

December 2006

# A Conceptual Framework of the Alignment of the Project Management Office (PMO) with the Organizational Structure

Ramakrishna Ayyagari  
*Clemson University*

Raymond Henry  
*Clemson University*

Russell Purvis  
*Clemson University*

Follow this and additional works at: <http://aisel.aisnet.org/amcis2006>

---

## Recommended Citation

Ayyagari, Ramakrishna; Henry, Raymond; and Purvis, Russell, "A Conceptual Framework of the Alignment of the Project Management Office (PMO) with the Organizational Structure" (2006). *AMCIS 2006 Proceedings*. 449.  
<http://aisel.aisnet.org/amcis2006/449>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2006 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# A Conceptual Framework of the Alignment of the Project Management Office (PMO) with the Organizational Structure

**Ramakrishna Ayyagari**

College of Business & Behavioral Sciences  
Clemson University  
101 Sirrine Hall  
Clemson, SC 29634-1305  
[rayyaga@clemson.edu](mailto:rayyaga@clemson.edu)

**Raymond M. Henry**

College of Business & Behavioral Sciences  
Clemson University  
111 Sirrine Hall  
Clemson, SC 29634-1305  
[rhenry@clemson.edu](mailto:rhenry@clemson.edu)

**Russell L. Purvis**

College of Business & Behavioral Sciences  
Clemson University  
106 Sirrine Hall  
Clemson, SC 29634-1305  
[rlpurvi@clemson.edu](mailto:rlpurvi@clemson.edu)

## ABSTRACT

Despite the intensity of information technology investments, too many projects fail to meet their multiple objectives of time, cost, quality, scope and stakeholder expectations. Consequently, organizations are implementing project management offices (PMO) – an organizational unit that centralizes and coordinates the management of projects. While there is a growing interest in practice, there is a paucity of theory and research on PMO's to guide practice in unlocking the potential benefits offered from such a structure. PMOs can operate on a continuum, from providing project management support functions in the form of training, software, standardized policies and templates, to the direct management and responsibility of achieving project objectives. In this research, a conceptual framework is developed using governance and organizational structures to examine the alignment of configuration dimensions or arrangements of the PMO needed to exploit the various potential features and benefits, as well as the potential costs (in terms of innovations) of such configurations. The implications for researchers and practitioners of the presented framework are also discussed.

## Keywords

Project Management, IT governance, Project Management Office, Structure.

## INTRODUCTION

The Project Management Institute estimates that US firms annually spend about \$2.3 trillion on information systems projects and that global project spending might be nearly \$10 trillion (PMI, 2001). Therefore, the effective management of information systems projects to ensure ongoing integration between information technologies, business priorities and activities is a critical organizational challenge and imperative (Benko and McFarlan, 2003). The focus on efficient, effective, and productive project management is particularly acute because information systems are increasingly viewed as strategic organizational resources and enablers of superior competitive performance (Sambamurthy et al, 2003).

However, project success rates suggest that project management is not yielding the results mandated in a competitive, dynamic environment. Information technology (IT) software development projects are over budget, over schedule and lack the critical functionality needed by key stakeholders. One common theme of such failure is the thin spread of domain knowledge (Walz, 1993) domains such as project management, and the lack of coordinated control and governance over projects. Consequently, many organizations are contemplating, or have implemented a project management office (PMO) –

“an organizational unit to centralize and coordinate the management of project under its domain (PMI, 2004, pg. 17).” A PMO is a structural solution to better utilize and control resources and knowledge on the organizational portfolio of projects.

The growing consensus in practitioner literature points to the important benefits offered by a PMO for organizations wanting to improve their project management effectiveness. Hewlett Packard’s recent gains in project management, for example, are attributed to having a strong PMO framework (Jedd 2005a). A rich array of benefits are purported from such a structure, including standardized methods and processes, richer training and support, potentially higher levels of integration across an organization, higher efficiencies in the utilization of resources, better control and reporting of the project portfolio, to name but a few (Bates, 1998; Block and Frame, 1998; Hill, 2004; Levine, 2001; PMI, 2004; Rad, 2001). To achieve these benefits requires effective alignment of the PMO structure within the organization as this can differ significantly among organizations (Hill, 2004).

