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Most valued PMO functions in a project-oriented Tech Company prior to PMO set up

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Abstract

Purpose: Not all organizations have explored the potential of a PMO to support project delivery. We will use the case of an IT Portuguese company that is evolving into a project-oriented set up to ascertain the perceived value of PMO and associated functions. The goal is to tap into the insights provided by leadership, to determine whether a PMO would be suitable for the company, and which PMO design would be likely to respond to the most pressing internal project management challenges.
Methodology: a case study methodology was used. Data was collected from observation, questionnaires and a focus group session, directed at the leadership layer of the organization (including top leadership).
Findings: a multi-project PMO had not been witnessed often by participants. PMO functions were largely deemed as very important or of considerable importance to the company and were not being adequately compensated by other areas. Control and standardization related functions gathered strong consensus. PMO operational and supportive nature appears to be favored.
Research Limitations: more focus group sessions, targeting mid-level management should be held, and are planned, to determine whether the conclusions corroborate the findings. Also, non-management staff were not included in the study.
Practical Value: companies without PMO in similar contexts can benefit from the example to support PMO creation process, including PMO design and target approach.

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Introduction

Change is now constant, and it has been forcing adaptations in lifestyles, economies, and in the way projects are managed to maximize value for organizations [1] [2]. To take an organization from point A to point B, one will have to resort to projects that support its short, medium, and long-term strategic planning, allowing it to maintain the validity of its value proposition and ensuring its continuity [3].

Nonetheless, projects often fail [4], which can be observed through the systematic low success rate of projects reported by the Standish Group CHAOS reports. In the 2018 version of the report, only 36% of completed projects achieved success [4]. In the academic literature, Budzier and Flyvbjerg [5] found that projects in the United States of America (USA) exceeded, on average, the estimated costs by about 27%, and one in six projects exceeded the original budget by 200%; Lee, Cuellar, Keil, and Johnson [6] argued that information system development projects continued to have high failure rates; and Ham and Lee [7] demonstrated that project complexity has increased and is associated with delays, higher costs, and a decline in user satisfaction.

The consolidation of project management methodologies, supported by the inclusion of Project Management Offices (PMO) in organizational structures, is a common response to improve project performance and success [8].

The limited research on PMO in the Portuguese context, coupled with the lack of consensus in the project management literature regarding PMO value [18][19][4][20][21][22], has raised questions about how to effectively enhance and solidify project management practices in a technology company based in Portugal. This company presently lacks a PMO but prioritizes project delivery as a fundamental aspect of its operations.

The research problem identified is: “To what level can an IT PMO be an important tool to advance project management in a Portuguese tech company, and what functions should it perform?”.

Firstly, a literature review will be conducted, focusing on the treatment of PMOs in both the community of practice and academia. Next, the methodology will be presented, followed by a discussion of the results obtained. Finally, the conclusions, limitations, and contributions of the study will be addressed, followed by acknowledgements.

1. Literature Review

The PMBOK, 7th edition [2], although recognizing significant variability, defines PMO as a management structure that promotes standardization of project-related governance processes and acts as a facilitator of resources, tools, methodologies, and techniques. The concept of PMO has evolved significantly throughout the years, with the progressive realization that practices and functions expected to be performed by the PMO are as varied as the industries and even companies in which they operate [9].

The notion of PMO is a relatively new addition to the project management body of knowledge [9]. In fact, the first edition of the Guide to the Project Management Body of Knowledge, published by the PMI in 1996 [10], does not even mention the concept. The evolution of the approach to the PMO concept and roles in the PMBOK Guides mirrors the road that both the academic and professional communities have travelled in their understanding of the phenomenon.

