

A Framework to Establish a Project Management Office

Hanadi Salameh

School of Economics and Business Administration, Al-Zaytoonah University, Jordan

E-mail of the corresponding author: hanadis@hotmail.com

Abstract

This research presents a framework of the needed steps and process to establish a successful Project Management Office (PMO). This framework is driven by the different functions and roles that may be performed by a Project Management Office (PMO) as well as the type of PMO that would best serve organizations. Significant gains can be achieved by using the proposed framework. This framework is driven by the implementation of PMOs best practices that drives PMO success as well as the prevention of all pitfalls that lead to most PMOs failure.

Keywords: PMO framework, PMO success, project management office, project management, PMO, establish PMO, PMO start process

1. Introduction

Several organizations have established a project management office (PMO) to ensure successful management and support of projects in their organizations. PMOs provide a wide range of functions spanning from designing and maintaining project procedures to strategic selection and initiation of projects to aligns them with organizational vision and objectives (Kerzner, 2009; Project Management Institute [PMI], 2008). The evolution of the PMO as a concept and important entity in organizations has continued to evolve since the early days in the U.S. Air Corps; later, the U.S. Air Force used PMOs to assist in monitoring and controlling aircraft-development projects during the World War II and Cold War periods (Benson, 1997). Currently, PMO consists of well-established concepts in organizations.

Achieving PMO success is difficult. Although some researchers have adhered to its importance in project success (Hurt, and Thomas, 2009; Aubry, Hobbs, Müller, and Blomquist, 2010), Stanleigh (2006) found that 75% of PMOs in the information-systems and technology domain shut down within 3 years of formation (Stanleigh, 2006). Presently, no globally defined standard or model to define the structure, steps, or outline of PMO formation exists. This research introduces a PMO framework intended to guide practitioners as to how to establish a new PMO and ensure its success.

2. Definition of Project Management Office

Various definitions of PMO and its implementation have been presented. According to PMI (2008), a PMO is an organizational body or entity assigned various responsibilities related to the centralized and coordinated management of those projects under its domain. The responsibilities of the PMO span from providing project-management support to being responsible for the direct management of projects (PMI, 2008). Kwak and Dai (2000) defined PMO as an entity that consists of full-time employees providing managerial support, administrative, training, consulting, and technical services. Other researchers referred to PMO by different names such as project-support office (Bolles, 1998; Murphy, 1997), project-management center of excellence (Ibbs & Kwak, 2000), and project office (Whitten, 2000); moreover, some authors tried to meet the PMI definition of PMO and some entities were given names such as Project Office (Kerzner, 2003; PMI, 2004, p. 17), Centre of Excellence (Hill, 2004, p. 50), Centre of Expertise (Dai & Wells, 2004, p. 524), or PMO (Rajegopal, McGuin, & Waller, 2007, p. 27). Pellegrinelli and Garagna (2009) defined PMO as organizational constructs created in response to perceived needs whose relevant value decreases as the need decreases. Some authors noted that a universal definition for PMO is not possible due to the difficulty in customization of individual PMOs to fit all organizational needs (Desouza & Evaristo, 2006, p. 415).

3. Why Have a Project Management Office?

As the number and complexity of projects throughout the business world has increased, the need to have a centralized project-coordination function has increased commensurately. The popularity and expansion of PMOs among organizations appears to be related to this increase (Dai & Wells, 2004). Consequently, organizations are increasingly implementing PMOs.

In 1994, the Standish Group found that only 16% of projects were successful in time, budget, and technical specifications (Crawford, 2001). In follow-up research in 1998, the group observed an increase in the success rate of projects from 16% to 26%. Among reasons offered for the improved success rate was the enhanced use of project management and standard project procedures as a consequence of the implementation of the PMO. According to the State of the PMO 2010 survey, 84% of organizations are currently implementing PMOs in their

organizations, a jump of 36% from the year 2000 (PMI, 2012). Organizations with PMOs report more projects completed on time, in budget, and meeting business goals. According to PMI's 2011 *Pulse of the Profession* Survey (PMI, 2012), PMOs help reduce the number of failed projects, delivering projects on or under budget, improving productivity, delivering projects on or ahead of schedule, and increasing cost saving. Furthermore, PMOs add value by monitoring project-performance governance, providing training, and setting or defining standards (PMI, 2004). As companies realize their strategies are being achieved through projects and therefore it's critical to have a way to manage these projects, PMOs have gained popularity (Hurt & Thomas, 2009, p. 55). Furthermore, PMOs coordinate multiple projects across an organization, act as mentors or centers of best practices, and improve project-management capabilities in an organization (Hobbs & Aubry, 2007).