PMO structures are argued as existing on a continuum and progressive in the functionalities they offer (Hill, 2004). For example, a *basic* PMO would offer functionalities that exist on the lower levels of the value domains<sup>1</sup> (providing templates, ad hoc training etc). However, an *advanced* PMO would offer functionalities that exist on the higher levels of the value domains (actual allocation of resources for projects, corporate lessons learned, portfolio management). It is a general belief that organizations can ‘mature’ and reach higher levels of PMO structures (Hill, 2004; Jedd, 2005b). The exact factors on which these structures depend are not discussed and whether reaching higher levels of PMO structure is efficient for a particular IT structure is not clear. This article contends that universalistic approaches, such as recommendations to ‘mature’ to higher levels of PMO structure are simplistic and argue that existing organizational structures and IT structures preclude what type of PMO structure would be efficient.

The literature on PMOs typically is limited to the discussion of different structures and the advantages / disadvantages of different structures in terms of functionalities provided. Since PMO is an entity in an organization which involves new forms of accomplishing organizational PM tasks, we believe that it is important to consider broader implications (like organizational innovations) of structural arrangements like PMOs in an organization. To this effect, we provide exploratory arguments on the impact of PMOs on innovations within the organizations.

The rest of the article is organized as follows. The next section describes the three value domains that capture the various functionalities of a PMO followed by a brief overview of IT governance literature. In the next section, different structures of PMO are discussed along with what could be expected with respect to the value domains. The paper concludes with discussion of the costs and benefits of the PMO structures.

## THEORETICAL BACKGROUND

### Value Domains

We propose three broad value domains (Knowledge, Control, Resources) that could explain how practitioners think about the ‘value added’ from organizing the PMO function. Our parsimonious conceptualization is consistent with previous efforts to identify project management practices into different ‘domains’ (Cooke-Davies and Arzymanow, 2003). Although all the structures of PMO add value to these three domains, we argue that the value added differs from one structure to another due to differences in the degree of coordination within the value domains in each structure. An advantage of conceptualizing this way is that any potential benefit from establishing a PMO could be mapped into one of these value domains. Understanding this is a first step in not only managing expectations from a PMO, but also in choosing an appropriate PMO structure.

Our conceptualization of value domains into Knowledge, Control and Resources is consistent with the basic tenet of project management – to *control* and *support*. These three domains are described in the following table.

Value Domain	Description
Knowledge	Knowledge has been typically identified as the most valuable form of content in the data-information-knowledge hierarchy (Grover and Davenport, 2001). Knowledge enhances the learning capacity of a unit <sup>2</sup> and allows faster response to novel situations. Considering that projects by definition have some degree of novelty, businesses have identified knowledge as key for effective PM. The PMO helps by: <ul style="list-style-type: none"> <li>Identifying or developing of a project management methodology, best practices and standards</li> </ul>

<sup>1</sup> Discussed later in the paper.

<sup>2</sup> In general a Unit could be a PMO, business unit or an organization.

