obtaining proper information represented a major challenge for the program managers to deal with, as noted by the interviewees.

We’ve been up against a brick wall in some of the key areas trying to get the right level of information. (Program Manager)

We’ve come up against some problems trying to get the right level of schedule visibility around site investments, timelines and what they are doing. (Program Manager)

Given the lack of a clear mandate, the program managers needed to find their own ways around the barriers to obtain the relevant information. One of the common and seemingly effective approaches was to engage with the project managers informally.

A good program manager should be able to engage with everybody to overcome some of these barriers. (Program Manager)

To me, this is the biggest issue we have with program management as an organization. This is a set of negotiation we have to go through and consensus-building to get basic governance processes in place for this kind of program. (Program Manager)

[What’s important to have is] influencing skills. It’s normally [about] managing a number of interfaces with various projects because it’s about the ability to create a purpose across a number of different groups. (Program Sponsor)

In cases when this did not work, the manager of a successful portfolio program benefited from engaging the program sponsor by establishing informal relations beyond their job descriptions.

I wrote those role descriptions in my own words and in my own style so that I could really talk to them in a passionate way, in a way that really meant something to me, rather than listing them as some standardized framework. (Program Manager)

Sometimes there is a little bit around navigating networking internally and possibly externally to help to say [to other stakeholders] that we are going in this direction and see what they are doing; [Helping to navigate through political issues] was more like a personal thing I did with [the program manager]. (Program Sponsor)

4.1.2. Distilling key information

Getting the right information was not sufficient. A second key area was to process the information internally and deliver the key messages in a clear and concise way. The ability of the program manager to grasp the essence of an issue and communicate it in a clear way was highly valued by the program sponsor:

There is that [important] ability to work in the detail and then take it up to a level of the program board and distill the critical information; I think program managers are managing programs that are very complex, a lot of things are going on. So to distill this to a sharp status updates and what decisions we need to make is really critical no matter what the program is. (Program Sponsor)

It’s really the program manager who needs to make the assessment: “Ok, what do I need the program board to know at this point? Where will I do a deep dive to say here is an area that you need to know a little bit more about?” (Program Sponsor)

Besides the quality of the information provided, the interviewees emphasized predictability and brevity of communication.

There is often an overload of information at the governance level, which can be a challenge. So what are we steering? Don’t show up with 50 slides; The routine pieces of information are always helpful. So as a program board you always know that you are going to see these five things and then decisions to make [according to a] standardized agenda. That’s structure again, but I think it’s more about the quality of information. (Program Sponsor)

The emphasis on competences related to information processing appears to be related to the importance of decision-making support. In particular, the lack of mandate of
the program managers requires all major decisions to be taken at the program governance level.

4.1.3. Structuring information flow
The third area emphasized by the interviewees is setting up structures to support information flows within the program. As expressed by one of the interviewees, the purpose of the structures was:

[to] create [the] right caveats across your program, so that you have clear accountabilities, and [ensure that] you have [the] right visibility for the information of the program so that you can reinforce and create the right behaviors across the program [to make sure] that free sharing of information allows everyone to do their work. (Program Manager)

The structures were not referred to as a formal control mechanism but as a means to support information exchange in order to understand the essence of the issues. In this sense, they complemented the more informal communication channels discussed above:

When these [organizational] barriers are too high, [a good program manager should be able] to create the right culture and right structures. (Program Manager)

It’s structure, it’s sort of the upfront clarity about expectations and that sort of thing. (Program Sponsor)

4.1.4. Flexibility
The managers of portfolio programs also needed to be flexible in their approaches to the various projects within the program. In particular, the interviewees commonly mentioned situational leadership and flexibility as related to successful management:

I think certainly you must be flexible and [have a] flexible-approach to be able to accommodate needs of different projects and different work streams. In my experience, I think that was important. (Program Manager)

I think one of the hardest things in this position is to know how [and] when [to] intervene, get involved in an issue. (Program Manager)

The demand for flexibility was also related to the lack of formal authority of the program managers to enforce general rules, which indicates potential benefits of a more contingent approach to coordination of the projects within the program.

To conclude; in order to be successful, the managers of portfolio-like programs needed a set of distinct competences to obtain, refine and communicate clear and close-to-reality program reviews to their higher-ranking managers without having much actual formal authority over their projects. Their primary function was decision-making support for their superiors.