When analyzing the evolution of PMO in the PMBOK Guides, we can observe that the Project Office was only acknowledged in the Second Edition of the standard launched in 2000[11], but no definition was offered. A definition for PMO is introduced in the Third Edition of the standard [12], however, it is quite prescriptive. In fact, according to this definition, a PMO would necessarily oversee the management of projects and programs in an organization and would observe some key features described in the document. In the Fourth Edition of the standard [13], from 2008, after research on PMO had advanced [14], the diversity of PMO is formally recognized, with the addition of wording that states the form, function and structure of a PMO to be completely contingent upon the needs of the organization that hosts it. This is consistent with the results of a study on the global population of PMO carried out by Hobbs and Aubry in 2007 [14], that was also partly funded by the PMI. The reference to PMO key features disappears. In the Fifth Edition of the standard [15], the categorization of PMO into three different types (Supportive, Controlling and Directive) is introduced, and the PMO definition is reviewed. The PMO is then seen as an organizational unit at the service of the standardization of project management related processes and facilitation of project management resources, including methodologies, tools, and techniques. In the Sixth Edition [16], the wording related to PMO is relatively unchanged from the previous standard, but more mentions to PMO appear throughout the whole document.

In the Seventh and current edition of the standard [2], the document has been totally re-written, going from process-based to principles-based. It is much shorter than the previous version of the standard, however, the wording related to PMO is expanded (with a dedicated Appendix X3), and there are more references to PMO than ever throughout the

document. Several concepts are introduced, such as the PMO Value Proposition, with a focus on value generation and contributions to the achievement of business outcomes. It is clearly stated that PMO should be evaluated based on the value they generate for their organizations. References to the role of PMO in flatter structures, agility driven, appear, and PMO types such as Agile Centers of Excellence (ACoEs) and Value Delivery Offices (VDOs) are introduced.

The academic landmark regarding PMO appears to be the study of 500 PMO, a large sample from diverse regions worldwide, conducted by Hobbs and Aubry [14], that was later consolidated into a book [17]. In this study, a notable finding highlighted the extensive variability and inherent complexity within the PMO phenomenon. Indeed, PMO come in diverse forms, differing in scope, functions, maturity, organizational location, and nomenclature.

The study emphasized that despite the practitioners expressing a desire for it, consolidating a 'best practices standard' akin to the PMBOK guide for PMO was unfeasible. This conclusion arose from the understanding that the best practices are contingent upon what is deemed relevant and useful within the unique context of each organization. In essence, the legitimacy and survival of PMO are intricately linked to the value they bring to their organizations.

Precisely because they vary so much in form and function, their impact and performance is difficult to measure with precision, which makes it difficult to justify the investment they require [9]. In Hobbs and Aubry earlier study [14], a whopping 42% of all PMO surveyed was reported to have its relevance or existence seriously questioned in recent years, with the authors indicating that the reality of PMO in organizations would probably be even worse, due to the positive bias of the respondents.

There is difficulty reaching consensus regarding PMO both in the academy and in the community of practice. In the meantime, practitioners advocate for PMO implementation through “how-to” guides, claiming it is a best practice, without substantiating their claims with peer reviewed studies. The PMO has become a commodity [9].

However, some studies suggest a positive impact of either the PMO or PMO functions on project performance, in the organizations that host them [18] [19] [4].

In the IT industry especially, some studies seem to advocate for the benefits of establishing PMO. Despite the lack of empirical evidence to support the benefits of PMO creation, Liu and Yetton [20] conclude that deploying PMO could have a significant impact on project performance if one is operating in high uncertainty environments, such as IT, since several PMO functions facilitate cross-project learning.

In a study encompassing testimonies from 40 major private Brazilian companies [21], including 32 CIOs, almost all the 20 companies that declared having an IT PMO disagreed with the statement that they were considering terminating their IT PMO. In this study, the variables “(Dis)satisfaction with control over the portfolio” and “Favorable views of PMO” correlated significantly with an adequate context for the setup of IT PMO. This appears to indicate that the perception of lack of control over the company’s portfolio sets the ground for a favorable context to set up an IT PMO with positive outcomes.

In the opposite sense, Lundqvist [22] examined the IT public sector landscape in Sweden and concluded that IT PMO did not appear to be as important after all for Swedish public authorities, when carrying out successful IT projects, as the existence of a PMO correlated only (medium strength correlation in Cohen’s scale) with 7 out of the 71 variables that represented good project management practices. The 7 variables related to usage, understanding and support of methodologies, PM competence, PMO involvement in business value realization and quality of sponsorship. As such, the author concludes that PMO cannot be seen as a miraculous remedy to fix every problem related to project management, and that it is important not to make decisions based on an overestimation of PMO’s impact.