4. Types of Project Management Offices

Authors classified PMOs in different ways, some as broad functional groups (Dai & Wells, 2004; Hill, 2004; Hobbs & Aubry, 2007) whereas others attributed its importance to the role it plays developing organizational project-management maturity (Hill, 2004). PMI (2013) identified five PMO frameworks. In a survey conducted by PMI (2013), 53% of the surveyed participants said the types listed below either perfectly or partially matched the PMO in which they work. Classifications are considered to be more relevant to professional practices as they are driven by the type of PMO functions and scope of integration in the organization.

1. Organizational Unit PMO/Divisional PMO/Departmental PMO. This type of PMO provides project-related services to support business services or units. As the most dominant type, 54% of organizations having a PMO entity reported having this type, mostly found in the fields of information technology (IT), consulting, and telecommunication organizations (PMI, 2013).
2. Project Support/Control Office PMOs provide enabling processes to continuously support management of projects work throughout the organization. Of PMO practitioners, 44% reported having this type of PMO in their organization (PMI, 2013). This type of PMO is found in the organizations in IT, government, and manufacturing.
3. Enterprise PMOs are the highest-level PMO in organizations having one, responsible for aligning projects and programs to corporate strategy, establishing and ensuring appropriate enterprise governance, and performing portfolio management functions to ensure alignment with strategy and benefits (PMI, 2013). This type of PMO is found in government, manufacturing, and energy organizations.
4. Center of Excellence PMOs provide the organization with methodologies, standards, and tools to enable project managers to deliver projects successfully. In addition, this type of PMO ensures organizational success through good practices, tools, and processes. As the central point of contact for project management in the organization, 35% of PMO practitioners reported having this type of PMO function (PMI, 2013)
5. Project-Specific PMOs provide project-related services to a temporary entity established to support a specific project or program; 31% of PMO practitioners reported having this type of PMO function in their organization (PMI, 2013)

5. Functions of the Project Management Office

Although PMO's functions and services may vary depending on the organization's size or objectives (Kwak & Dai, 2000), many researchers defined the major responsibilities of a PMO, ranging from providing project-management support to direct management of a project (PMI, 2004, p. 369). Bates(1998) and Frame and Block(1998) summarized PMO functions around project support, developing and enforcing standards and methods, and project management training and mentoring. According to the PMI *Pulse of the Profession* (2013), a PMO can provide the organizations it serves with wide range of functions. The nature of service a PMO provides is driven by the type and scope of the PMO. Below is a list of functions a PMO may provide and perform.

Standards, Methodologies, and Processes

This function focuses on project-management methodology definitions, metrics definitions, process development, and improvement.

Project/Program Delivery Management

This function includes project resource management; project schedule, cost, or scope management; project risk management; stakeholder management; communications; and project integration.

Portfolio Management

Portfolio management includes project prioritization, strategic alignment, portfolio reporting, resource-management allocation according to project prioritization and organization strategically objectives, opportunities and investment analysis, risk management, and benefits realization tracking and reporting.

Talent Management

This function pertains to training; career paths and development; capability and skills development; and certifications, qualifications, and credentials.

Governance and Performance Management

Governance and performance management are focused on an organization's performance reporting, issue escalation, information distribution, metrics and key performance indicators, compliance, financial management, and PMO performance management.

Organizational Change Management

This function focuses and addresses customer and stakeholder satisfaction, managing resistance, readiness assessment, stakeholder management, and communications.

Administration and Support

Administration and support revolve around tools provisioning, implementation, and support. In addition, the PMO can provide a consulting and IT/information systems support role in proof of concepts, selection, contracting, and implementation.

Knowledge Management

The knowledge-management functions is used to define knowledge-management policies, managing intellectual collateral and property, lessons learned, content management, and collaboration.

Strategic Planning

Strategic planning relates to confirming strategic priorities, defining business goals and aligning to initiatives, environmental scanning, and opportunity analysis.

