The Multi-Project PMO: A Global Analysis of the Current State of Practice

A White Paper Prepared for Project Management Institute by Dr. Brian Hobbs University of Quebec at Montreal, Quebec, Canada

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Forward

This document represents a significant research effort as well as a contribution to our understanding of the current state of multi-project PMOs globally. The paper is a factual documentation of key findings, and certain observations can be used as an initial step toward a meaningful dialogue throughout the practicing PMO community.

PMOs do not exist in a vacuum, rather they imbue the culture and context of their respective organizations. Accordingly, no two PMOs are truly identical as each organization, itself, is unique. This is an important recognition since any future guidance regarding the implementation and maintenance of successful PMOs must always consider the organizational context in which each PMO resides.

A second observation is that some commonalities do exist, albeit at both ends of a spectrum of possibilities. These "polarities" should also become the basis for dialogue by the practicing community; they are:

- The number of project managers within the PMO vs. those PMOs which have no project managers (Key Finding 7)
- The decision making authority of the PMO vs. its being purely supportive in nature (Key Finding 9)
- The state of maturity vs. non-maturity of the organization (Key Finding 14)

Beyond these "polarities" the paper identifies five independent groups of PMO functions which again represent an initial focus for dialogue. These groups represent some element of commonality among the myriad of PMO types but are not aligned to any one type. The functional groups are fully discussed in Key Finding 11. They are:

Group 1: Monitoring and Controlling Project Performance

- Group 2: Development of Project Management Competencies and Methodologies
- Group 3: Multi-Project Management
- Group 4: Strategic Management
- Group 5: Organizational Learning

While these represent some commonalities as determined by statistical analysis of the data, they must be viewed and interpreted within the enveloping context of the individual organization.

PMI hopes that this document will stimulate thought, dialogue and insight, such that future steps may become evident toward creating some form of guidance regarding the implementation and maintenance of successful PMOs. We hope you will take the time to provide your insight on this important topic to project management. Your comments are appreciated and can be voiced by accessing the following URL: http://www.keysurvey.com/survey/150674/1a02/

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Table of Contents

About the Author and Acknowledgements
Forward
Table of Contents
Executive Summary
Introduction
Key Findings at a Glance
Key Findings:
The Value of PMOs1. Lack of consensus as to the value of PMOs.10
Organizational Form and Descriptive Characteristics2. Relative consensus on the name "Project Management Office" 113. Stand alone nature of PMOs
 Roles and Functions 10. Highly variable roles and functions
Characteristics of High-Performing PMOs 14. A cluster of characteristics associated with performance
Variation with Context 17. No systematic variation by economic sector, by region, by organizational size or between public and private organizations
Conclusions
Appendices

Executive Summary

Project management offices (PMOs) have become an important feature of project management as it is practiced today. However, there is a lack of consensus on many critical aspects of PMOs. Because the Project Management Institute's (PMI's) standards are based on consensus, it is difficult for the Institute to produce a standard when there is a lack of agreement among practitioners.

The objective of this report is to provide a realistic description of the current state of practice. To accomplish this goal, a web-based survey was designed to gather descriptive data on PMOs. The questions were formulated so as to gather a factual description more than an evaluative opinion. Each respondent was asked to describe one PMO; the survey collected the descriptions of 500 PMOs.

PMI's medium-term goal is to build on this description, using it as the starting point for a series of activities to improve understanding of PMOs. Ideally, PMI will, at some future date, complete a consensus-based global document to provide the profession with guidance in the establishment and maintenance of successful PMOs.

A PMO is a rather complex organizational entity; an adequate description requires that several different characteristics be examined. The many different aspects that were examined in the study are grouped into the following four core elements:

- Value
- Organizational context
- Form and structure
- Roles and functions

The most significant overall finding is the great variety and lack of consensus on the following:

- The value of PMOs
- The structure of PMOs
- The functions included in their mandates.

