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Project Management Office Models – a review

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Abstract

Organizations are facing competitive and globalized markets, as well as constant environmental changes that often require an organizational restructuring of the business models in order to boost performance. Project management practices can help to achieve strategic goals and increase value of projects in organizations. The Project Management Office (PMO) is an organizational structure created in order to promote and improve project management practice, by adopting appropriate methodologies to achieve high levels of efficiency and effectiveness. In recent years several models and functions of PMO have been proposed by many authors, varying from the PMO with a sole function of reporting project execution, to the one who participates in the definition of organizational strategies. The main purpose of this article is to present a review of the typologies of PMO. Since the importance of PMO is increasing in organizations, the results of this work are useful to provide guidance to organizations on implementing or restructuring their own PMO.

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1. Introduction

Organizations are under increasing pressure from the external environment, which demands constant innovation in products and services in order to obtain competitive advantage and meet the needs of customers. To remain competitive, today's organizations adopt project management practices, defined as the application of knowledge, skills, tools, and techniques to meet the requirements and objectives of the projects by implementing appropriate processes and methodologies, as part of their strategy and as a critical factor in the development of competitive advantages [1].

As the number and complexity of projects in the business world has increased, the need for centralized project coordination functions has also grown. Good project governance for project management comprises the value system, responsibilities, processes, and policies that allow projects to achieve organizational objectives in the highest interests of all the stakeholders, internal and external, and the corporation itself [2]. Many organizations implement projects that are not managed according to a formal project management methodology and instead apply *ad-hoc* processes with weak outcomes. Seeking to solve this problem, in recent years new structures have emerged in some organizations, such as the Project Management Office, in order to improve project execution and avoid wasting resources.

A Project Management Office is “an organizational body or entity who are assigned various responsibilities related to the centralized and coordinated management of those projects under its domain. The responsibilities of the PMO can range from providing project management support functions, to actually being responsible for the direct management of a project” [3]. Due to the importance of PMO in project management and strategic alignment with business, many models have been built around the typology and functions of PMOs.

For many organizations defining the PMO role is a struggle, along with its position for long-term-success and the way for it to leverage the PMO support achievement of the organization's strategic objectives [4]. With the growth of project management environments, multi-project or strategic PMOs have emerged to develop competence in project management, manage single project performance, and coordinate multiple projects [5]. The survey conducted in 2007 by Hobbs and Aubry, of 500 PMOs found considerable diversity and lack of consensus regarding the roles and terms that should be included in the structure of a PMO [6].

This research is a contribution to finding a better characterization of PMO. Organizations that are currently considering implementing a PMO, or redesigning an existing one, may here find information leading to a better definition of the PMO models to adopt in their organization. According to Kerzner [7], PMOs have been improved as part of an organizational structure in our modern enterprises and “could be the most important project management activity in this decade”.

This article begins with a discussion of the importance of project management for organizations in obtaining the best delivery of products or services to gain competitive advantage. Section two explains the concepts of PMO proposed by various researchers. The methodology used for identifying PMO models and further analysis and description of these is presented in Section three. Section four addresses what is meant by PMO model, and we then introduce the various PMO Models that are found in literature. Finally, the article concludes with an analysis of models of PMO and suggestions for future research.

2. Project Management Office (PMO)

The need for timely response to market changes, customer demands, and technology improvements leads organizations to develop their skills [8]. Knowledge and understanding of project management has grown and organizations recognize the importance of project management for business development [9]. One effort in organizational project governance is the establishment and incorporation of a new entity, the PMO [10], which may appear either alone in an organization or as multiple PMOs, charged with different project governance tasks, scope of activities, and authorities [11]. The PMO is thus a unit or department, in matrix organizations or in project-based organizations, for developing of methodologies and institutionalizing project management practices [7]. According to Desouza & Evaristo [12], PMO is an exercise to customize and sustain the practices, methods, techniques, and tools in organizations. Dai & Wells [13] describe PMO as an organizational unit that provides project managers, project

teams, and functional managers with access to the principles, practices, methodologies, tools, and techniques that are used for efficient and effective project management.

The fundamentals of the PMO concept are not especially new. The project office associated with engineering, aerospace, and defense type projects, emerged in the 1950s as the scale and complexity of projects increased [12]. However, it was not before the 1990s that this concept truly expanded into the forms we see today [13]. Some of this growth is attributed to Y2K projects, but more recently growth seems to have been driven by a desire to gain better control of project risks, standardize the use of project management methodologies, tools, and techniques, improve the monitoring of project performance, and manage and disseminate knowledge of sound project management practice, especially in Information Technology (IT) [12].