	<ul style="list-style-type: none"> <li>• Managing shared documentation, including project policies, procedures, templates, checklists and other shared documentation</li> <li>• Delivering training on the project management methodology, correct use of templates, and operating procedures to enhance individual skills.</li> <li>• Enforcing standards and methods to leverage best practices and to ensure members of the organization are all and using the same lexicon and “PM language.”</li> <li>• Exchanging knowledge and professional experience among project managers through, for example mentoring.</li> <li>• Analyzing, integrating and disseminating lessons learned</li> <li>• Directing project managers and project teams to knowledge experts within and outside the organization</li> <li>• Centralizing the operation and management of project tools, including enterprise-wide project management software</li> <li>• Analyzing, integrating and disseminating identified risks, as well as mitigation and elimination strategies</li> <li>• Providing standards and regulations for quality planning, assurance and control.</li> </ul> <p>Centralizing, coordinating and managing communication across projects</p>
Control	<p>Control typically refers to who has the decision authority (Eisenhardt, 1985). In the context of this paper, we describe control domain as all the activities that are related to the actual ‘control’ activities that a project manager performs during the execution of the project. Needless to say, effective PM involves control of PM activities. The PMO helps by:</p> <ul style="list-style-type: none"> <li>• Centralizing configuration management for all projects administered by the PMO</li> <li>• Centralizing and analyzing both shared and unique risks for all projects</li> <li>• Centralizing project status information for the organization</li> <li>• Enforcing PM standards and methods - proposal development, change management, risk assessment</li> <li>• Establishing and enforcing clear standards of performance measurement to judge the success of projects.</li> <li>• Performing audits on success of projects, project management effectiveness, value and use of the methodology and tools, and compliance with internal and external standards and requirements</li> <li>• Providing post evaluation services for projects as required</li> <li>• Offering full accountability for managing projects</li> <li>• Monitoring and control of all PMO project timelines and budgets, usually at the enterprise level</li> </ul>
Resources	<p>This domain involves all the activities that involve the actual allocation of resources. The PMO can help by:</p> <ul style="list-style-type: none"> <li>• Sharing and coordinating resources across all projects administered by the PMO</li> <li>• Evaluating and selecting toolsets (scheduling tools, knowledge repositories, portfolio and resource management software)</li> <li>• Managing resource skills, allocation and capacity, and optimizing productivity</li> <li>• Identifying the project manager, recruiting project staff outside the organization</li> <li>• Evaluating all project staff.</li> <li>• Housing all project managers with profit and loss responsibility for the projects it manages</li> <li>• Budgeting and tracking project capital and operational expense</li> <li>• Total financial accountability - annotating man-hours used to those estimated, authorizing purchases and associated expenses, invoicing, executing cost control measures, financial reporting</li> <li>• Offering full human resource administration - defining the project management training curriculum, offering career planning and progression</li> </ul> <p>(Jaques, 2001; Johnson and Horsey, 2001, Hill, 2004; Levine, 2001; PMI, 2004; ProjectArena, 2003; Rad, 2001):</p>

**Table 1: Description of Value domains**

## IT Governance Structures

To address the issue of how to govern the PMO (i.e. different possible PMO structures), we draw on extensive research that has dealt with governance issues with respect to the IT function. IT governance arrangements involve directing, controlling and coordinating IT infrastructure management, IT use management and project management activities (Sambamurthy and Zmud, 1999). Given the growing importance of the project management discipline and the evolvement of PMO structure, it is not clear what type of PMO structures are best aligned with a given IT governance mode. It is this gap that we address in this paper. Typically IT governance arrangements are classified into centralized, federal and decentralized structures (Brown and Magill, 1994; Sambamurthy and Zmud, 1999). Varying degrees of decision making authority among corporate IS, divisional IS and line management describes the three structures. Specifically, in a centralized structure, the authority for all IT activities lies with corporate IS. Similarly, in a decentralized structure, the authority for all IT activities lies with the divisional and line management. Federal structure is characterized by the balance in authority between corporate and divisional IS units.

## PMO Structures

Drawing a parallel on IT governance modes, we propose three viable structures for organizing PM function. The *Basic PMO*, the first structure is similar to the decentralized IT governance mode. In this structure, divisional IS and line management assumes authority for all the PM activities. The *Standard PMO*, the second structure, similar to the federal IT governance mode, is characterized by a balance in authority between the corporate and divisional IS units with regard to the PM activities. The *Advanced PMO*, the third structure is similar to the centralized IT governance mode, is characterized by a structure in which total authority with respect to project management activities lies with corporate IS.

The mapping of different functionalities of PMO into value domains (Table 1) entails the processes of project management as defined by the Project Management Institute – the application of knowledge, skills, tools and techniques to project management activities to meet the project requirements (PMI, 2004). Our conceptualization of these functionalities into value domains enhances the clarity of thought (Table 1). For example, the different PMO structures now reflect the differences in the degree to which the PMO coordinates ‘knowledge’, ‘control’, and ‘resources’ as shown in Table 2.