6. Steps to Establishing a Project Management Office

The PMO process must be treated as a project in itself with planning, execution, monitoring, and control processes, as illustrated in Figure 1. In addition, it is essential to identify the objectives and goals of the PMO to be established, its stakeholders, scope, and timeline. Establishing early alliances and drawing a PMO charter, communication plan, and transition and execution plans to embed the new PMO in the existing organization are also equally important.

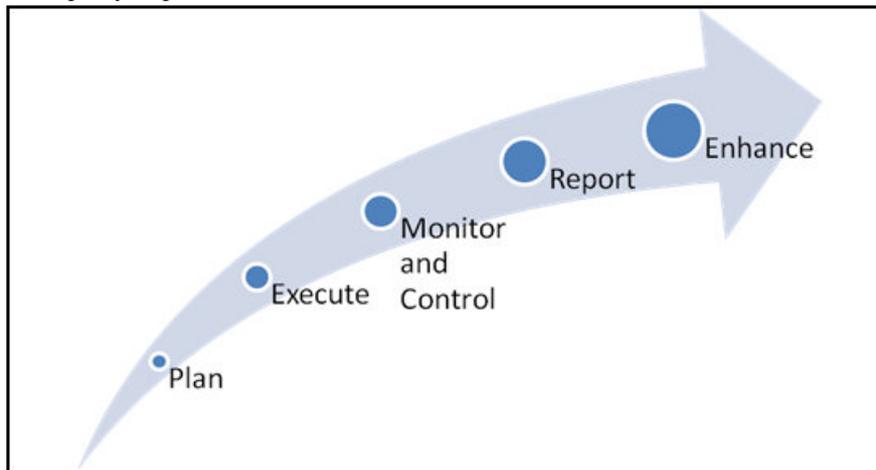


Figure 1. High level Phases of Establishing a Project Management Office.

In this research, a framework of 12 steps or aspects deemed necessary to establish a successful PMO is proposed; each step should ensure achieving one or more of the requirements and deliverables that are acknowledged through best practices as necessary to establish a successful PMO. They are summarized in Figure 2 and detailed hereafter.

1. Understand Organization Definition of Success

Most PMOs mistakenly focus only on defining methodology, processes, and templates without first focusing on understanding the organization's vision, strategic goals, business objectives, culture, and departmental interdependencies and relationships (Millhollan, 2009). By aiming to understand, PMOs can determine the path to best implement and facilitate effective and efficient project-management methodologies, tailored to the organization strategy and objective. Aligning project-management methodologies and processes to organizational strategic objectives is not only important to ensure PMO policy effectiveness, but also is crucial in ensuring vital senior-management support for those policies and procedures.

2. Define the Mission, Objectives, and Strategy of the PMO

The PMO mission is a general statement that aligns the PMO with the value it provides to the organization. It describes what the PMO does, how it is done, and for whom (TenStep, 2010). An example of a PMO mission

statement is “The PMO will enable the organization to deliver projects on budget, on time, and with higher quality, leading to more organizational efficiency and higher customer satisfaction.” PMO strategy defines, at a high level, the process and roadmap to achieve the PMO mission. The strategy also focuses on how to achieve the long-term objectives of the PMO, how to make organization project-management practices more successful, the reason for establishing a PMO, the functions it should provide to the organization, and the types of services or gaps the PMO should fill. The PMO mission and strategy must align with and support the organization’s mission and strategy. It is incorrect, for instance, for a company to set up its PMO success criteria around budget when the organization’s overall focus is