4.2. Competences for goal-oriented programs
In comparison with portfolio-type programs, managers of goal-oriented programs needed a different set of competences. One of the characteristic features for managing these programs was described by a program sponsor as “being clear on the outcome you want.” The sponsors of such programs were notably more concerned with “getting things done,” while information processing and transparency, which were emphasized for the portfolio-type, were not in focus. More specifically, goal-oriented programs required stronger directing and decision-making skills. The program managers had a clear mandate to make decisions and were judged by sponsors on their results. In addition, they were actively involved in the development of high-level technical solutions for their programs. In order to do so, they needed to have sufficient technical expertise. Once the decisions had been made and developed into specific plans, the program managers needed to have a hold over the programs. Overall, this competence profile was primarily “inward-oriented.” The competence areas are described below in more detail based on the empirical data.

4.2.1. Directing
For goal-oriented programs, the interviewees emphasized the program managers overall responsibility for the program outcomes. Managers of the goal-oriented programs enjoyed a high level of autonomy, while the program sponsors had a relatively hands-off approach to the program activities.

Normally I assign one of program managers, who actually does all the coordination, to make sure all the plans are tied together, to make sure that all the business commitments are being met. (Program Sponsor)

In other situations, I know that [the program manager] has needed to be much more hands-on. So he has truly directed people, having the teams of production, or quality, or other people, following what he has told them to do. (Program Sponsor)

Thus, the program managers’ task could be described as holding the program together and directing people to meet the business commitments.

4.2.2. Decision-making
The managers of the goal-oriented programs seemed to be fully aware of their strong mandate. At the interviews, they often used definitive language when describing their actions. A typical example is the following statement by a program manager:

I split the program in two. (Program Manager)

However, if the conditions of managerial autonomy were not met for these programs, organizational problems typically occurred. As one program manager noted:
Out of those 17 [months of delay] I think there were at least six that were related to [the company] having started asking questions: should we not, should we, should we not, etc. (Program Manager)

Thus, making the most important decisions from the outset and showing confidence in the successful delivery of the program were regarded as raising the odds of program success. Finally, the presence of a strong sponsor as a single point of accountability strengthened the conditions for internal decision-making.

4.2.3. Planning and control
With well-defined program objectives, devising specific measures for achieving them was a feasible task. The interviewees placed strong emphasis on detailed planning and monitoring competences during program execution.

The most important aspect, I think, is to establish the future plan and to track what you deliver against it. (Program Manager)

For this particular program, I think the critical thing that [the program manager] has brought is his ability to visualize, and make visible to me, an incredibly complex set of inter-dependent plans, as well as to be able to focus on the critical path, and thus put in place a structure to manage and monitor those plans and the interdependencies between them. (Program Sponsor)

So on one level he has his 1,000-line MS Project plan and then at the top level he also has a relatively simple visualization of how everything fits together, and in between you have operational work plans that each of the functions or the cross-functional teams follow as a delivery of the site start-up. (Program Sponsor)

4.2.4. Technical expertise
Another area associated with successful execution of goal-oriented programs was sufficient technical competence. Much of the daily agenda was associated with the technical aspects of the programs. Having a certain technical awareness was also associated with better risk management, given that many risks represented technical challenges. Both program managers and sponsors were aware of this expert facet of the role:

[Program managers] need to have a level of technical understanding of what we are trying to achieve. They do need to understand about construction, they do need to understand about technology transfer of products, probably these are key skills. (Program Sponsor)

[A good program manager] has sufficient understanding of everything, of all that happens in the work streams so he has a good overview of the interdependencies. (Program Manager)

One of the ways this expertise was used was to facilitate problem solving within the team. This was particularly valuable in situations where program teams were not accustomed to specific solutions, such as when transferring an established technology to an emerging market. Since the program managers assumed overall responsibility for their programs, being able to contribute technical expertise was conceptualized as an asset:

[We] spent a half of that meeting [brainstorming about] what we potentially could do [in order] to save things, making this business case more positive. Costs, time, supply chain, technical solutions, outsourcing, partner processes, etc. (Program Manager)

It’s a complex production facility and industry regulations, qualifications, quality assurance, GMP, etc., of the pharmaceutical, are so complicated as well. It all has to fit together properly—otherwise we would never get approval for the site. So, that’s what [the program manager] has been able to bring. (Program Sponsor)

Moreover, the technical expertise was also useful to ensure that necessary quality levels were met.