		Value Domains		
		Knowledge	Control	Resources
PMO Structures	<b>Basic PMO</b>	Templates, documentation etc., exist at the divisional level. Limited lessons learned	Enforcer of typical PM functions.	Resources are owned by the divisions, not PMO.
	<b>Standard PMO</b>	Templates, documentation etc., exist at the organizational level. Lessons learned available across the divisional areas to a limited extent. Mentoring platform for project managers.	Enforcer of corporate methodology and tools. Develops and maintains standards and methods Collection and compilation of project reports	Limited ownership of resources. At best, have a shared ownership of resources with functional units.
	<b>Advanced PMO</b>	True organizational ‘lessons learned’. Centralized repository of templates, policies, procedures etc.	Enforcer of corporate best practices. Establishes clear standards of performance to assess projects. Projects across the domains could be compared effectively.	The PMO is not an administrative centre but in fact has profit and loss responsibility for the projects it manages. Ability to staff projects with appropriate project managers.

**Table 2. PMO structures and Value domains**

As defined, a *basic* PMO largely represents decentralization of project management activities to the divisional level. It is possible that there exist multiple *basic* PMOs in an organization. In this structure, the project managers typically report to the divisional units and there might be little in regard to ‘integration’ with other divisions. With respect to the ‘knowledge’ domain, this structure would provide templates, documentation etc. that is very specific to the particular divisions. The

training needs are ad hoc in this structure and there may not be formal training. With respect to the 'control' domain, this structure takes the role of implementer. Project managers typically implement the plans approved by the divisions. With respect to the 'resources' domain, this structure has limited access to resources. All the project related expenses (technical and human costs) are approved by the division. Functions such as configuration management or portfolio management that are offered by other PMO structures are not feasible because of the decentralized structure.

On the other end of the spectrum, an *advanced* PMO basically represents centralization of all project management activities at the corporate level. The discussion of the value added functionalities for this structure are discussed in table 2. Further, in this structure, a separate organizational unit involving administrative personnel is established, to which all the projects are reported. Also, all the project managers in the organization typically report to the PMO. Integration is achieved across divisions and training efforts are consolidated. With respect to the 'knowledge' domain, this structure would provide templates, documentation, best practices, lessons learned etc. in a highly integrated fashion. With respect to the 'control' domain, this structure takes the role of organizational strategy implementer. Along with the strict adherence to the standardized methodologies, project managers take active part in initiation and implementation of projects that match closely to organizational strategy. Because of this structures' proximity to executive management and its ability to oversee all the projects in the organization, it can convert organizational strategy into actions more efficiently. Standard project assessment procedures exist and it is easier to compare projects across different domains. Also, because of its centralized nature at the corporate level, portfolio management and resource efficiency are possible in this structure. With respect to the 'resources' domain, this structure has complete access to resources. All the project related expenses (technical and human costs) are approved by the PMO.

A *standard* PMO is a structure that lies between the extremes of *basic* and *advanced* PMOs. This structure represents the existence of a corporate level PMO, but with fewer responsibilities. This structure provides guidance with respect to 'knowledge' on corporate standard methodologies, templates etc, but the project managers have sufficient leverage to modify them. The project managers might have joint reporting responsibilities, i.e. to both the PMO and the divisional units. Project managers typically implement the plans approved by the divisions. In this structure, project managers work with divisional units to initiate and implement the projects. All the project management related expenses (technical and human costs) are approved by the corporate PMO, but the staff related expenses on the project are approved by the division.

Given these different structures, it might seem tempting to strive for an *advanced* PMO, as the 'value added' in this structure is greater than the other structures. However, we argue that only certain structures are efficient given a particular IS structure. Similar to the arguments that IS structure should align with corporate structure, we propose that the PMO structures should align with IS structures. Therefore,

*PI: Organizations would have better project success when the PMO structures are aligned with IS structures.*