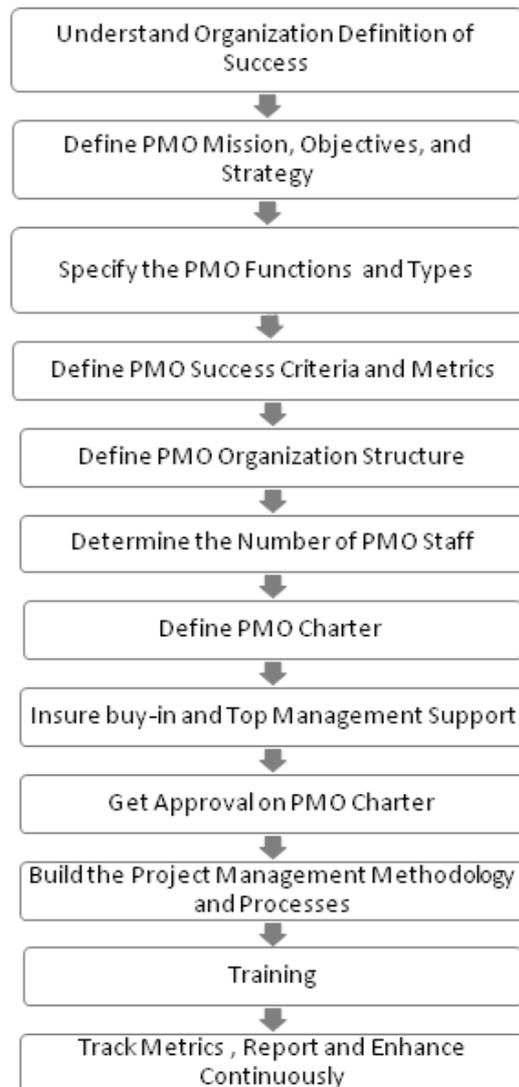


Figure 2: Proposed PMO framework

innovation. For example, at IT giant Google, delivering cost-effective and timely projects is important, but not as important as coming up with cutting-edge thought leadership (PMI, 2012).

In defining its mission, vision, and strategy, the PMO should focus on short-term tactical objectives and on long-term strategic objectives. Short-term objectives should be attainable within relatively short periods of time to ensure quick triumphs and success stories to increase PMO support in the organization and encourage its value in the future. For instance, a tactical objective of the PMO might be to standardize project-management methodology and project or portfolio-delivery management. Long-term strategic objectives evolve to address project or portfolio governance, change, and talent management. The key to success in this challenging endeavor of establishing a PMO is to start with simple goals that are easy to attain to maintain momentum and encourage long-term success.

3. Specify the PMO Functions and Types

PMOs can vary based on their organizational context, structural characteristics (such as where the PMO is located in the organization), and roles or functions. First, define the type of service and objectives expected of

the PMO. Looking at the Table, all PMO types provide the service of defining standard project-management methodologies and processes, project program delivery, and administration support. As the scope of the PMO function increases in the organization, the more strategic and enterprising role it takes. For instance, the Enterprise PMO focuses on strategic aspects of organizations and how to align and prioritize project portfolios with the organization's strategy and objectives.

Simple, straight forward types of PMOs are more effective, with whose scope and services limited to a specific project, portfolio, or department. As the maturity of project management practices increase in the organization, managers can navigate to a more mature and sophisticated type of PMO such as Enterprise or Center of Excellence PMO. The Table matrix maps each PMO type with its expected functions, driven by the feedback of several hundred PMO professionals surveyed in the *PMI Pulse of the Profession* survey conducted in November 2013.

Table 1: Project Management Office Type and Function

Function	Divisional/ departmental PMO	Project support/ controls office	Enterprise PMO	Center of excellence PMO	Project-specific PMO
Standards project management methodology and processes	X	X	X	X	X
Portfolio management	X	X	X	X	X
Project/program delivery management	X	X	X	X	
Talent management			X	X	
Strategic planning			X	X	
Administration and support	X	X	X	X	X
Governance and performance management			X	X	X
Organizational change management			X		
Knowledge management			X	X	

4. Define PMO Success Criteria and Metrics

Defining a set of metrics that measures PMO performance and provides an indication of its performance is important. Metrics should be driven by the type of the PMO as well as its mission and strategic objectives, aligned with the organization's mission and objectives. In addition the PMO sponsor and top executives should be involved when defining the metrics, along with reporting the mechanism, tools, and frequency. According to the *PMI Pulse of the Profession* survey (2013), the majority of PMO organizations are being measured by:

- a. Project delivery vs. schedule evaluation
- b. Customer feedback evaluations
- c. Performance against financial goals
- d. Project cost vs. budget evaluations
- e. Formal evaluations of project managers and PMO staff
- f. Stakeholders feedback evaluations
- g. Project owner feedback evaluations; in case of project specific PMO type

5. Define PMO Organizational Structure

Building a logical organization is critical to the success of the PMO and the organization, as this defines the PMO-integration approach in the organization and how people interact and communicate with those in other divisions. The PMO must define transitional activities needed to integrate the PMO into the existing organization. The factors that drive the logical structure of the PMO itself and where it is located in the organization depends on the types of the PMOs to be established, and the extent of authority and responsibility top management is prepared to delegate to project managers. Hence, before establishing the PMO, the organization must define specific aspects of the project manager's job, degree of authority, and relationship to project staff and other units in the organization (PM4DEV, 2007). In addition, it is equally important to define and specify communication channels and methods of conflict resolution. This is mostly important in a matrix project-management organization.