There is also a challenge with standards. There is more of a tendency if you allow it for a lower standard to be accepted during construction. So you have to be very clear on the standards that you need. (Program Sponsor)

4.2.5. Team building
The inward focus of the goal-oriented program managers was manifested in the importance attributed to staffing and team dynamics.

There was an enormous amount of stakeholder management: obtaining the resources, talking to the resource providers and explaining to them the nature of this [program] and what our obligations were, so that I could get all the right people, such as the technical experts, in place. (Program Manager)

We spent a lot of effort getting the right people in, local to the area, to run the factory. (Program Manager)

So, that’s I would call the single most important thing. To get the functional teams integrated into cross-functional teams and [make sure that] they are all aiming for a common goal. (Program Sponsor)

To conclude, in order to be successful, the managers of goal-oriented programs needed a set of distinct competences to take overall responsibility for their autonomous programs in an effective way, including decision making, direction, planning, control, staffing and team building, as well as applying technical expertise where needed. To a certain extent, their managerial role was primarily inward oriented and required...
them to control most of the program aspects in order to meet business commitments.

4.3. Competences for heartbeat programs

One of the hallmarks of this type of program was that they were related to adaptation of existing systems and processes, with high stakes for the participants, and thus closer in nature to organizational change endeavors. High competence in communication was a necessity for successful management of the heartbeat programs. However, the emphasis in this case was on negotiation and politics, since the program managers needed to play the role of the program ambassador to ensure that the program was progressing despite the conflicting requirements of the various stakeholders. Indeed, the managers needed to actively influence program-related decisions of all stakeholders, including people holding superior positions. Thus, having a well-developed personal network within the organization was particularly helpful. In addition, this type of program also required managers with high strategic and contextual awareness.

4.3.1. Contextual awareness

In general, managers of heartbeat programs were more aware of the contexts of their programs than managers of the other program types. For instance, they often talked about strategy, competition, trends in the pharmaceutical industry, and differences in management practices between the business units of the company. They were also highly concerned about their program’s long-term effects and implications for the company’s business. Thus, the program stakeholders were taken very seriously. By the same token, the heartbeat program managers were highly critical of what one of them called an “Excel spreadsheet approach” to management:

[Good program managers] have this ability to look at themselves and the program in a holistic way. (Program Manager)

I think that as a good program manager you need to ensure that people see the whole picture rather than start to dig into the details. (Program Manager)

[A bad program manager is] someone who sees program delivery as the only goal […] It’s kind of the Excel-spreadsheet approach I would say: they just want to tick boxes. (Program Manager)

4.3.2. Scenario planning

The emphasis on contextual interdependencies allowed the managers to assess the long-range implications of the decisions made throughout program execution. As an example, scenario planning appeared to be an important technique in all interviews with the heartbeat program managers but not with the others:

[A distinctive competence is] scenario planning, which an average program manager wouldn’t do. (Program Manager)

[A good program manager] foresees the future. (Program Manager)

[A great program manager] can predict various scenarios upfront early on and plan accordingly, [can] really see upfront where things are heading, [identify future] project risks, and be ahead of events. (Program Manager)

4.3.3. Political skills

Political skills, i.e. the ability to balance conflicting interests and communicate program decisions to various stakeholders, constituted another important competence area. High contextual awareness and the ability to foresee the implications of various scenarios were both useful in this respect. One of the most important applications of these skills was to act as a visionary program ambassador, marketing the aims of the program in order to ensure stakeholder involvement:

[The program manager should] be the advocate for change to really push [it] forward, at the same time having the sense for being close to the [program] team, to be close to the receiving organizational units that will benefit from the change, and keep the sponsor and the program board happy. (Program Manager)

[Really good program managers] would be able to communicate about their program in a visionary way, they would be seen as great ambassadors for this change. (Program Manager)

Playing this role required constant attention to differing expectations of the stakeholders and various ways to influence stakeholders for the benefit of the program. The task of balancing interests was far from straightforward and demanded several means:

There was a lot of politics going on in the [unit’s Board] that we had to navigate through. (Program Manager)

We also spent quite a lot of time trying to interpret all decisions that were made, because it was not easy to understand all of them. (Program Team Member)

After each program board meeting, we met with [the communication expert] and brainstormed—how do we apply these decisions and how do we communicate [them] to the others. Because it was so tricky to do it the right way: you have to do it in a right way, you need to say it to the right people, and you need to say it in the right order. (Program Manager)