To illustrate, let us consider factors that determine which IS structures exist in an organization. Sambamurthy and Zmud (1999) argue that certain determinants like corporate governance, economies of scope and absorptive capacities determine whether IS structure would be decentralized, centralized or federal. Past research has identified that organizations seek to parallel their corporate governance arrangements to lower the coordination costs (Blau and Schoenherr, 1971; Galbraith, 1967; Lawrence and Lorsch, 1969). Similarly, we argue that PMO structures would mirror their IS structures. Strategic management literature suggests that economies of scope are determined by diversification mode and breadth. Diversification mode refers to the growth strategy of a firm (Simmonds, 1990). If the growth is due to gradual expansion of business, it is likely that firms invest in related technologies (Pitts, 1976; Simmonds, 1990) and a centralized IS structure would result to take advantage of economies of scale (Sambamurthy and Zmud, 1999). In this type of IS structure, it would be most efficient to implement an *advanced* PMO. This type of structure would enable the organization to take advantage of synergies that exist at the corporate level, as discussed in the characteristics of an *advanced* PMO. Similarly, if the growth is due to acquisitions, it is possible that different IT infrastructures might exist, leading to a decentralized IT structure (Sambamurthy and Zmud, 1999). Given this type of structure, it would not be efficient to implement an *advanced* PMO. Since the growth is due to acquisitions, it is possible that different project management methodologies exist for the firms undergoing acquisition. The project management knowledge gained in one context cannot be easily transformed to another context because knowledge is often localized and embedded (Carlile, 2002). This precludes the organization from having a corporate level PMO. Therefore it seems that a *basic* PMO would be most efficient. Diversification breadth refers to the degree of market relatedness of a multi-business firm. If the firm expands to related markets, then the IS structure could be centralized (Sambamurthy and Zmud, 1999). Drawing on the arguments similar to diversification mode, it is argued that an *advanced* PMO would be most efficient. However, if the firm expands into unrelated markets, then the IS structure would be

decentralized (Sambamurthy and Zmud, 1999). Drawing on the arguments similar to diversification mode, it is argued that a *basic* PMO would be most efficient.

Drawing on Sambamurthy and Zmud (1999), in this paper, absorptive capacity reflects the line managers' project management experience in the firm. If this is high, then the line management can effectively implement and sustain a decentralized locus for project management decisions, implying that a *basic* PMO would be most efficient. Similar reasoning suggests that an *advanced* PMO would be most efficient if the absorptive capacity is low. Further, Sambamurthy and Zmud (1999) argue that all of the above identified determinants of governance structure act together, rather than in isolation. This implies that when factors that predict centralized and decentralized structures act together, they might result in a structure that is federal in nature. Depending on the strength of the individual factors<sup>3</sup>, it might be most efficient to implement a *basic* or *standard* PMO. The above arguments yield

*P1a: Centralized organizations wanting the richest functionality and benefits offered by a PMO would utilize the advanced structure.*

*P1b: Federal organizational structures (including the IT structure) can optimally structure the PMO from (basic to standard) structure.*

*P1c: Decentralized organizations wanting the richest functionality and benefits offered by a PMO would utilize the basic structure.*

The mapping of IS governance structures and their corresponding PMO structures is shown in Table 3.

		Possible PMO structures
IS governance modes	Decentralized	Basic PMO
	Federal	Basic to Standard PMO
	Centralized	Basic <sup>4</sup> to Advanced PMO

**Table 3. Possible PMO structures**

In addition to the various functionalities identified above, each of the structures is associated with costs/disadvantages. These are briefly pointed out in Table 4 to provide a holistic view on PMO structures.

		Value Domains		
		Knowledge	Control	Resources
PMO Structures	Basic PMO	Project managers' possess localized knowledge of functional units. Project management knowledge of project managers is dispersed.	Localized control provides more flexibility.	PM function may take a back seat
	Standard PMO			Might lead to political struggle between PMO and functional areas, if the rewards are not aligned.
	Advanced PMO	Could potentially integrate knowledge across boundaries. Builds project manager's PM expertise at the expense of	Portfolio management could be achieved.	Resource efficiency. If there is no buy-in for this structure, it might just add to a level to the

<sup>3</sup> The interaction of different factors is beyond the scope of this paper.

<sup>4</sup> Organizations can use *basic* PMO in a centralized IS structure, but this type of structure will *not* be the *most* efficient.

		functional units' knowledge.	High coordination costs.	bureaucracy.
--	--	------------------------------	--------------------------	--------------

**Table 4. Benefits and Costs of Different PMO Structures**

For example, in a *Basic* PMO the learning occurs at the divisional level. This makes it difficult for the organization to learn at the corporate level, because knowledge is often embedded in context (Carlile, 2002). The project management knowledge gained in this structure is rich with the divisional knowledge. Therefore, it might not be possible to transfer this knowledge from one division to another. Similarly, in an *Advanced* PMO, the learning occurs at the corporate level. The project management knowledge gained in this structure is not rich in the divisional knowledge. The project managers might have increased their absorptive capacity with respect to project related knowledge, but at the expense of divisional knowledge.