According to the 2013 *PMI Pulse of the Profession* survey, 33% of PMO practitioners stated that their organization PMO reported to a divisional vice president or director, 19% reported to the CEO, whereas 12% reported to other top executives (PMI, 2013). Due to their nature, objectives, and mission, Enterprise and Center of Excellence PMOs usually report to the highest level entity in the organization structure, such as the CEO, president, vice president, or board of directors. In contrast, Divisional, Project-Specific, or Project-Support

PMOs usually report to a divisional or functional manager such as the chief information officer, a division director or a vice president.

6. Determine the Number of PMO Staff

The type and number of staff needed for the PMO depends on the type of PMO to be established as well as the number and complexity of projects or portfolios to be serviced by the PMO. The type of PMO staff ranges from project managers and managers to project staff. According to the *PMI Pulse of the Profession*(2013), after surveying PMO professionals who operate or manage a PMO, the percentage of project managers in the PMO was 16%, managers were 3%; project staff was 26%; whereas 12% were other types of staff such as administrative assistants and IT support. As the scope and role of PMO functions expands, the number of PMO staff needed increases. For instance, the number of PMO staff for a Center of Excellence or Enterprise PMO is expected to be higher than a Project-Specific or Division-Specific PMO.

7. Define PMO Charter

Establishing a PMO should be treated as a project. Hence PMO objectives, vision, type, success criteria, scope, budget, timeline, and integration processes should be documented in a PMO charter, communicated to key stakeholders, and approved. Consequently, there is no misunderstanding or ambiguity in the organization about what will happen, when, and how. It is important to get formal approval on the PMO charter by the PMO executive sponsor. Once that is accomplished, holding a formal PMO-launch meeting with all key stakeholders marks the start of the PMO initiation and execution process, and marks the end of the planning phase.

8. Ensure Commitment and Top-Management Support

One key factor to ensure PMO success is proper alignment and collaboration among the organization's teams and functions. The PMO should encourage collaboration between project professionals and various functional departments in the organization. Focus on collaboration rather than policing is always preferred to improve support and longevity (PMI, 2012). After defining the PMO project charter, with objectives, business case, mission, and scope, it is imperative to ensure key stakeholders and top management commit to and support the PMO.

The PMO charter must include a comprehensive understanding of organizational norms. Documented or not, processes and procedures exist in organizations. Enforcing methodology and procedures without first understanding how things are done may lead to resistance, or worse, passive noncompliance (Millhollan, 2009). If a defined project-management methodology already exists, work to integrate parts of it into the new PMO; have the existing methodology audited to see if the process is actually followed, determining any gaps between the two and understanding the reason behind such. Processes may have been developed based on theory or past experience without consideration for organizational norms or factors that influence the practical application of the defined methodology.

In most cases, the initiative of having a PMO stems from a need to enhance efficiency and address existing problems in delivering projects successfully within scope, budget, and time. As a result, to ensure that newly established PMOs are viewed as a business partner rather than as police or an auditor, understand how projects are prioritized, how project team members perform their daily activities, how resources define and resolve problems and conflict, and how team members and stakeholders interact with each other. Understanding the organizational culture and norms will help establish better communication and advance project-management methodologies. Peer-level reviews are important to gain the necessary support and alliances to buoy the approach and level of control of the PMO.