Over the last decade many organizations have implemented one or more Project Management Offices as part of organizational project management, attributing a variety of operational, tactical, and strategic roles to their PMOs [14]. At an *operational* level, a PMO provides basic centralized support to individual projects and ensures professionalism and excellence in applying widely accepted principles and preferred project management practices to each project [15]. At a *tactical* level PMO services provide further added value through multi-project coordination and the management of cross-project dependencies. This may include resource integration across projects and ensuring that project management disciplines are adhered to. Finally, the *strategic* PMO involves all aspects of an operational and tactical PMO and is also equipped with the authority to prioritize projects in relation to corporate objectives and strategies and advise senior management on the viability of project investments [12].

3. Method

This section presents the research design, data collection methods, and analysis approaches in order to address the following research question: RQ1 - What models of PMO are currently proposed by the researchers and practitioners?

To identify earlier research we performed several *ad-hoc* queries using databases and search engines provided by well-known publishers. In addition, we performed some general searches using Google Scholar. These searches made it clear that relevant articles have been published in a variety of journals. We found that the Project Management Journal, International Journal of Project Management, International Journal of Information Systems and Project Management, PM World Journal, and Information System Management, for example, have published articles bearing upon the research question. Some results point us to books as well.

We therefore decided not to concentrate on particular journals, but to search the following databases available to us, which were:

- Web of Science (<https://webofknowledge.com>);
- Scopus (<http://www.scopus.com>);
- Elsevier Science Direct (www.sciencedirect.com);
- Emerald (www.emeraldinsight.com);
- ACM Digital Library (portal.acm.org/dl.cfm);
- Taylors Francis Online (www.tandonline.com).

We used the following terms and synonyms in our queries:

- “project management office”;
- “pmo type”;
- “pmo model”;
- “pmo typology”;
- “pmo typologies”;
- “pmo framework”;
- “pmo functions”;
- “pmo roles”;
- “organizational project management”;
- “project management maturity”;
- “project governance”.

In the first inclusion criterion, the articles were selected for further analysis mainly on the basis of the title and the abstract. After the articles had been identified we eliminated duplicate titles that were obtained in more than one search engine. For this we used the software Mendeley.

All titles and abstracts were read in order to remove the articles not related to the scope of this research, which resulted in 66 selected articles. However, the abstract did not always provide enough information to decide whether the article included relevant information or not. Often, the only way to decide whether an article was useful was to read the full article. Related to the books selection, we first read the table of contents to decide if it was useful to explore the full content.

The second inclusion criterion was applied during the full reading of the articles, resulting in 25 articles. The thematic analysis method [16] was used to synthesize the data extracted from the primary studies. This method is used in qualitative research and is composed of three phases: pre-analysis; material exploration; and results treatment and interpretation.

4. PMO models

Many books and articles about project management have been published in recent years, with some of them promoting the implementation of PMOs. Analyzing these works produces an image of PMOs characterized by variation in the name, structure, roles assumed, and perceived value.

Different authors have proposed models to classify the major services offered by a PMO [25]. The descriptions of PMOs in the literature are often summarized in typologies comprising few models. The most common typologies have three to five types, in which each type is a model of a PMO. Any model is necessarily a simplification and a reduction of the complexities of organizational reality. Models are very useful, even necessary, to support both research and practice.

The PMO model, in general, is a type of business-oriented organizational structure that supports the enterprise's business strategy and business development, and describes the rationale for how a project-portfolio management organization, project-program management organization, and/or project management organization – collectively PMOs – initiate, create, capture, and deliver value within an enterprise. Overall, it is an organizational structure design based within and upon both project management and business management [17].

In the following subsections we present several typologies of PMO models found in the literature, making a brief description of the characteristics of each.

4.1. Typology 1: Englund, Graham & Dinsmore (2003) [18]

Englund, Graham & Dinsmore (2003) [18] propose three PMO models. The first, *Project Support Office*, provides internal consulting for project management activities, such as planning and scheduling, project management tools, and document management. The second, *Project Management Center of Excellence (PMCOE)*, includes functions aimed more at assuring up-to-date methodologies and skills in project management, such as standardization of processes, identification of best practices, and training. The third is *Program Management Office*, which promotes complete authority over the projects and responsibility for recruiting and developing project managers, project selection, and alignment of priorities with the business strategies.