Although the effectiveness of different PMO structures in terms of the functionalities offered are discussed above, the broader implications of different structures should also be considered. One way to look at the impact of different structures is to study the consequences of structural arrangements on organizational innovation. This implies that certain structures that are efficient from project management point of view have consequences with respect to IT based innovation, which we believe is important to acknowledge and assess. Research on organizational innovation has identified structural variables (like centralization, functional differentiation etc) as the main determinants of innovation (Damanpour, 1991). For the sake of clarity, we base our arguments on the broad classification that exists for innovations – radical versus incremental (Dewar and Dutton, 1986; Ettlie et al., 1984). This classification is similar in spirit to the classification of exploration versus exploitation (Benner and Tushman, 2002; March, 1991; Rosenkopf and Nerkar, 2001; Sorensen and Stuart, 2000). Exploitative innovations typically build on existing knowledge whereas explorative innovations occur by searching for doing work activities in new ways (Christensen, 1997; Rosenkopf and Nerkar, 2001).

Since the basic premise of establishing a PMO structure is to improve the project success rates by reducing the variation in scope, quality, costs, time etc.(Rad, 2001), the issue of the impact of PMO structures on IT based innovation becomes the issue of understanding how implementing process management activities (i.e. project management processes) affects innovations. We draw upon process management research to discuss these issues (Benner and Tushman, 2002; Garvin, 1988; Harry and Schroeder, 2000). Benner and Tushman (2002) argue that implementation of process management activities shifts the balance of exploitation and exploration in favor of exploitation (i.e. efficiency), possibly at the expense of exploration (adaptation).

In the context of PMO's, an *advanced* PMO structure implies existence of rigid PM practices. This type of structure enforces the organization wide standards, policies, methodologies, templates etc. Since they also have the authority on resources and projects, deviations to the established processes would be an exception, rather than the norm. This type of structure focuses on efficiency by establishing routines (Levitt and March, 1988; March, 1991). Typically, best practices are established and project management activities are repeated in these standardized processes. Establishment of routines enables repetition in activities that not only reduce the time it takes but also reduces the variance in the activities. The focus is on improving efficiency and consequently incremental changes are made to the existing knowledge – leading to incremental innovations (Benner and Tushman, 2002). Project managers in these structures develop expertise with respect to project management, as similar processes are followed for different projects. Therefore, implementation of *advanced* PMO improves the efficiency of PM function, develops project management expertise in the organization and enables incremental innovation. Contrastingly, a *basic* PMO does not have the same control as an *advanced* PMO over project management activities. The establishment of routines across various divisional units is not feasible in the decentralized *basic* PMO.

Process management research shows that activities associated with focus on adherence to routines and efficiency are different from activities associated with increased variation and uncertainty that are required for new thinking (Hannan and Freeman, 1984; Miner et al., 2001). While the benefits of an *advanced* PMO in terms of exploitation are discussed above, the rigid enforcement of routines might create traps that restrict exploration (Leonard-Barton, 1992). Further, it is argued that organizations should attend to the specifics of the organization and innovate mindfully (Swanson and Ramiller, 2004). Applied in the context of PMO structures, an *advanced* PMO, with its preoccupation on establishment of routines and efficiencies might not pay attention to the specifics of divisional requirements and result in decreased explorative innovations. However, in a *basic* PMO structure, sufficient leverage exists with divisional units, so that project managers can use appropriate procedures and attend to divisional requirements. The ability to be on-the-look for new ways of doing activities enables exploration. Project managers in this type of structure gain knowledge that is different from the knowledge gained in an *advanced* PMO. Because of the attention to divisional specifics in a *basic* PMO, project managers gain knowledge that is rich in the context. By the very nature of the differences in the PMO structure, it is important to acknowledge that some structures might be more favorable to explorative innovations and some might be more favorable to exploitative innovations, as discussed above.