The results show that the structures, roles, and legitimacy of PMOs vary significantly from one organization to the next. The organizational reality surrounding PMOs is complex and varied. Organizations establish a great

Key elements examined:

- Value
- Organizational context
- Form and structure
- Roles and functions

variety of different PMOs to deal with their needs. Organizations may decide to include some or all of their project managers within the PMO, or they may place them elsewhere within their structures. The PMO's mandate may cover all the organization's projects or only a select few. Organizations choose from among a number of possible roles or functions when deciding upon the mandate to give to a PMO. They also choose between a PMO in a support role with little or no authority and a PMO with considerable decision-making power. These organizational design choices create PMOs of varied form and function.

Analysis of the survey data has not clearly identified the specific determinants of PMO structures and roles, nor, ultimately, their ability to add value to the organization. The analysis of PMOs in organizations of different size, in different geographic regions and industries, has not revealed significant differences in their structures, roles, or performance. It is very likely that the determinants are largely internal to the organization, related to its internal dynamics, strategy, structures, processes, culture and politics, i.e., the organizational context. Implementing or restructuring a PMO is an organizational change and organizational changes tend to be pervasive, touching many parts of the organization in many, often subtle ways. Organizational restructuring is related to both organizational strategy and politics. A significant organizational change will have an impact on PMOs, their structures and their roles within the organization. Likewise, successfully implementing or restructuring a PMO will inevitably have an impact on the organization. A co-evolutionary process is in play whereby the PMO and the rest of the organization interact and evolve together.

The lack of consensus on many critical aspects of PMOs and the need to artriculate guidance for the profession on this important topic are driving factors in the need for further research. PMI's aim is to encourage and facilitate the development of the understanding necessary to provide guidance for the profession in establishing and maintaining successful PMOs.

You can also do your part! This document lays the foundation for dialogue among the experts in PMOs worldwide. Once you have completed reading this document we would appreciate hearing your comments. Please access the following URL to voice your opinions:

http://www.keysurvey.com/survey/150674/1a02/

Introduction

The objective of this paper is to provide a realistic description of the current state of practice.

- Project Management Offices (PMOs) are important entities in the current practice of project management globally.
- A web-based survey was designed to gather descriptive data more than evaluative opinions on PMOs. Each respondent described one PMO. The survey resulted in 500 usable responses for subsequent analysis. The survey was global in reach.
- There is no clear consensus among practitioners as to what constitutes a PMO in a generic sense; therefore, development of a global standard cannot be presently considered.
- The purpose of the investigation, results herein reported, is to provide the profession with the current state of PMO practice and to stimulate the necessary dialogue to eventually develop guidance for the profession in establishing and maintaining successful PMOs.
- To differentiate from acknowledged definitions of PMOs as being either a single project PMO (project office) or a multi-project PMO, the study exclusively focused on multi-project PMOs, defined herein as follows:
 - An organizational entity:
 - That fills several roles or functions
 - With respect to a group of projects
 - May or may not be named a PMO.

Value

- The value of PMOs to the organization was assessed by determining the following:
 - The degree of consensus regarding the value of the PMO to the organization
 - Characteristics identified with high- or low-performing PMOs.



- A PMO is not an isolated entity; rather, it is an integral component of the host organization's practice of project management.
- To understand the PMO, the organizational context must be defined:
 - Economic sector
 - Public or private
 - Size of organization
 - Number, size, and duration of projects
 - Level of organizational project management maturity
 - Percentage of resources that report to the same management as the PMO manager or that are matrixed throughout the organization
 - Internal or external project clients
 - Number of clients involved
 - Level of organizational support
 - Organizational culture as it relates to the PMO.

Form and Structure

- An adequate description of the way an existing PMO is set up requires the evaluation of several dimensions:
 - Number of PMO employees
 - Percentage of projects within the mandate of the PMO
 - Percentage of project managers within the PMO
 - Age of the PMO
 - Decision-making authority of the PMO
 - Structural location within the organization
 - Relationship(s) with other PMO(s)

Roles and Functions

• What is the PMO's mandate within the organization? The survey identified the importance of 27 functions commonly assigned to PMOs.

Analysis

• The portrait of PMOs presented herein is based on a description of the variables in each of the four key elements: value, organizational context, form and structure, and roles and functions. The analysis also identified certain characteristics of PMOs that are statistically associated with perceptions of their value.