Ward and Daniel [25] also reported a detrimental effect of PMO presence on IT senior leadership satisfaction, due to increased intolerance regarding project issues or challenges, when the investment has been made to create a PMO.

It is worth mentioning that Liu and Yetton [20] selected only high-performing companies from Australia, which does not provide a comprehensive picture of how all PMOs operate [9]. Spelta and Albertin [21] focused on large companies with annual revenues ranging from hundreds of millions to several billions of USD, which are not project-oriented, while Lundqvist [22] examined only the public sector. Ward and Daniel [25] targeted respondents from 55 different IS companies (mostly in the UK), not specifying if they were project oriented or not, and 69% of those companies already had PMO. None of these studies offer a precise comparison to the current case.

2. Methodology

The selected company is a medium-sized technology provider, with approximately 150 to 200 employees. Based in Portugal, it has been in business for several decades, delivering systems to both Portuguese and international

corporate clients. While Portuguese clients traditionally represent most of its business, the company is increasingly strengthening its international client portfolio. The annual revenue is in the tens of millions of USD.

This article follows a case study methodology [23]. The research used three different methods to collect data: (i) direct observation, (ii) a questionnaire and (iii) a focus group. This fulfilled the requirement imposed by Yin [23] to prevent bias in the study by triangulating sources. The goal was assessing the professionals' views on PMO and its functions, through a questionnaire (quantitative phase) and a focus group (qualitative phase), including the leadership of the organization. Observation was used to gather contextual information regarding the company, stakeholder motivation and political tensions that could influence stakeholders' responses.

The categories of analysis were mixed. The initial phase was inductive (quantitative) to infer existing notions regarding PMO and its associated functions. This was followed by a deductive (qualitative) phase to confirm the outputs of the questionnaires during a focus group session.

The questionnaire, submitted to quantitative analysis, contained a small text in which the concept of a multi-project PMO was explained to the respondents. Two main questions were asked:

- From your perspective, how important are the following roles or functions in a PMO mandate customized to fit your current company's needs? (27 functions were listed based on [14])
- Are there any other functions/roles that you would consider important for a PMO to execute?

In the first question, the 27 potential PMO functions outlined in the study conducted by Hobbs and Aubry in 2007[14] were presented to the respondents, which they were asked to grade in a scale of importance (going from 0-Not important at all to 4-Very Important), considering the current needs and challenges faced by their organization.

The leadership layer of the organization is composed of 29 people, excluding the CEO. Out of these, 22 people were invited to respond as they were directly connected to project delivery. Only 17 valid responses were obtained.

After the questionnaire, a focus group session was held to discuss the findings. The session lasted for 1 hour and 30 minutes and included six participants: two C-level executives and four directors. These individuals were selected to represent the highest hierarchy within the company and belonged to multiple areas of the organization, all connected or impacted by project delivery. Another focus group session with mid-level management and Project Managers has been deemed relevant and is planned to occur in the next steps of the investigation.

3. Discussion of results

3.1. Quantitative Phase - Questionnaire Results

Out of 22 participants invited, 17 valid responses were obtained, which amounts to 77% response rate. Indeed, 15 (56%) out of the 27 functions scored 3 or higher on the importance scale, and were deemed to be, on average, either of Considerable Importance or Very Important for the organization, given its current challenges. No function scored lower than 2 – "Of Some Importance", in average. This suggests that there is a favorable view of PMO across the leadership layers of the referenced company, and that there is an organizational resolve towards enhancing project management maturity. Table 1 details the top 5 most valued PMO functions, ranked according to their average score.