## CONCLUSION

This paper initially made the case for the importance of PMO's. Then, various functionalities of a PMO discussed in literature are mapped to three basic value domains for clarity of thought. Then, the importance of how to structure the PM function is discussed. Drawing on the rich research tradition of IS governance, it is argued that the corporate IS governance structure drives the appropriate structure for a PMO. Further, the broader consequences that might result from these structures are discussed from an innovation stand point.

Understanding how and why a firm has adopted a specific PM governance arrangement is important in order to advance knowledge about the effectiveness of alternative governance arrangements for achieving high project success rates. The framework proposed in this study should enable practitioners to assess the fit between their existing PMO structure and expectations from the PMO. Managing expectations of stakeholders is key to successful project management and it seems to be the key for a successful PMO structure. The framework should further enable practitioners to use as a road map to implement the right structure based on the needs.

## REFERENCES

1. Bates, W.S. "Improving project management.," *IIE Solutions* (30:10) 1998, p 42.
2. Benko, C., and McFarlan, W.F. *Connecting the Dots: Aligning Projects with Objectives in Unpredictable Times* Harvard Business School Press, Boston, MA, 2003.
3. Benner, M.J., and Tushman, M. "Process Management and Technological Innovation: A Longitudinal Study of the Photography and Paint Industries.," *Administrative Science Quarterly* (47:4) 2002, p 676.
4. Blau, P.M., and Schoenherr, R.A. *The Structure of Organizations* Basic Books, New York, 1971.
5. Block, T.R., and Frame, J.D. *The Project Office - a Key to Managing Projects Effectively* Crisp Publications, 1998.
6. Brown, C.V., and Magill, S.L. "Alignment of the IS functions with the enterprise: Toward a model of antecedents.," *MIS Quarterly* (18:4) 1994, p 371.
7. Carlile, P.R. "A Pragmatic View of Knowledge and Boundaries: Boundary Objects in New Product Development.," *Organization Science: A Journal of the Institute of Management Sciences* (13:4) 2002, pp 442-455.
8. Christensen, C.M. *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Harvard Business School Press, Boston, 1997.
9. Cooke-Davies, T.J., and Arzymanow, A. "The maturity of project management in different industries: An investigation into variations between project management needs.," *International Journal of Project Management* (21) 2003, pp 471-478.
10. Crawford, K. "Improving Organizational Productivity with a Project Office," in: [http://www.pmsolutions.com/articles/pdfs/project\\_office/productivity.pdf](http://www.pmsolutions.com/articles/pdfs/project_office/productivity.pdf), 2002.
11. Damanpour, F. "Organizational Innovations: A Meta-analysis of Effects of Determinants and Moderators.," *Academy of Management Journal* (34:3) 1991, p 555.
12. Dewar, R.D., and Dutton, J.E. "The Adoption of Radical and Incremental Innovations: An Empirical Analysis.," *Management Science* (32:11) 1986, pp 1422-1433.
13. Eisenhardt, K.M. "Control: Organizational and Economic Approaches.," *Management Science* (31:2) 1985, pp 134-149.
14. Ettlie, J.E., Bridges, W.P., and O'Keefe, R.D. "Organizational Strategy and Structural Differences for Radical versus Incremental Innovation," in: *Management Science*, 1984, pp. 682-695.
15. Galbraith, J.R. *Designing Complex Organizations* Addison-Wesley, Reading, MA, 1967.
16. Garvin, D.A. *Managing Quality* Free Press, New York, 1988.
17. Grover, V., and Davenport, T.H. "General Perspectives on Knowledge Management: Fostering a Research Agenda.," *Journal of Management Information Systems* (18:1), Summer 2001, pp 5-21.
18. Hannan, M.T., and Freeman, J. "Structural Inertia and Organizational Change.," *American Sociological Review* (49:2) 1984, pp 149-164.
19. Harry, M., and Schroeder, R. *Six Sigma: The Breakthrough Management Strategy Revolutionizing the World's Top Corporations*. Currency, New York, 2000.