Key Findings at a Glance

The most significant overall finding is the great variety and lack of consensus on the following:

- The value of PMOs
- The structure of PMOs
- The functions included in their mandates.

• The Value of PMOs

- 1. Lack of consensus
- Organizational Form and Descriptive Characteristics
 - 2. Relative consensus on the name "Project Management Office"
 - 3. Stand-alone nature of PMOs
 - 4. Frequent closure and restructuring of PMOs
 - 5. Implementation time for PMOs is 24 months
 - 6. PMO mandates cover a select group or the majority of projects
 - 7. Project managers within the PMO: all or none
 - 8. Small staff size for most PMOs
 - 9. Significant variation in decision-making authority

• Functions and Roles of PMOs

- 10. Highly variable roles and functions
- 11. A fundamental structure underlying a myriad of functions
- 12. High-performing PMOs are not defined by a particular function
- 13. Centrally located PMOs have a different mandate

• Characteristics of High-Performing PMOs

- 14. A cluster of characteristics associated with performance
- 15. Expertise is critical to PMO performance
- 16. Characteristics of PMOs perceived as costly and useless
- Variation with Context
 - 17. No systematic variation by economic sector, by region, by organizational size or between public and private organizations.

Each of the key findings is presented in detail on the following pages. The details of the methodology are provided in the appendix along with the demographic data. PMI hopes that this white paper stimulates the necessary dialogue and debate to eventually provide a forum for the development of guidance for the profession in the establishment and maintenance of successful PMOs.

Reality is even darker

A survey of this type has a positive bias, particularly on evaluative questions such as this. People that are interested enough to respond to the invitation to participate in the survey tend to have a positive attitude on the topic of the survey. Those that are unfavorable and strongly opposed tend not to respond.

In this survey, there is an additional positive bias created by the fact that organizations that have shut down their PMO or have decided not to implement one have not responded to this questionnaire. The extent of the bias is difficult to estimate, but it is not unreasonable to conjecture that about half of organizations are critical enough of PMOs to decide not to implement one or to seriously consider shutting down or significantly changing theirs if they already have one.

Key Findings

The Value of PMOs

KEY FINDING 1: There is a lack of consensus as to the value of PMOs.

- 50% of PMOs are valued by their organizations.
- The other 50% are being challenged.
- The glass is both half full and half empty when it comes to the legitimacy of PMOs.

Respondents were asked, "Has the relevance or even the existence of the PMO been seriously questioned in recent years?" Fifty-eight percent of respondents indicated that the relevance and existence of their PMO was not questioned. It can be concluded that these PMOs are meeting the organization's expectations. On the other hand, 42% of PMOs are not meeting expectations and can thus be seen as less legitimate within their organizational context.

The performance of a PMO is multidimensional. A small number of other performance measures were used in this survey. They were all highly

correlated with the global measure of "PMO relevance and legitimacy." These high correlations indicate that the global measure is capturing many aspects of PMO performance.

A LACK OF CONSENSUS in the project management community is clearly identified. About half of PMOs are seen as relevant and creating value within their organizational context. This level of strong support for PMOs combined with the large number of PMOs currently in existence underscores the importance of PMOs in project management practice today. On the other hand, the relevance and value of PMOs are being questioned almost as frequently. Is the PMO a best practice? About half the project management community seems to be saying "yes," and the other half seems to be saying "no." The glass is half full or half empty, depending on the perspective.





The following sections are devoted to a better understanding of the variability of PMOs in practice.

- The results of the analysis of the structure and the functions of PMOs are presented in Key Findings 2 through 13.
- Once the variability of structure and function have been discussed, Key Findings 14 through 16 present PMO characteristics that are associated with performance as it has been presented in Key Finding 1.

Organizational Form and Descriptive Characteristics

KEY FINDING 2: There is a relative consensus on the name "Project Management Office."

Of the entities described in the survey:

- PMOs have a wide variety of names.
- Although there is not an absolute consensus on the name, only one name stands out as being used very frequently.
- 59% are named "Project Management Office" or "PMO."

The majority of entities described in the study are called "Project Management Offices." However, many of these organizational entities are given a great variety of other names. The distribution of names is presented in the table below.