9. Build the Project-Management Methodology and Processes

Using a project-management methodology, managers define the processes, procedures, templates, best practices, standards, guidelines, and policies that are used to manage projects (PMI, 2004). In addition, processes for project requests, evaluation, and funding ensure that approved projects are aligned with business goals and objectives. The PMO must define the project-management methodology to be used and adopted. The methodology and its processes may not be strict, but must be adaptable to meet the changing demands and needs of the business and the organization. The methodology should add value to the projects that use it rather than hindering them. In addition, integration between the project-management methodology and processes and any existing processes and methods such as software-engineering development, product management, sales and presales should be considered and ensured. According to Daptive (2012), implementing a methodology without a framework that defines how to integrate with existing processes and methods is one of the main pitfalls of PMOs. The project-management methodology should be deployed into the organization through one or more serving projects to allow monitored practice and evaluation of the methodology (TenStep, 2010). This allows for continuous enhancements and adaptation of the methodology over time in a manner that fits the organization's culture and needs. In summary, the PMO defines a flexible and adaptable methodology, yet simultaneously continues to support and update it to ensure it is relevant to the organization.

10. Training

Training should be provided to all members of the organization to ensure the PMO mission, objectives,

processes, templates, and framework integrate and personnel will be able to interact with those in other organization divisions, and to ensure that functions are all well understood. Training should be provided to all stakeholders at all levels spanning from executives, project managers and staff, to functional managers and all levels of employees. Even the most qualified project managers should be trained on the specific aspects of the organization's project-management methodology and processes, as each organization has its own specific culture to be considered. In addition, the PMO managers should ensure the establishment of project-management professionalism in the organization by providing mentorship, training, and guidance to project teams as they learn and adopt project-management processes and best practices, encouraging employees to attend training and apply and follow the newly applied project-management methodology. Employees should provide needed feedback, encouraged by tying feedback to employees' annual appraisal, employee's reorganization, and career advancement in the organization.

11. Track PMO Metrics and Ensure Continuous Status Update

Once execution and implementation are underway, track, monitor, report, and enhance. A PMO case of failure starts when the value of the PMO is questioned due to having projects that are incomplete and undelivered within the defined budget, time, and deliverables objectives. To avoid failure, PMO managers should perform a number of assessments over time to provide insights into whether project-management processes are being successfully integrated in the organization, providing the opportunity to enhance and refine PMO processes and methods. Although failure to deliver results is disheartening, failing to communicate PMO results upward is a major reason several organizations have perceived failure (Daptiv, 2012).

One of the main functions expected of a PMO is to provide common, roll-up reporting on the status of all projects and portfolios of the organization. According to *The State of the PMO in 2011* (PMI, 2011), only 15% of project managers who report to the vice president of IT believed their firm acknowledges the value of a PMO (PMI, 2012). In addition, 70 % of respondents to the global *State of the PMO* study said that the PMO's value was questioned among senior management (PMI, 2012). Consequently, it is imperative to ensure that all concerned stakeholders and top managers are aware and current about the PMO status, progress, and obstacles. Reporting PMO performance status should focus on reporting the current status or challenges related to the metrics chosen to track PMO success. Performance reporting can be performed weekly, monthly, or quarterly, depending on the type of the PMO and the stakeholders. For instance, an Enterprise PMO might report on performance against financial goals quarterly, whereas a project-specific PMO might report on project delivery versus schedule on a weekly basis.

To ensure continuous PMO success, continuous improvement and enhancements are necessary. Monitoring, collecting metrics, and reporting on them are useless if not leveraged with continuous review and enhancements of PMO processes, mission, objectives, and strategy. This process presents the opportunity to cultivate the organization to become a culture built on the best project-management practices, gearing the PMO to encompass a more mature scope and influence, perhaps moving toward an Enterprise or Center of Excellence PMO in the organization.

Conclusion

Research on the PMO framework outlines a PMO driven by an organization's strategic objectives, business needs, and mission. In addition, the framework is driven by the functions expected of the PMO to ensure alignment with the organization's strategic objectives. Consequently, these functions drive the type of the PMO to be established, as well as its criteria to determine success. This research outlines and defines the steps needed to establish a PMO. In addition, this study brings emphasis to best practices necessary to ensure a more effective PMO. With the information presented in this study, PMO managers are in a better position to reengineer their provision of services and support to execute an organization's portfolio of projects and strategic initiatives. Ensuring continuous executive supports, as well as collaboration across the various divisions of the organization, will enhance success. In addition, measuring, reporting, and tweaking processes and methods while undergoing the PMO implementation path is vital. Flexibility and adaptability in applying project-management processes and being open to feedback and input from various stakeholders are all equally important.