4.2. Typology 2: Kendall & Rollins (2003) [19]

Kendall & Rollins (2003) [19] propose four PMO models. The *Project Repository Model* emphasizes tools and data. This model assumes that the enterprise has adopted a cohesive set of tools for project design, management, and reporting. The *Project Coaching Model* is an extension of the *Repository Model*, and provides training, mentoring, and other assistance to project managers. The *Enterprise PMO* oversees the project management and function, assuming a governance of project that will involve the EPMO in all projects regardless of size. Finally, the "*Deliver*

Value Now”, provides focus on the total project portfolio linked to the organization’s goals and assets. It is guided by full executive support.

4.3. Typology 3: Garfein (2005) [20]

Garfein (2005) [20] proposes four models of PMO. The *Project Office*, which provides data to a higher level PMO or other oversight authority for consolidation. The *Basic PMO*, which develops a process and criteria for project selections, and compiles performance data from multiple projects. The *Mature PMO*, which aligns projects with business strategy, and implements a process for assessing and allocating resources, and develops methods for prioritizing projects. And the *Enterprise PMO*, which enables real-time project data in decision making and creates an overall capacity of the project portfolio management.

4.4. Typology 4: Letavec (2006) [21]

Craig Letavec (2006) [21] proposes three models. A *Consulting PMO* addresses the project management needs of the organization primarily through mentoring and promotes a sense of project management community in the organization, and is responsible for day-to-day management of projects. The *Knowledge (Strong) PMO* serves as the central project and program management body in the organization, exerts significant influence over the standards and processes that govern the projects in the organization, and plays the role of a knowledge organization maintaining project libraries, lessons-learned, and building organizational best practices in the project management. The *Standard (Blended) PMO* provides consulting services, training, and standards-setting activities and is often regarded as a center of expertise for project management in organizations. Its role across organizational boundaries is to identify best practices and to implement standards and tools for the benefit of the entire project community.

4.5. Typology 5: Desouza & Evaristo (2006) [12]

K. Desouza & R. Evaristo (2006) [12] have identified four PMO models. The *Supporter* serves primarily as an administrative function by providing project status, identifying risks and potential issues, and maintaining project archives. The *Information Manager* function is to track and report the progress of the projects with the aim of serving as a source of information about projects and consolidating update status. The *Knowledge Manager* is a repository of the best practices, providing project expertise, mentoring, and training. It is recognized by the authority of organization in knowledge related to the project management. The *Coach* emphasizes improvement, excellence, and responsibility to enforce the project management of the organization.

4.6. Typology 6: Gartner Research Group (2008) [22]

In his first research on the PMO in 2002, Gartner reported three different types of project Models (*Repository*, *Coach*, and *Manager*). In 2008 Gartner made an update and proposed five models instead of three. The *Project Support Office* is a formal organization established to support the needs of the community of project managers, providing simple cycle life support and hands-on project assistance on resourcing, scheduling, and scoping. The *Project Management Office* is a centralized control seeking to establish a consistent baseline of processes, adding formalized project tracking and reporting. The *PMoCE* model focuses on increasing the efficiency of investing in people through mentoring, upgrading skills, and sharing tacit knowledge between project managers. The *Federated* PMO consists of a corporate PMO and a number of Unit/Division PMOs in which the corporate PMO takes responsibility for methods, training, and tools while the Unit/Division PMOs are directly responsible for project reporting, oversight, and delivery. The *Enterprise* PMO has the role of reporting and oversight of major company initiatives and can be expanded to a strategy support office with responsibility for scenario planning and strategic analysis.

4.7. Typology 7: Hill (2008) [23]

G. M. Hill (2008) [23] proposes five PMO models that represent a progressive advance and competency of the functionality in project management. The *Strategic Office* provides the capability to ensure professionalism and excellence in applying widely accepted principles and preferred project management practices to each project effort. The *Basic PMO* is the first PMO whose level deals with multiple project oversight and controls the ability to provide aggregate oversight and control of multiple projects relative to the performance of multiple project managers. The *Standard PMO* introduces centralized oversight and control, and supports the project management environment, seeking to implement project management as a core business competency. The *Advanced PMO* is the “big brother” of the *Standard PMO*. Its focus is integrating the business interests and the objectives into the project management environment, creating a “projected” business environment. The *Centre of Excellence* has a focus on strategic business interests across the organization, having direct access to the chief executive officer, and providing directions to influence the company’s project management operations.

4.8. Typology 8: Kerzner (2009) [7]

H. Kerzner (2009) [7] proposes three models of PMOs. *Functional* is used in one functional area or division of an organization, such as information systems. The major responsibility of this type of PMO is to manage a critical resource pool, that is, resource management. The *Customer Group* is for better customer management and customer communications. Multiple customer group PMOs can exist at the same time and may end up functioning as a temporary organization. This type of PMO will have a permanent project manager assigned to manage projects. The *Enterprise* or *Strategic Model* serves the entire company and focuses on corporate and strategic issues rather than functional issues. If this type of PMO addresses management projects, it is for cost reduction efforts.