Names of Organizational Entities

NAME	PERCENTAGE	
Project Management Office	59%	
Name containing the term "project" and somewhat similar to project management office, e.g., project department	4%	
Project Support Office	7%	
Project Office	2%	
Program Management Office	12%	
Center of excellence	2%	
No name	2%	
Other (a great variety with none greater than 1%)	12%	

- The label "Project Management Office" is not a good indicator of what the entity is or does.
- "Project Management" and "Program Management" offices are not significantly different in structure or in their roles.
- A "Project Office" often manages multiple projects.

Project Office: The number of entities bearing the title "Project Office" is certainly much greater than these results indicate. This label is often used to name an entity responsible for the management of a single large project. The survey instructions asked specifically that informants not describe this type of unit in responding to the questionnaire. An examination of the 2% of responses describing entities with this label indicates that these are multiproject entities similar to those labeled PMO. They have, therefore, been included in the sample.

Program Management Office: A total of 12% of responses describe entities labeled as "Program Management Offices." This group of responses was compared to those labeled as Project Management Offices, and no statistically significant differences were found between the two. The program management function is more important for those labeled program management office, but the difference is not statistically significant. Program management is very often part of the role of the PMO whether it is labeled a project or a program management office. The analysis that follows is, therefore, based on the entire sample, including both project and program management offices. See key findings 10 and 11 for data on the importance of the program management function.

No Name: Interestingly, 2% of respondents describe entities that exist in their organizations but have no official label and, therefore, do not appear on the organizational chart. It is quite plausible that these entities have been created to fill a real need but their existence has not yet been made official. It is also plausible that because of a previous failed attempt to implement a PMO, or for some other reason, some PMOs are maintaining a low profile.

ALTHOUGH A MAJORITY of the entities in this survey are "Project Management Offices" a vast array of other names are currently being used in practice. In many cases, names do not clearly differentiate PMOs.

KEY FINDING 3: The majority of PMOs are stand-alone in nature.

- PMOs can be located in different parts of the organization.
- Most PMOs (78%) are the only such entity in their organization or are unrelated to other PMOs that do exist.
- However, in 22% of cases, the PMO is linked to at least one other PMO in the same organization. Understanding this latter group will require an investigation of groups of PMOs and their interrelated mandates.

Each respondent to the survey described one particular PMO. However, PMOs can be placed in different locations within the organizational structure, and some organizations have more than one. The following table presents the classification of PMOs in the sample. This data can be grouped in different ways to explore different aspects of the number and location of PMOs.

Classification of PMOs

LO	CATION IN THE ORGANIZATION	PERCENTAGE
1	Only one centrally located PMO	30%
2	Only one PMO located in a business, functional, or regional unit	23%
3	PMO located in business, functional, or regional unit; no relationship with a more central PMO	25%
4	Central PMO in a hierarchy of interrelated PMOs	8%
5	A hierarchy of interrelated PMOs. This PMO is located in a business, functional, or regional unit and is related to a more centrally located PMO.	14%

As would be expected, smaller organizations (less than 1,000 employees) are less likely to have multiple PMOs; 77% have only one. However, even in larger organizations with more than 10,000 employees, only 30% reported having multiple interrelated PMOs. Thus, even in large organizations, the autonomous PMO seems to be the norm.

EACH OF THE SITUATIONS described in the above table and each of the different groupings highlights various ways of describing and analyzing the location of PMOs in organizations. This is one aspect of the variety found among PMOs in different organizations.

The characteristics of the centrally located PMO are examined in Key Finding 13.

- 53 percent of organizations have only one PMO (lines 1 + 2).
- 78 percent of PMOs operate autonomously from other PMOs (lines 1, 2 + 3).
- Twenty-two percent of PMOs are in hierarchical or network arrangements (lines 4 + 5).
- Thirty-eight percent of PMOs are centrally located (lines 1 + 4).
- Sixty-two percent of PMOs are in business, functional, or regional units (lines 2, 3 + 5).

KEY FINDING 4: Closure and restructuring of PMOs occurs frequently.

- 17% of PMOs have been in existence for more than five years.
- 54% have been in existence for two years or less.
- PMOs are frequently closed or restructured, which is consistent with the fact that many are being challenged.