Table 1. Detail of Top 5 most valued PMO functions

Rank	1	2	3	4	5
	Monitor and control project performance	Develop and implement a PM standard methodology	Conduct post-project reviews or postmortems	Coordinate between projects	Monitor and control the performance of the PMO
Average	**3,71**	**3,59**	3,29	3,29	3,24
Median	4	4	4	4	3
Mode	**4**	**4**	**4**	**4**	3
Std Deviation	0,47	0,62	0,85	**1,05**	0,66
Q1	3	3	3	3	3
Q3	4	4	4	4	4
Min	3	2	2	**0**	2
Max	4	4	4	4	4

When determining the ranks, the average was used. If two or more functions shared the same average perceived importance results, the standard deviation was used, as it indicated consensus around a particular PMO function.

The 12 (44%) remaining functions scored either 2,94 or lower. The lowest score obtained by any PMO function was 1,94, corresponding to "Identify, select and prioritize new projects".

As per the Table 1, there are two functions that gather very high scores, with generalized consensus: "Monitor and control project performance" and "Develop and implement a PM standard methodology", with scores of 3,71 and 3,59 respectively. The almost unanimity of the top scores related to the monitoring and control functions could imply that this is a field that leadership strongly feels needs to be reinforced. This echoes Spelta & Albertin study [21], that concluded that "(Dis)satisfaction with control over the portfolio" and "Favorable views of PMO" were key variables that set the ground for a PMO implementation, with positive outcomes.

The standardization of project management related processes and implementation of a standard methodology comes second, which also demonstrates the will to advance in process maturity. The function "Conduct post-project reviews or postmortems" scored 3.29, which suggests that organizational learning is very much a concern for leadership. The "Coordinate between Projects" function scored 3,29, but had a big standard deviation, due to a respondent that scored it as 0 – Not important at all. As the pool of respondents is quite small (N=17), this alone is capable of skewing results. Even so, the function made the TOP 5, because most respondents scored this function as 3 or 4. The "Monitor and Control the Performance of the PMO" function comes in at 5th place in terms of importance, indicating leadership would favor a regular review of PMO performance.

Table 2 details the results obtained by the functions that ranked between 6th and 10th place in the scale.

Table 2. Detail of 6th-10th most valued PMO functions

Rank	6	7	8	9	10
	Implement and manage a database of lessons learned	Report the status of projects to upper management	Provide Mentoring for Project Managers	Recruit, Select and Evaluate PMs	Execute specialized tasks for PMs, e.g. preparation of schedules, risk analysis, project recovery
Average	3,24	3,18	3,06	3,06	3,06
Median	3	3	3	3	3
Mode	**4**	**4**	3	**4**	3
Std Deviation	0,75	0,95	0,83	**1,09**	**1,14**
Q1	3	3	3	3	3
Q3	4	4	4	4	4
Min	2	**1**	**1**	**0**	**0**
Max	4	4	4	4	4

The results of the PMO functions that scored between the 6th and 10th positions of the ranking, suggest that the tendency towards the favoring of knowledge brokerage functions and information dissemination is affirmed (lessons learned management, report status to upper management, PM mentoring), as suggested by the high ranking of the Conduct post-project reviews function (Top 3). The 9th and 10th ranked functions have higher standard deviations and lower minimum scores, which could indicate these functions would not gather enough consensus to be included in an initial PMO model proposition.

Regarding the second question, when asked: "Are there any other functions/roles that you would consider important for a PMO to execute?", the respondents provided the following answers: "Quality control", "Facilitating negotiations/prioritizations among internal areas of the company, given the challenges of projects and scarce shared resources", "Focus on and for all programs/projects: Develop and implement a PM standard methodology; Coordinate between projects: enable optimal utilization of resources" and "The PMO could support tools and partner selection within projects".

The resource scarcity issue is referenced in the written comments, but the direct resource allocation function scores lower on average (coming in at 19th place with an average score of 2,88), with a standard deviation of 1,11 and minimum score of 0, which indicates less consensus. This is reinforced by the written response to the 2nd question, that states "to facilitate negotiations/prioritizations among internal company departments" versus to directly decide

on resource allocation. Indeed, if a facilitating role between the different departments is preferred, then the PMO would not directly allocate resources from a pool, according to its own judgement, which appears consistent with the previous matrixed nature of this company. The authors observed that the company is evolving to a more project-oriented nature, but there are still natural tensions between the resource managers versus the project managers. The former still maintain some of the resource allocation prerogatives.