4.3.4. Courage

As advocates for the heartbeat programs, the program managers sometimes had to stand up and defend, or argue for, their programs and team members. This ability to challenge others, including their superiors, was often emphasized as a managerial competence in relation to the program type. Some
of the interviewees reflected that a spotless track record could be an important prerequisite for this ability, while others emphasized the significance of a well-developed personal network among high ranks as a supporting factor:

[In order to deal with the politics], the primary required [quality] is to have a lot of courage to [dare to] flag [an issue] at all, because you might be stepping on the toes of some people who are much more senior than yourself. (Program Manager)

The program manager must have the strength to challenge the program board. A concrete example is some of the program board members; they want to have everything and that is simply not possible. It must be “okay, you want to have this, what should be prioritized? If we build in this, this will increase risk in this part of the program.” So, you need to hold on tightly to the scope and also to challenge the flood of wishes that will come down to the program. (Program Manager)

Sometimes you might actually have to instruct the program board: “ok, this is your role, this is what we are here to do.” (Program Manager)

[Bad program managers] actually hide away from taking a conflict on behalf of a team member. (Program Manager)

This ability to challenge superiors was regarded as important because of the pivotal role of quick reaction to early ‘weak signs’ as manifestations of misconduct and diverging interests:

What would I have done differently? When I start to get concerned about “this is not looking right” or these signals [that something] is working or not, I would have challenged harder and more quickly today. (Program Manager)

In hindsight, we should have raised that as a major issue early on in the program. (Program Manager)

4.3.5. Networking

If the personal legitimacy of the heartbeat program managers was not enough, a broad and deep personal network in the organization was a necessity. Relying exclusively on formal channels of communication was described as a particularly strong limiting factor for this kind of programs:

We were people who had a very big network in the organization. So we really know who exactly and how to talk to if something goes wrong. (Program Manager)

I used to say you should try to make some friends in corporate management, i.e. senior managers. (Program Manager)

I tested my ideas on the team: which key functions do we need [to get] involved? And then, I just started to call them. It is relatively easy for me since I have a broad network; I know many people and I have many friends. You need to have many friends. (Program Manager)

Building this social relationship outside of the actual formal context: that is really crucial. (Program Manager)

In some cases, the program managers even used their personal networks to influence the choice of an appropriate superior to be appointed as the program sponsor.

I was involved in appointing the sponsor and I understood immediately that this was a program where you need a strong dedicated sponsor. […] There were a lot of discussions between my current direct manager and me: “who can actually take this?” Because for the first person who was proposed, we, both my manager and I, realized that this will not work. So, from the start, we spent quite a lot of time finding the right sponsor, and that goes back to the support of the top management team. We spent a lot of time doing that. Again, that’s a key. (Program Manager)

Overall, effective heartbeat program managers aspired to be “heavyweight” organizational players. The person could not avoid organizational politics and needed to either be an independent political player or have such players as allies. Since these programs usually lacked specific output criteria, close stakeholder involvement helped program managers to shape an overall positive perception of the programs despite some execution drawbacks:

We really made sure that we had the more senior people on board and on the same page, particularly [the name of a senior manager]. We had to make a decision since there had been quite a lot of pressure to deliver within this year and now we are all of a sudden saying: “okay, those four changes, we can’t do them.” We really had to build up a good track record of events and evidence leading to “this must be the right decision to make”; The full program audit was really a good success story. (Program Manager)

When I left, 85% of the projects were on track. For a program like this, that’s quite high actually. So, I would say yes, it was [successful]. What happened over time was that these projects that were successful [were] completed and the difficult projects were obviously delayed and continued, so when you get in to three or four or five years into the program you see the portfolio [of] bad projects, the last 15%. (Program Manager)

I mean there are still remaining projects, but it’s sort of business as usual now, it’s not run by a program. So, I think it was a success. (Program Team Member)
4.4. Synthesis of the findings

Several generic program management competences were important for all the programs studied. However, Table 4 summarizes the distinguishing competence areas that were crucial to meeting the inherent challenges of each specific program type. Based on these findings, we suggest three archetype management profiles for successful program management: the “coordinator,” the “commander,” and the “convincer.”

5. Discussion and conclusion

The purpose of this paper is to explore how various program management competences are associated with successful program management. By inquiring into the management of 10 different programs conducted at the same pharmaceutical company, our findings indicate that there are distinctively different requirements for program management competence profiles between various program types; in this case, the ‘coordinator’ for portfolio-like programs, the ‘commander’ for goal-oriented programs and the ‘convincer’ for heartbeat programs.