PMOs have been popular since the middle to late 1990s. Somewhat paradoxically, most PMOs in existence today are rather recent creations. The figure below shows the age distribution of PMOs in the sample. More than half the PMOs in existence today were created in the last two years. Two phenomena are at work producing this situation:

- New PMOs are being created at a relatively high rate.
- PMOs are being shut down or radically reconfigured at a similar rate.



Age Distribution of PMOs

AS WAS SHOWN in Key Finding 1, approximately half of the PMOs in existence are seeing their relevance or very existence questioned. Their often-precarious existence explains their frequent restructuring or demise, which has led to a population dominated by young PMOs. In this context, a PMO often has only a short time to demonstrate its ability to create value before it is restructured or closed down. This frequent restructuring may be an indication that organizations are experimenting with PMOs and have not yet found an adequate fit for them in their respective structures.

KEY FINDING 5: The implementation time for PMOs is six to 24 months.

• In the majority of cases, respondents reported that the time taken to implement the PMO was between six months and two years.



Time Taken to Implement a PMO

THE TIME TAKEN TO IMPLEMENT a PMO is shown in the graph above. In 63% of cases reviewed, a PMO took between six months and two years to implement. In only 16% of cases was it less than six months. This finding indicates that many PMOs are being closed or restructured before they are fully implemented, another sign of the precarious situation in which many PMOs exist.

KEY FINDING 6: The PMO's mandate covers a select group of projects or the vast majority of projects.

- The majority of PMOs are in one of two extreme situations of having a mandate that covers either the vast majority of the organization's projects or a select group of projects.
- A minority is in the middle ground.
- This is one of the characteristics on which PMOs vary the most.

Key Findings 6 and 7 explore the issues of what proportion of projects and project managers are allocated to the PMO. In order to grasp the reality of the situation, first it must be determined what constitutes the whole set of possible projects and project managers. The information on the location of the PMO presented in Key Finding 3 shows that 62% of PMOs are located in business, functional, or regional units. This being the case, respondents were asked to focus on projects and project managers present in the "organizational unit in which the PMO is active," explicitly stating that this could be the entire organization, a division, a department or any other part of the organization. The proportions of projects within the PMO's mandates are presented below.



Percentage of Projects Within the Mandate of the PMO

THE COMMON THEME throughout the results related to PMO structure is the great variability of organizational design. The variation among PMOs as to the percentage of projects within their mandates is extreme. The distribution is almost bipolar, with more PMOs at each extreme than in the middle ground. It is no wonder that PMOs have very different organizational mandates!

KEY FINDING 7: Either all or none of project managers are located within most PMOs.

- The variation as to the percentage of project managers that are located within the PMO is even more extreme, to the point that in the majority of cases either 100% or 0% of the project managers are in the PMO.
- These are two very different situations that lead to very different roles for the PMO in the management of projects.

The percentages of project managers within the PMO are shown in the chart below, which isolates the extreme responses of "all" and "none." The majority of PMOs are in one of these two extreme situations. In one case, the PMO has the responsibility for managing all the organization's projects. In the other, it has no project managers and no projects for which it is responsible. As would be expected, there is a high correlation between the percentage of projects and the percentage of project managers (p=0.000).¹ In the case where all the project managers are in the PMO, the PMO's activity must be dominated by the actions required to manage all these projects and project managers. In the case where no project managers are within the PMO, the PMO's activities must be dominated by other functions.



Percentage of Project Managers Within the PMO

THE PRESENCE OR THE ABSENCE of project managers divides PMOs into two radically different types. These two extremes correspond to PMOs with responsibility for the active management of projects in the hands of their project managers, and PMOs that have strictly a staff function with no project managers; two very different realities. Statistical associations are reported throughout using the format p=0.000, which states the probability of being incorrect when asserting that a statistical association exists. In this case, the probability of error is less than one chance in 1,000. This is a very strong relationship. PMO staff is overhead and organizations are very reluctant to create overhead expenses.

KEY FINDING 8: Most PMOs have a very small staff.

Most PMOs have very little staff other than the project managers.The issue of the cost of overhead is key for PMOs. It creates a

somewhat paradoxical situation where the PMO is asked to take on many functions but with few resources.