3.2. Qualitative Phase – Focus Groups

At the opening of the focus group, a summary of the results obtained in the questionnaire was presented and some questions were asked to the participants:

- Question: Why has a PMO never been created in the company?

Director 1 - "Creating a separate organic PMO? There have never been dedicated resources for that… It seems like there hasn't been the will or recognition. The importance of a potential PMO hasn't been understood yet."

There were references to single project/program PMO established in the past, but no multi-project PMO. One participant was inclined to believe that some of the PMO functions outlined in the top 5 most valued were being done in some internal departments, but this was promptly contradicted by other participants:

Director 1 - "Sort of. I'd say we're not quite there yet. (…). We once tried to develop templates, common practices... but it never really became autonomous."

This first question prompted a discussion in which it became apparent that there was some confusion regarding the PMO concept and that its outlines were not yet fully understood by all the senior leadership. Overlap of multi-project PMO concept with department that groups project managers or single-program dedicated unit were manifest.

Director 2 - "(...) historically, I only saw PMO in things of enormous relevance that were programs..."

It would appear then, that part of the reason why a PMO was never established within the company is the fact this was not something that was witnessed by most of the participants during their careers, as it may not be very common in the Portuguese tech landscape. By not being exposed to multi-projects PMO, some of the participants did not have a full understanding of the concept, and, in consequence, could not have championed such an initiative. The concept of multi-project PMO was explained in the questionnaire phase and reminded to all participants in the focus group.

- Question: How are the Top 5 functions being executed now in the organization, if at all?

"(...) Director 1 - No, clearly, they are not being done...", "(...) Director 2 - Oh, but no, we're not doing everything... In fact, we're doing very little of what's listed here, even... (laughter)", "*C-Level 1 - I would say the part we do worst is the Coordination between projects...".*

From the feedback obtained, it seems apparent that not all the functions are being performed, if at all, apart from the responsibilities assigned to the Project Managers. There is however widespread consensus in senior leadership that we should advance in each of those areas, especially the drive towards project management processes standardization: *"Director 2 - The standardization of the methodology is one of the initiatives that came out of the latest feedback from people, that this is an issue in the organization (...) when we (...) asked for feedback from people, this is a point with enormous, enormous strength.", "C-Level 1 - I agree, and I couldn't agree more. (...)".*

The aspects linked to capture and dissemination of knowledge, all the way since project set up, were reinforced during the session, by multiple participants, including C-levels: *"C-Level 2 – We should do that more, that is one of our problems (...)"; "Director 1 - (...) having a PMO that takes care of (postmortems and lessons learned) could be very interesting. To share among projects, right? (...) to ensure the capture and dissemination of the knowledge (...).*

The role anticipated for a potential PMO appears to be of a supportive nature: *"Director 1 - a PMO can be very important in setting up a project (...) to ensure people are following the right methodologies, that we adjust the methodology (...), that we align everyone from the beginning, and that we also set up these data collection and dissemination structures, and that we bring into discussions what we have already learned from other projects. (...)."*

An overall very positive outlook regarding the functions of a PMO comes across during the discussion, as all participants explicitly agree with the participant that stated: *"(...) Director 1 - there are a lot of virtues in having a PMO working from the beginning side by side with the PM, in that support perspective".* The number of times the terms "support" or "help" are mentioned (19 times) far outnumbered the references to "control" (6 times).

Regarding the scope of application, the question prompted a discussion regarding the need to extend PMO functions scope application to internal client projects, as well as external client projects. The discussion eventually led

to a consensus that external and internal projects should be under the scope of a PMO, but that external projects should be prioritized if there are capacity issues.

As most companies face multiple projects, and must decide on resource allocation, this topic is also a concern for the senior leadership and taps into the inter-project coordination function. The leadership felt that a useful PMO role would be as a facilitator, or conflict-resolution center providing support for resource allocation conflicts within projects. This support should be provided in the way of a discussion enabler, information gathering and data consolidation provider for PMs and upper management. Leadership felt very strongly that the PMO should not make resource allocation or other very important decisions by itself: *"Director 3 - (it should be) a technical support, and in essence, it's someone who ensures that whoever needs to decide has all the information if there's a decision to be made regarding resource allocation when there's a conflict of interests (...) It should not decide alone"*. Controlling and directive natures for future PMOs appear to be discarded.

