

ARE YOU MATURE ENOUGH TO CREATE A PROJECT MANAGEMENT OFFICE?

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Abstract: *Despite the increasing number of organizations opting to establish and implement Project Management Offices (PMOs) to enhance competitiveness and efficiently manage extensive project portfolios, they continue to encounter challenges in realizing the benefits of PMOs. The goal of this research paper is to explore the application of Project Management Maturity Models (PMMM) as a tool to identify organizational areas in need of performance improvement following the implementation of Project Management Offices (PMOs). By utilizing PMMM, we aim to gain valuable insights into the effectiveness of PMO implementation and to propose strategies to address performance gaps within organizations. The paper focuses on examining how a selected PMMM is applied to evaluate PMOs in the Transport & Logistics sector. To gain in-depth understanding of the selected Transport & Logistics company, the research employed a case study approach. Results show that there are substantial benefits of implementing PMO within the Transport & Logistics sector. The collected data is utilized to provide useful recommendations for future application of PMMMsm in analyzed industry. These insights could assist project and strategic managers in reorganizing their operations to improve project management practices, thereby enhancing project success rates and overall business performance.*

Keywords: *Project Management Office, Project Management Maturity Model, Transport & Logistics*

1. INTRODUCTION

In today's fast-moving and challenging environment, organizations need to develop systems to keep their competitive edge (Ferreira, 2019). To do this, companies handle a large number of projects and have started implementing Project Management Offices (PMOs) into their structure to better manage these projects (Pellegriinelli & Garagna, 2009). Interestingly, even medium and large-sized organizations now have a PMO (PM Solutions, 2022). Research indicates that presence of PMOs can consistently improve project success, for example Correia et al. (2018) demonstrated project quality can be enhanced by about 25%. PMOs are valuable because they help organizations manage projects more efficiently, with reports indicating that three out of four PMOs provide a more structured approach for project managers (Ichsan et al., 2022).

PMOs can help companies reduce or eliminate problems and weaknesses in their organizations (Kostalova & Tetreva, 2018). To achieve higher performance, organizations have to develop a deeper understanding of their deficiencies. Application of Project Management Maturity Models (PMMM) can help those companies to do so. PMMMs are used as tools to facilitate organization's assessment and outlining of exact maturity level of project management competences that were developed over time (Christoph & Konrad, 2014). Literature review performed by Gareeb and Rwelamila (2021) for period from 2000 to 2019 identified 60 PMMMs. However, maturity models cannot be used as universal for all types of industries (Grobler & Steyn, 2006).

The role of project management, specifically logistics project management, is increasingly recognised as an important topic in the Transport & Logistics sector (Hartel, 2022). The reason is industry's growing complexity and the need for efficient project execution. Global logistics market was valued at \$8.4 trillion in 2021 and is projected to surpass \$13.7 trillion by 2027, highlighting the sector's rapid expansion and the vital role of effective project management in sustaining this growth (Placek, 2023).

De Souza and Gomes (2015) found that while PMMMs are widespread in the information technology sector, their adoption in all other industries is noticeably lower. Although projects are integral to the Transport & Logistics sector, the general notion is that there is still lack of awareness about benefits of PMOs (Saedi, 2019). Literature review shows the scarcity of studies and documentation needed to understand and articulate the value of potential PMO implementation benefits and appropriate PMMM choice for Transport & Logistics industry which shows rapid growth.

This study is focused on following research questions:

- (1) Do Transport & Logistics companies need a PMO and how should it be implemented?
- (2) Which PMMM is appropriate and applicable for Transport & Logistics companies?

The paper is structured in five segments. Literature review provides understanding of research concepts that were used in the study and research findings other authors have previously discovered. Research design gives insight into chosen company and applied methodology. Research results and discussion present collected data and interpretation of results. Conclusion focuses on main findings and contribution of the paper. Limitations and future directions acknowledge study constraints and guidelines for further research.

2. LITERATURE REVIEW

2.1. Project Management Office

Project Management Office (PMO) has been defined by Project Management Institute as „organizational structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques“ (PMI, 2017). PMO focuses on providing support to project managers and their teams, and to functional segments of organization, to achieve higher level of company's efficiency and effectiveness (Oliviera & Martins, 2020). PMO is described as an entity aiming to further develop and enhance project management competences and it represents a connecting point between organization and its projects (Khoori & Hamid, 2020).