References

- [1] Aubry, M., Hobbs, B., Müller, R., & Blomquist, T. (2010). Identifying forces driving PMOs changes. *Project Management Journal*, 41(4), 30–45.
- [2] Bates, W. (1998). Improving project management. *IIE Solutions*, 30(10), 42–43
- [3] Benson, L. R. (1997). *Acquisition management in the U.S. Air Force and its predecessors*. Retrieved from <http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA433213>
- [4] Bolles, D. (1998). The project support office: A mechanism for enterprise-wide modern project management integration. *PM Network*, 12(3), 33–38.

- [5] Crawford, K. (2001). *The strategic project office: A guide to organizational performance*. New York, NY: Center for Business Practices.
- [6] Dai, C. X., & Wells, W. G. (2004). An exploration of project management office features and their relationship to project performance. *International Journal of Project Management*, 22, 523–532.
- [7] Daptiv. (2012). *Top 10 PMO worst practices: Pitfalls to avoid* [White paper]. Retrieved from http://www.daptiv.com/document_library/whitepapers/Top-10-Project-Management-Office-PMO-Worst-Practices.pdf
- [8] Desouza, K. C., & Evaristo J. R. (2006). Project management offices: A case of knowledge-based archetypes. *International Journal of Information Management*, 26, 414–423.
- [9] PMI (2011). *The state of the PMO in 2011*. Retrieved from http://www.peixunjie.com/upload_files/article/201206/261.pdf
- [10] Frame, J. D., & Block, T. R. (1998). *The project office: A key to managing projects effectively*. Seattle, WA: Crisp.
- [11] Hill, G. M. (2004). Evolving the project management office: A competency continuum. *Information Systems Management*, 21(4), 45–51.
- [12] Hobbs, B., & Aubry, M. (2007). A multi-phase research program investigating project management offices (PMOs): The results of Phase 1. *Project Management Journal*, 38(1), 74–86.
- [13] Hurt, M., & Thomas J.L. (2009). Building value through sustainable project management offices. *Project Management Journal*, 40(1), 55–72.
- [14] Ibbs, C. W., & Kwak, Y. H. (2000). Assessing project management maturity. *Project Management Journal*, 31(1), 32–43.
- [15] Kerzner, H. (2003). *Project management: A systems approach to planning, scheduling and controlling*. New York, NY: John Wiley and Sons.
- [16] Kerzner, H. (2009). *Project management: A systems approach to planning, scheduling, and controlling* (10th ed.). Hoboken, NJ: John Wiley & Sons.
- [17] Kwak, Y.H., & Dai, C.X. (2000). Assessing the value of project management offices (PMO). *PMI Research Conference Proceedings*.
- [18] Millhollan, C. (2009). *The journey to an enterprise project management office*. PMI Global Congress Proceedings. Orlando, Florida, USA
- [19] Murphy, R. (1997). The role of the project support office. *PM Network*, 11(5), 33–36.
- [20] Pellegrinelli, A., & Garagna, L. (2009). Towards a conceptualization of PMOs as agents and subjects of change and renewal. *International Journal of Project Management*, 27, 649–656.
- [21] PM4DEV. (2007). *Project management organization structure*. Retrieved from http://www.classtoolkit.org/sites/default/files/documents/PM4DEV_Project_Management_Structures.pdf
- [22] PMI (2004). *A guide to the project management body of knowledge* (3rd ed.). Newtown Square, PA.
- [23] PMI (2008). *A guide to the project management body of knowledge*, (4th ed.). Newtown Square, PA.
- [24] PMI (2012). *The project management office in sync with strategy*. Newtown Square, PA.
- [25] PMI. (2013). *Pulse of the profession. PMO Framework* Retrieved from http://www.pmi.org/~media/PDF/Publications/PMI_Pulse_PMO-Frameworks.ashx.
- [26] Rajegopal, S., McGuin, P., & Waller, J. (2007). *Project portfolio management: Leading the corporate vision*. Basingstoke, England: Palgrave-Macmillan.
- [27] Stanleigh, M. (2006). *From crisis to control: New standards for project management*. *Ivey Business Journal*. March/April. 1 - 6
- [28] TenStep (2010). *Learn how to setup and run a project management office* [White paper]. Retrieved from http://www.aspe-sdlc.com/offers/pickups_0386572/pmo_whitepaper_by_tenstep.pdf