20. Hill, G.M. "Evolving the Project Management Office: A Competency Continuum.," *Information Systems Management* (21:4) 2004, pp 45-51.
21. Institute, P.M. *PMI Project Management Factbook: Second Edition* Project management Institute, Upper Darby, PA, 2001.
22. Institute, P.M. *Project Management Body of Knowledge (PMBOK), 3rd Edition* Project management Institute, Upper Darby, PA, 2004.
23. Jaques, T. "Imaginary Obstacles: Getting Over PMO Myths," in: <http://www.gantthead.com/Guru.cfm?pageNum=18>, 2001.
24. Jedd, M. "Solid Foundation.," *PM Network* (19:5), May 2005a, pp 65-68.
25. Jedd, M. "Up Wing," *PM Network* (19:6), June 2005b, pp 63-66.
26. Johnson, J., and Horsey, D.C. "The IT War Room.," *Software Magazine* (21:3) 2001, p 31.
27. Lawrence, P.R., and Lorsch, J.W. *Organization and Environment* Richard D Irwin, Homewood, IL, 1969.
28. Leonard-Barton, D. "Core Capabilities and Core Rigidities: A Paradox in Managing New Product Development.," *Strategic Management Journal* (13:5) 1992, pp 111-125.
29. Levine, H.A. "Does Your Company Need a CPO? (A Case for the Central Project Office and a Chief Project Officer)," in: [http://www.sciforma.com/resources/white\\_papers/CPO.htm](http://www.sciforma.com/resources/white_papers/CPO.htm), 2001.
30. Levitt, B., and March, J.G. "Organizational Learning," *Annual Review of Sociology* (14) 1988, pp 319-340.
31. March, J.G. "Exploration and Exploitation in Organizational Learning," *Organization Science: A Journal of the Institute of Management Sciences* (2) 1991, pp 71-87.
32. Miner, A.S., Bassoff, P., and Moorman, C. "Organizational Improvisation and Learning: A Field Study.," *Administrative Science Quarterly* (46:2) 2001, pp 304-337.
33. Pitts, R.A. "Diversification strategies and organizational policies of large diversified firms.," *Journal of Economics & Business* (28:3), Spring/Summer 1976, p 181.
34. ProjectArena "The PMO Conflict: So Much Promise, So Little Alignment," in: <http://www.projectarena.com/reference/wparchives.htm>, ProjectArena, 2003.
35. Rad, P.F. "Is Your Organization a Candidate for Project Management Office (PMO)?," *AACE International Transactions*) 2001, p 7.1.
36. Rad, P.F., and Raghavan, A. "Establishing and Organizational Project Office.," *AACE International Transactions*) 2000, p PM13.
37. Rosenkopf, L., and Nerkar, A. "Beyond Local Search: Boundary-Spanning, Exploration, and Impact in the Optical Disc Industry.," *Strategic Management Journal* (22:4) 2001, p 287.
38. Sambamurthy, V., Bharadwaj, A., and Grover, V. "Shaping Agility through Digital Options: Reconceptualizing the Role of Information Technology in Contemporary Firms.," *MIS Quarterly* (27:2) 2003, pp 237-263.
39. Sambamurthy, V., and Zmud, R.W. "A Conceptual and Measurement Approach for Examining IT Management Architectures," in: *Proceedings of the Annual Conference of the Administrative Sciences Association of Canada, Information Systems Division*, P. Todd and B. Gallupe (eds.), Lake Louise, Alberta, 1993, pp. 194-204.
40. Sambamurthy, V., and Zmud, R.W. "Arrangements for Information Technology Governance: A Theory of Multiple Contingencies.," *MIS Quarterly* (23:2) 1999, pp 261-290.
41. Simmonds, P.G. "The Combined Diversification Breadth and Mode Dimensions and the Performance of Large Diversified Firms.," *Strategic Management Journal* (11:5) 1990, pp 399-410.
42. Sorensen, J.B., and Stuart, T.E. "Aging, Obsolescence, and Organizational Innovation.," *Administrative Science Quarterly* (45:1) 2000, pp 81-112.
43. Swanson, E.B., and Ramiller, N.C. "Innovating Mindfully with Information Technology," *MIS Quarterly* (28:4) 2004, pp 553-583.
44. Walz, D.B., Elam, J.J., and Curtis, B. "Inside a Software-Design Team – Knowledge Acquisition, Sharing and Integration," *Communications of the ACM* (36:10) 1993, pp 63-77.