These findings challenge the predominant ‘one-size-fits-all’ approach to program management competence and call for more nuanced discussions of the functions and nature of the program management position. The findings are in line with previous research indicating the need for a contingency approach to program management (Arto et al., 2009). However, whereas previous research suggested that program managers varied their leadership styles due to different situations during the life cycle of program execution (Shao and Müller, 2011), the current findings address the way that program management is affected by the type of program to be managed. Assuming that these findings are generally valid, they have several interesting implications for research and practice.

5.1. Implications for research

First, the findings raise questions about how universal a generic program management competence model (e.g. Partington et al., 2005; Pellegrinelli, 2008) can actually be. While acknowledging the value of such models as initial building blocks of what constitutes managerial competence in the context of programs, one implication is that such models need to explicitly encompass specific program characteristics in the future.

Second, in addition to the previously identified significance of external contingencies for program execution (Pellegrinelli et al., 2007; Shao and Müller, 2011), the current findings highlight the importance of program content as a contingency variable that affects the efficacy of program practices and approaches. The few previous studies within the emerging contingency approach on program management have applied a level of analysis of the programs as a homogenous whole. Thus, the emphasis has, so far, been on exogenous, environmental factors, attributed e.g. to program embeddedness as determining effective management approaches (Pellegrinelli et al., 2007). However, the current findings indicate the significance of endogenous factors as well, i.e., how the nature of the tasks that the program is set up to accomplish or the resources involved can affect the program configuration and management approaches needed for program success. Thus, much more attention needs to be paid to the effects of program content in the future.

Third, the program types considered in this paper represent a discrete set of archetypes. However, as discussed in the Methodology section, the categorization process was not always clear-cut. In fact, there seems to be a continuum of intermediate states between the categories. Some programs can even exhibit the characteristics of different program types simultaneously. For instance, large programs can encompass different types of subprograms, and during execution, programs might evolve from one type to another, due both to differences in the nature of various life-cycle phases and to unexpected external events (such as program 7 above). Thus, there is a need for many more inquiries into dynamic models for the fit between program manager profiles and evolving program characteristics.

Fourth, our explorative study makes a modest contribution towards developing a more solid system of program management competences. As an emerging stream of literature, program management competence research needs more empirical inquiries into the role of program manager in different empirical settings. Thus, combining the results of this and similar studies, along with relevant conceptual development by professional associations, such as Individual Competence Baseline, version 4 (ICB4) presently being developed by IPMA, opens up opportunity for building and validating a solid program management competence framework.

Finally, our findings were profoundly influenced by the choice of Pellegrinelli’s (1997) program typology as an analytical framework. Choosing another framework would probably have yielded different results and brought other sets of contingency variables into consideration. Thus, we make no claims that the chosen framework is the only possible way to classify programs or that it is the ultimate one. Nor do we claim that the competence profiles identified in this paper are exhaustive. Thus, this paper does not conclude the discussion on programs and competence profiles of program managers. On the contrary; the current findings should be understood as constituting a starting point for future research; hopefully provoking further inquiries into the complex and diverse nature of the realities of program management.
These considerations prompt a number of specific research directions to further extend our findings. One such direction is to explore the role of specific underlying dimensions or program characteristics that can be instrumental in distinguishing between different program types in order to understand how various competence areas relate to these particular characteristics. Another important aspect is to investigate differences in perspectives of various stakeholders regarding program management competence.

A wider empirical study, or a series of studies, is needed to shed light on these questions. Given the establishment of a solid conceptual framework on program management competence, such studies would be most naturally conducted applying a more deductive approach; addressing a more diverse sample of programs, differing with regard to industrial sectors, specifics of program content and context, as well as stakeholder configuration. A model or a set of models that will result from such studies would allow for a more refined qualification and matching of program managers to particular programs.

5.2. Implications for practice

One obvious practical implication is the necessity to consider the fit between program characteristics and program management competences. Consequently, the findings presented can contribute to useful human resource management techniques for selection, assessment, promotion, and appointment of employees as managers for specific programs. In addition, the findings can also be useful for self-assessment, enabling candidates who wish to make a career into program management by directing their attention to areas in which they might need to improve.

Conflict of interest

The authors declare that the manuscript has not been submitted or published elsewhere. There are no other potential conflicts of interest in regards to this submission.

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