4.9. Typology 9: Crawford (2011) [1]

J. K. Crawford (2011) [1] presents three different models of PMO. The *Project Control Office* typically handles large and complex single projects. It is specifically focused on one project, but that one project is so large and so complex that it requires multiple schedules, which may need to be joined into an overall program schedule. The *Business Unit PMO* is to manage a large number of multiple projects of varying sizes, from small short-term initiatives that require few resources to multi-month or multi-year initiatives requiring dozens of resources, large investments, and complex integration of technologies. It also provides a much higher level of efficiency in managing resources across projects and identifying the priorities of projects. The *Strategic PMO* considers an organization with multiple business units, multiple support departments, and ongoing projects within each unit. Only a corporate-level organization can provide the coordination and broad perspective needed to select and prioritize projects that will engage better strategic support by tracking projects and programs that contribute to support strategic and corporate objectives.

4.10. Typology 10: Unger, Gemünden & Aubry (2012) [5]

Unger, Gemünden & Aubry (2012) [5] introduce three models of PMO. The first is *Supporting*, which involves providing services to project members and project leaders during project implementation, including activities to train and motivate project management standards and operations within the organization. The second, *Controlling*, involves information management to deliver input in decision making, including gathering, preparing, and providing information as well as suggesting corrective measures. Third is *Coordinating*, which includes project appraisal, selection, cross-project support, crossing-department coordination and coaching parties to improve collaboration between stakeholders.

4.11. Typology 11: Project Management Institute (2013) [24]

The Project Management Institute (2013) [24] proposes five PMO Models. The *Project Specific* provides project-related services as a temporary entity established to support a specific project or program. *Business Unit PMO* provides a project-related service to support a business unit including the portfolio management, the operational project support, and human resources utilization. The *Project Support Office* uses the governance of processes, practices, and tools established by the organization, and provides administrative support for delivering the project. The *Enterprise PMO* is responsible for aligning project and program work to corporate strategy, establishing and ensuring appropriate enterprise governance, and performing portfolio management functions to ensure strategy alignment and benefits realization. The *Centre of Excellence* supports project work by preparing the organization with methodologies, standards, and tools to enable project managers to better deliver projects.

4.12. Typology 12: D. L. Bolles & D. G. Hubbard (2015) [17]

D. L. Bolles & D. G. Hubbard (2015) [17] propose five PMO Models. The *Project Office* (single project) and the *Project PMO* (major project), which we have grouped into *Project Office/PMO*. This Model provides management of a single, mission-critical or major project, develops project operational plans and budgets, and authorizes adjustments. Control reports up-date progress and maintain project documentation. The second model is *Project Support Office*, which provides administrative support to one or more non-complex and report projects, providing project controls. The *Division PMO* and *Business Unit PMO* we have grouped into a *Division/Business Unit PMO*, which provides project business management across the organizations, manages portfolios, and oversees programs. The *Enterprise PMO* provides project business management on an Enterprise-wide basis, overseeing division and business unit PMO, project selection, and prioritization. Finally, the *Project Management Centre of Excellence* (PMCoE) establishes and implements project business management standards, methodology, practices, education, training, and project management competency on an enterprise-wide basis.

4.13. Discussion

We identified 47 models in the literature review. However, some names of the models are common across different typologies, reducing the number to 25 unique model names. Table 1 shows the PMO models proposed by the authors in a consolidated perspective. The columns, sequentially and chronologically ordered, identify the authors/typologies.

In Figure 1 there is a rank of the models, according to the number of typologies where they were identified. The models *Enterprise PMO*, *PMoCE*, *Project Office*, and *Project Support Office* are the most common in the typologies.

Table 1 – PMO Typologies/Models

PMO Models	Authors/Typologies										
	Englund, Graham & Dinsmore (2003) [18]	Kendall & Rollins (2003) [19]	Garfein (2005) [20]	Letavec (2006) [21]	Desouza & Evaristo (2006) [12]	Gartner - Fitzgerald (2008) [22]	Hill (2008) [23]	Kerzner (2009) [7]	Crawford (2011) [1]	Unger, Gemünden & Aubry (2011) [5]	Bolles & Hubbard (2015) [16]
Project Repository	x										
Project Coaching	x										
"Deliver Value Now"	x										
Mature PMO		x									
Consulting PMO			x								
Knowledge PMO			x								
Standards PMO			x								
Information Manager				x							
Knowledge Manager				x							
Coach				x							
Standard						x					
Advanced						x					
Functional							x				
Customer Group PMO							x				
Federated PMO					x						
Project Support Office	x				x				x	x	
PMoCE	x				x	x			x	x	
Program Management Office	x				x				x		
Supporter				x					x		
Enterprise PMO	x	x			x		x	x			x
Project Office		x				x			x	x	
Basic PMO		x				x					
Business Unit PMO								x	x	x	
Controller								x	x		
Coordinator									x		