One subject that appeared often during the discussion as a concern was the topic of accountability. In fact, senior leadership affirmed that introducing a PMO type structure could not hinder the fact that the ultimate responsibility for project monitoring and control falls on the Project Manager's shoulders: *"C-Level 1 - (...) In other words, the PM has a very specific accountability for the project, right? Responsibility cannot be diffuse; it cannot be in an office..."*.

It is worth noting that despite the positive outlook by senior leadership on PMO presence, the study by Ward and Daniel [25] found that PMO presence correlated negatively with leadership satisfaction. Therefore, it is crucial for a PMO, if established, to closely monitor senior management satisfaction levels to ensure its legitimacy and survival. Additionally, when comparing the most valued PMO functions in this case to the findings in the Lundqvist study [22], we see that only project management practices related to the usage, understanding, and support of methodologies correlated with PMO presence. Although participants in this study highlighted the desirable role of the PMO in reinforcing communication and cooperation during the focus group, PMO presence did not significantly correlate with any communication and cooperation-related best practices in Lundqvist's study. These considerations are important to bear in mind when establishing a potential PMO in this company and during the post-implementation stage.

4. Conclusions, limitations, future work, and contributions

Overall, the results indicate that there is consensus that a lot of the PMO functions (as per Hobbs and Aubry [14]) would generate significant value for the organization and could help with many current project management challenges. Whilst some PMO functions gather widespread consensus, others do not – as an example, the function pertaining to the direct allocation of resources by the PMO. The functions that do not gather widespread consensus would not be good candidates for a first iteration of the PMO. A supportive/operational nature for a potential PMO also appears to be favored, as opposed to a controlling or directive one. Indeed, in the focus group, there have been several mentions of a supportive PMO, working alongside the Project Managers and senior leadership, helping to achieve the business outcomes.

PMO exist in a continuum, where "light" configurations, including supportive and knowledge brokering roles are at one end of the spectrum, and "heavy" configurations, where the PMO has direct responsibility for the outcome of projects, are at the other end of the spectrum [24]. These results suggest that an incremental approach to building on PMO capabilities (starting with a PMO-light configuration) should be the way to move forward. Singh, Keil and Kasi [24] also found that "light" and supportive PMO were more likely to be implemented successfully.

As for the research problem identified: "To what level can an IT PMO be an important tool to advance project management in a Portuguese tech company, and what functions should it perform?", the answer is: the results suggest that a supportive/operational PMO, charged with process standardization, knowledge brokering and information dissemination functions (a blend of top 5 and top 10 functions) is deemed by the whole leadership as a potentially very important tool. It appears there could be favorable ground [21] to proceed with a PMO Model proposition and set up recommendations, which will be the next steps of the investigation.

As limitations, we can highlight the fact that more focus group sessions, targeting mid-level management should be held, to determine whether the conclusions corroborate the findings in the session directed at senior leadership. It could also be useful to extend the exercise to non-management staff, provided they are experienced in project delivery.

We hope that this research can provide insights for the company in question, and for other companies grappling with the same issues, in their road to a high-performing and mature project management discipline. We also hope to

foster discussions on the topic in Portugal and abroad and contribute to enhancing the recognition and promotion of project management as a central axis for economic development, both in the public and private sectors.

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References

[1] Kerzner, H., Vargas, R., Zeitoun, A. (2022) Project Management Next Generation: The Pillars for Organizational Excellence, 1st Edition, ISBN 9781119832294, Wiley & Sons Inc., Hoboken, New Jersey

[2] Project Management Institute. (2021) "The standard for project management and a guide to the project management body of knowledge", 7th ed., Project Management Institute, Inc.

[3] Project Management Institute. (2017) "The standard for project management and a guide to the project management body of knowledge", 6th ed., Project Management Institute, Inc.