According to PMI (2017), there are three types of PMO: supportive, controlling and directive. Supportive PMO has a consultant role in which it does not have authority to give orders. Its role is reflected through systematization and securement of standardized project templates, access to needed data and promotion of best practices. This PMO has the lowest authority level upon projects and project teams. Controlling PMO has a consultant role, but it has authority to control the extent to which some of the standardized methods and project templates are being implemented. Directive PMO has direct control over all organizational projects, and it directly manages and is responsible for successful project execution. This PMO type has the highest authority level over project governance (PMI, 2017).

Project management office should be viewed as dynamic structure, rather than static, since it helps exceed particular problems a dynamic organization faces (Aubrey et al., 2010). PMO can reach full potential only if organization understands that this entity makes progress in terms of its evolution over time and that its context needs to be acknowledged (Aubrey et al., 2008). Regardless of PMO type, PMO focuses on minimizing odds for organization to make same mistakes that have already been made. That is why PMO is considered as a key component in process standardization and knowledge transmission. Today, numerous organizations are implementing such entity in their businesses, while some companies have more than one PMO in their organizational structures (Müller et al., 2013). However, the process of implementing a PMO is not as simple as it may seem at first glance. To choose an appropriate form and create long lasting PMO, organization needs to assess which project management maturity level it has reached.

2.2 Project management maturity model

The Project Management Maturity Model (PMMM) is a framework that indicates the level of proficiency an organization has reached in terms of project management competencies. These models assist organizations in determining and assessing their maturity level and help pinpoint strengths and weaknesses, enabling them to define necessary actions to enhance their overall project management capabilities (Kostalova & Tetreva, 2018). In project management, "maturity" refers to achieving successful project execution through established procedures and demonstrated consistency in project delivery over time (Anantamula & Rad, 2018). The maturity model serves as a guide for a company to assess its existing organizational processes by comparing them to recognized best practices (Silva et al., 2021). According to Kerzner (2019), defining project management maturity requires considering factors such as the industry the organization operates in and whether the organization is project oriented.

During literature analysis, various PMMMs were discovered. Research conducted by Gareeb & Rwelamila (2021) found there are 60 various PMMMs in the literature for the period 2000-2019, such as CMMI, OPM3, IPMA Delta, P3M3, NPM3, PMMMsm, SPM3, Prado's P2M3, Kerzner's KPMMM, MMM etc.

Simagunsong and Da Silva (2013) conducted research on widely used PMMMs across various industries, focusing on models like CMMI, PMMMsm, PM2, and ProMMM. Their findings indicated that PMMMsm, PM2, and ProMMM are suitable for project-driven organizations, whereas CMMI is better suited for the software industry. Their analysis revealed that PMMMsm and PM2 both feature five maturity levels, whereas ProMMM has four. PMMMsm and PM2 align with PMI's knowledge areas, unlike ProMMM. Further, PM2 focuses solely

on project management processes, while PMMMsm includes both project and program management processes (Nikolaenko & Sidorov, 2023; Fabbro & Tonchia, 2021). Based on these insights, this research aims to determine the relevance and applicability of PMMMsm for dynamic and fast-paced organizations in the Transport & Logistics industry.

2.3 PM Solutions project management maturity model

PM Solutions PMMM (PMMMsm) is a model that combines project management knowledge areas defined by PMI and five levels of maturity (Domingues & Ribeiro, 2023). PMMMsm allows a systematic review of project management maturity for different organizational aspects. Each maturity level features a certain point of standardization and application of patterns. This can be understood through Figure 1 (Miller, 2004; Vergopia, 2008).