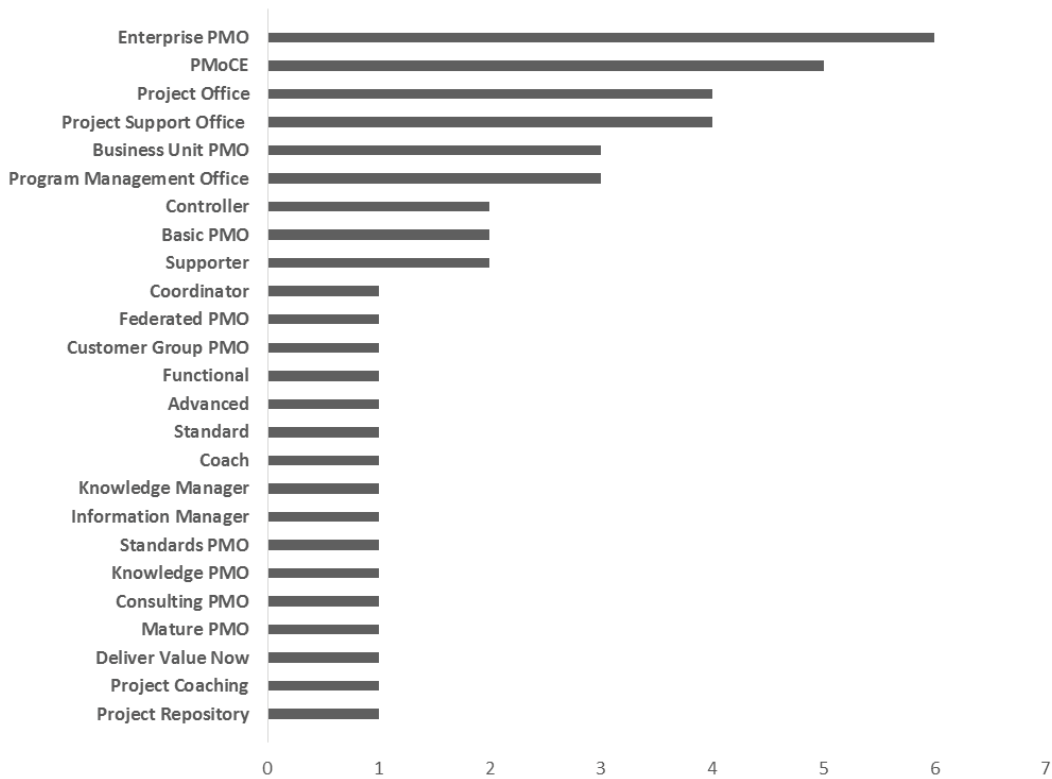


Figure 1 – PMO Models, ranked by frequency in typologies

5. Conclusion

We have analysed several PMO models found in literature. The results show that the structures, roles, functions, and descriptions of PMOs vary considerably from one source to another. In fact, authors establish a great variety of different PMOs. We have identified a total of 47 PMO Models in the literature review, but some models share the same names, reducing the number of unique models to 25.

All authors propose three, four, or five PMO models. In many cases, the position of a PMO within a hierarchical organization (strategic, tacit, or operational) establishes its degree of authority, acceptance, adoption, and autonomy, for defining, distributing, and supporting project management practices somewhere within the enterprise. The progression of a PMO seems to follow an incremental path from a low decision level to a high level.

In this article we limit data presentation to snapshots of current PMOs. We are aware that more advanced analysis is needed and it is already planned for the next step of our research. For instance, no effort was made to identify similarities of the functions that are integrated into each model presented herein. This analysis will be developed in future work and will help to merge some of the proposed models.

Future research will provide insights into the following three questions:

- What are the main functions that each model presents?
- What is the relationship between them?
- Based on a deep characterization of the PMO models that were presented in our research, is it possible and/or useful to develop and suggest a new PMO unified typology?

The current research provides an up-to-date image of PMO Models, characterized by a variation in the structure of PMOs, the roles assumed by PMOs and the perceived value of PMOs. This research can be used by an enterprise as

the basis of knowledge when creating new organizational project management structures or changing existing ones to drive and achieve business value.

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