[4] Prado, E. P. V., & Correio, M. M. (2023). PMO e o sucesso em projetos: um estudo sobre empresas brasileiras de grande porte. AtoZ: novas práticas em informação e conhecimento, 12, 1 – 11.

[5] Budzier, A., & Flyvbjerg, B. (2011). Why your it project might be riskier than you think. Harvard Business Review, 89 (9), 23–25.

[6] Lee, J. S., Cuellar, M. J., Keil, M., & Johnson, R. D. (2014).The role of a bad news reporter in information technology project escalation: A deaf effect perspective. ACM SIGMIS Database: the DATABASE for Advances in Information Systems, 45 (3), 8–29.

[7] Ham, N., & Lee, S. (2019). Project benefits of digital fabrication in irregular-shaped buildings. Advances in Civil Engineering, 2019, 1–14. doi: https://doi.org/10.1155/2019/3721397

[8] Joslin, R., Müller, R. (2015) Relationships between a project management methodology and project success in different project governance contexts, International Journal of Project Management

[9] Darling, E. J., & Whitty, S. J. (2016). The Project Management Office: it's just not what it used to be. In International Journal of Managing Projects in Business (Vol. 9, Issue 2, pp. 282–308). Emerald Group Publishing Ltd. https://doi.org/10.1108/IJMPB-08-2015-0083

[10] Project Management Institute. (1996) "The standard for project management and a guide to the project management body of knowledge", First ed., Project Management Institute, Inc.

[11] Project Management Institute. (2000) "The standard for project management and a guide to the project management body of knowledge", 2000 ed., Project Management Institute, Inc.

[12] Project Management Institute. (2004) "The standard for project management and a guide to the project management body of knowledge", Third ed., Project Management Institute, Inc.

[13] Project Management Institute. (2008) "The standard for project management and a guide to the project management body of knowledge", Fourth ed., Project Management Institute, Inc.

[14] Hobbs, Brian., & Aubry, Monique. (2007), A multi-phase research program investigating project management offices (PMO): The results of Phase 1, Project Management Journal

[15] Project Management Institute. (2013) "The standard for project management and a guide to the project management body of knowledge", Fifth ed., Project Management Institute, Inc.

[16] Project Management Institute. (2017) "The standard for project management and a guide to the project management body of knowledge", Sixth ed., Project Management Institute, Inc.

[17] Hobbs, Brian., & Aubry, Monique. (2010). The project management office (PMO): a quest for understanding. Project Management Institute.

[18] Dai, Christine & Wells, William. (2004). An exploration of project management office features and their relationship to project success. International Journal of Project Management - INT J PROJ MANAG. 22. 523-532. 10.1016/j.ijproman.2004.04.001.

[19] Santos, V. & Varajão, J., 2015. PMO as a Key Ingredient of Public Sector Projects' Success - Position Paper. Procedia Computer Science.

64, 1190–1199.

[20] Liu, Li & Yetton, Philip. (2007). The Contingent Effects on Project Performance of Conducting Project Reviews and Deploying Project Management Offices. Engineering Management, IEEE Transactions on. 54. 789 - 799. 10.1109/TEM.2007.906852.

[21] Spelta, A. G., & Albertin, A. L. (2012). Project Management Offices in the IT Area: A Context–Discriminant Model for their Establishment. Information Systems Management, 29(1), 40–54. https://doi.org/10.1080/10580530.2012.634296

[22] Lundqvist, Siw. (2017). Are PMO really that momentous for public authorities? IJISPM - International Journal of Information Systems and Project Management. 5. 45-64. 10.12821/ijispm050303.

[23] Yin, R. K. (2018). Case Study Research and Applications: Design and Methods (6th ed.). Thousand Oaks, CA: Sage

[24] Singh, Rajendra & Keil, Mark & Kasi, Vijay. (2009). Identifying and overcoming the challenges of implementing a project management office. EJIS. 18. 409-427. 10.1057/ejis.2009.29.

[25] J. Ward and E. M. Daniel, "The role of project management offices (PMOs) in project success and management satisfaction," Journal of Enterprise Information Management, vol. 26, no. 3, pp. 316–336, 2013.