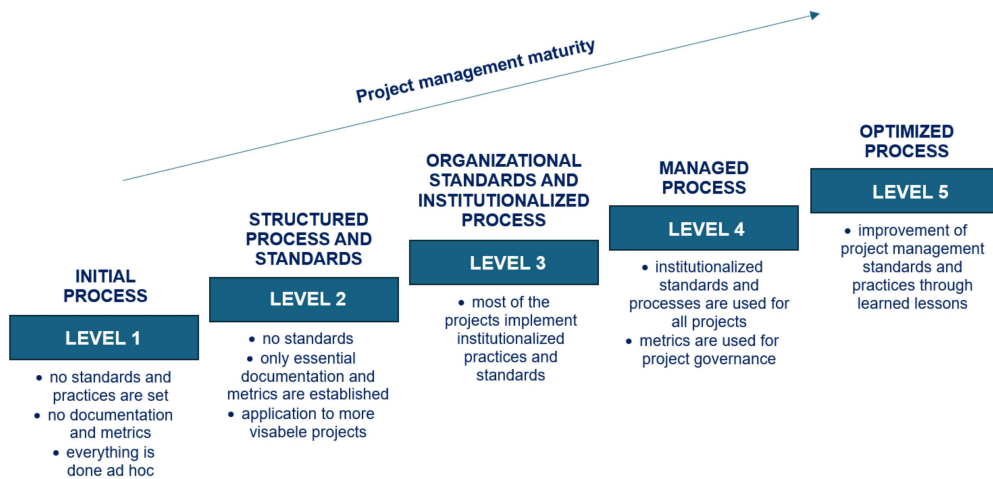


Figure 1: Levels of PMMMsm

This model has been widely used for maturity level analysis because it comprehensively covers knowledge areas defined by PMBOK, through a predefined scale. Pennypacker & Grant (2003) set this model as the basis for their research, which focused on defining industry PM maturity level and included 123 respondents. Miklosik (2015) applied this model through his research for purpose of determining and understanding project management maturity in 25 information and communications technology (ICT) companies which are present in Slovakia. It was used by Göçmen Polat (2021) as a foundation for maturity evaluation of a company from logistics industry, in terms of sustainable project management.

3. RESEARCH DESIGN

The aim of this study is to analyze the specific case of PMO implementation in Transport & Logistic company using selected project management maturity model. The sample company was selected as the regional leader with PMO overseeing more than 60 projects annually. This company was chosen for its exemplary performance in business innovations and efficiency in logistics operations, making it an ideal subject for studying the impact of PMO practices. With over 60 projects managed annually, the company's PMO provides a robust environment to assess the maturity and effectiveness of project management practices. Additionally, projects span various domains within transport and logistics, offering a comprehensive view of PMO capabilities across different types of initiatives.

The research employed a case study approach as a methodological framework to acquire a comprehensive understanding of the research subject, encompassing both theoretical and practical perspectives (Ebneyamini & Sadeghi Moghadam, 2018). The questionnaire utilized in the case study was based on PMMMsm and encompassed a hybrid approach, incorporating both qualitative and quantitative data collection methods. For quantitative data collection, Likert scale ranging from 1 (one) to 5 (five) was employed. Overall, this comprehensive approach allowed for a rich exploration of the research subject, capturing not only numerical data but also qualitative insights, opinions, and perspectives.

The questionnaire was structured in five sections. The first part of the questionnaire provides insights into general information and how the organization observes its projects, whether they are perceived and selected individually or placed within a broader strategic context. The second part of the questionnaire focuses on determining the foundational project management approach applied by the company. The third part of the

questionnaire aims to assess the project management maturity level across six areas: integration, scope, time, cost, quality, and resources. The fourth part of the questionnaire focuses on determining the implementation status of a PMO and further analysis of its functions. The fifth part of the questionnaire considers the presence of project management software solutions.

Analysis procedure included data interpretation, member checking and writing final report. First, data were interpreted and critically reviewed within the framework of the research objectives and theoretical perspectives. Second, the findings were reviewed by company member to ensure they accurately reflect their experiences and perspectives. Finally, the findings are synthesized and presented in a clear manner in the research report presented in the following section.

4. RESEARCH RESULTS AND DISCUSION

The data collected using the questionnaire demonstrates that the selected company undertakes sixty projects in average on an annual basis, which are assessed as moderately complex. The value of these projects ranges from several hundreds to several millions of dollars. Projects are initiated internally as development projects and externally as a business and operational need. The average duration of project is around half a year. All projects are subject to rigorous analysis in portfolio context through prioritization process, using criteria defined by the company's PMO.

The company uses both traditional and agile approach and as a result project scope is defined at the beginning or further as the project progresses. Agile approach is applied when client requirements are unstable and prone to repeated changes. Project phase execution is carried out only once, which is inherent for traditional approach. Project success is assessed against project goals and desired levels of client satisfaction.

Project management maturity levels in defined areas are assessed as follows: integration management – level 1, scope management - level 1, time management level 4, cost management level 1, quality management level 1 and human resource management level 3. Figure 2 gives a systematic view of achieved maturity levels.

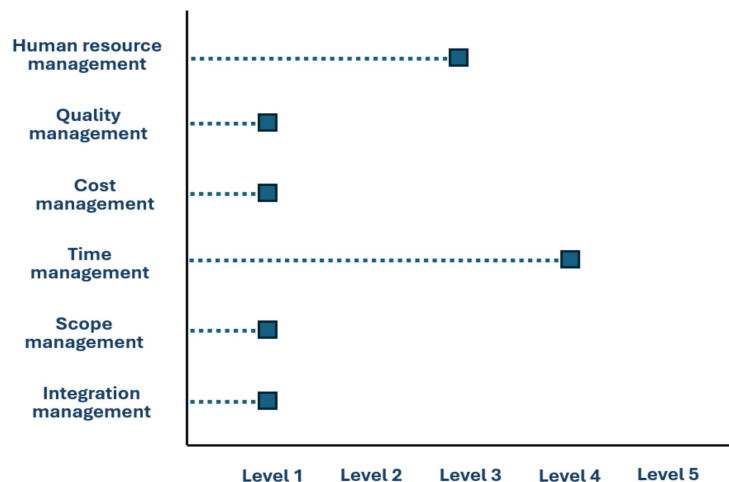


Figure 2: Maturity levels based on project management knowledge areas

In the selected company PMO is responsible for establishing processes, tools, methods, and patterns, as well as overseeing application monitoring. PMO does not hold any authority to manage projects and make decisions. The PMO is only involved in deciding whether an initiative is seen as a project or not. However, individual project executions require approval from higher management. The existing PMO provides access to tools and information while also overseeing the implementation of defined patterns. Project team members have responsibility towards their functional and PMO managers. The members of project teams show a lower level of awareness and consider adopted patterns and standards unnecessary to deliver value to the customers. This is due to the lack of project management competencies and experience in a project environment. In critical situations, PMO lacks decision-making authority. Currently PMO does use a software tool for improving portfolio management.

It can be stated that the company is prioritizing project portfolio management to create suitable combinations of projects and is implementing a hybrid project management approach. The company recognizes that the

potential benefits of portfolio management outweigh those achievable through individual project management alone.

Based on the PMMMsm, the company predominantly exhibits a lower level of maturity, except in the time and human resource knowledge areas. This indicates that the company places greater emphasis and priority on these aspects. Greater PM maturity developed in human resource segment can be explained through labor shortage and fluctuation noticed in logistics and supply chain industry in the Serbian market (Kilibarda et al., 2019). On the other side, time and cost became highly demanding factors for logistics industry (Mishra, 2018), which shows why the company focused on improving time management within project management, yet still reaches lower maturity level in cost management.

The company has implemented a controlling PMO type. The decision was taken to effectively handle a large volume of clients and development projects. Furthermore, the company introduced a single PM software solution to support its project management efforts. Key benefits highlighted included intuitive interfaces and a high level of functionality, enabling employees to manage their work and project progress through a single platform. An important advantage that was emphasized is the user-friendly perspective, which made it easier for employees to adopt and transition to this solution (Yamada, 2023). Additionally, the company could consider adopting other software solutions which could contribute to the further improvement of portfolio management.

5. CONCLUSION

The paper consisted of two main segments which are literature review and the case study from the industry. The answer to the first research question regarding implementation of PMO shows that Transport & Logistics companies need to develop PMO for governing a high number of complex projects (SCM Concept, 2014). To implement PMO in a successful way, Transport & Logistics companies basis needs to be considered and understood attentively. These companies undertake two types of projects: first group represents project for external and second group projects for internal needs. They conduct projects for clients and projects for business development purposes. In other words, Transport & Logistics companies execute business core projects and projects aiming technological development. Both of these are equally important yet have completely different nature. For that reason, they cannot be treated the same, but rather require patterns, methods and processes tailored according to their characteristics. Based on this research, it is proposed that Transport & Logistics companies establish two separate PMOs (Müller et al., 2013). One office would focus on core business projects, while the other would concentrate on fostering consistent technological advancement through projects. Thereafter, both PMOs must separately define appropriate patterns standardized for each project group.

The answer to the second question regarding appropriate PMMM for Transport & Logistics companies was demonstrated through conducted case study and showed that PMMMsm can successfully be applied for evaluation of these companies. This model does not give just perfunctory insight, but rather thorough and in-depth maturity level analysis. For companies that belong to such highly dynamic and technologically intense industry, it is immensely important to identify areas that have not been developed to an appropriate degree and based on that take further needed action (Domingues & Ribeiro, 2023), which is what they can comprehend and infer through PMMMsm.

This research showed that a Project Management Office (PMO) could simplify project management in the Transport & Logistics sector. The study also identified PMMMsm as the most suitable and useful model for this sector. These research results serve as a guide for project and strategic managers in the Transport & Logistics sector in making decisions about potentially restructuring the organizational structure to enable better project management and greater project success, ultimately leading to improved business outcomes for the entire company.

6. LIMITATIONS AND FUTURE DIRECTIONS

The scope of this research is limited by the small number of companies included. Future studies should examine more companies internationally for broader insights. Another limitation represents the number of knowledge areas that have been examined. Based on initial PMMMsm, six knowledge areas were considered through this study, but in the future research, all of the areas should be encompassed. Furthermore, expanding the study to include and validate multiple Project Management Maturity Models could deepen the research significantly.

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