The data presented in the graph below is for staff other than project managers, and includes the manager in charge of the PMO.



Personnel of PMO Excluding Project Managers (full-time equivalents)

As can be seen from the data presented in this graph, the vast majority of PMOs have very few resources other than project managers:

- Fifty-nine percent have between two and seven people.
- There is less dispersion among the population of PMOs with respect to the size of their staff than there is for many of the other variables describing their structures. However, there is a significant minority (16%) with only one person, often part-time, assigned to the PMO.
- At the other end of the distribution, 25% have eight people or more.

A regression analysis was done to identify the study variables that provide the best explanation of the variation in size. The analysis revealed that four variables could explain 26% of the variation in the staff size of PMOs. Given the high variance and the large number of variables in the study, the identification of only four that can explain such a large part of the variance is a strong result. The variables are the size of the projects, the number of projects, the total number of functions within the PMO's mandate, and the size of the organization. These four variables are obviously linked

to the amount of work to be accomplished. There is nothing surprising here. Part of the explanation of the size of PMO staff can be found in the inherent economic rationality of organizations. This staff is overhead, and organizations are very reluctant to create overhead expenses. As was discussed under Key Finding 1, on the value of PMOs, many PMOs are being challenged within their organizational context, and the costs they incur and their value for money are among the critical issues they often face.

Analysis of the data revealed no statistically significant relationship between the size of PMO staff, excluding project managers, and the measures of performance. This may indicate that larger PMOs are accomplishing more work and can be perceived as valuable within their organizational context. As will be discussed in the key findings on the functions of the PMO, the number of functions within their mandates is considerable. This may create a somewhat paradoxical situation where the PMO is asked to take on many functions but with few resources.

MOST PMOs HAVE few staff other than project managers. As would be expected, the larger PMOs are found in large organizations and have mandates that cover more functions are larger projects. PMO staff is often regarded as overhead, which organizations are reluctant to authorize or maintain.

Key Finding 9: Decision-making authority of a PMO varies significantly.

- The level of decision-making authority of PMOs varies significantly:
- A significant number have either no authority at all or very extensive authority.

The distribution of decision-making authority is close to a normal distribution but with very high variance, as shown in the graph below.



Decision-Making Authority of PMOs

MANY PMOS are in a passive or supporting role with little or no decision-making authority while others have considerable authority to make decisions to allocate resources, set priorities, or initiate, change, or cancel projects. These are two very different organizational roles, illustrating the great variety of roles that different organizations assign to their PMOs.

Roles and Functions

Key Finding 10: PMOs fill highly variable roles and perform a wide range of functions.

The mandates of PMOs cover a wide range of different roles and perform a wide range of functions:

- The survey identified 27 functions, the relative importance of which varies considerably.
- All the functions are important for at least 22% of PMOs

Twenty-seven staff functions that are frequently part of the mandates of PMOs were identified in the survey instrument. The role of "managing projects" has been excluded from this list. As was seen above, many PMOs have significant numbers of project managers managing projects, while others have none. Considerable effort was invested in producing and validating this list though literature reviews, pre- and post survey tests and by asking respondents to identify additional roles or functions not included in the list.

The respondents reported the importance of each of these functions for their PMO using a scale ranging from 1 (not important at all) to 5 (very important). The table on the next page shows the percentage of PMOs in which each function was scored either 4 (of considerable importance) or 5 (very important).

PMOs fill many different roles or functions in different organizations. The terms "role" and "function" are used to identify the content of the PMO's mandate within the organization. They are used interchangeably.

21 of the 27 functions are important for at least 40% of PMOs

PMO Functions in Decreasing Order of Importance

PMO FUNCTION	% OF PMOS WHERE IMPORTANT
Report project status to upper management	83%
Develop and implement a standard methodology	76%
Monitor and control project performance	65%
Develop competency of personnel, including training	65%
Implement and operate a project information system	60%
Provide advice to upper management	60%
Coordinate between projects	59%
Develop and maintain a project scoreboard	58%
Promote project management with organization	55%
Monitor and control performance of PMO	50%
Participate in strategic planning	49%
Provide mentoring for project managers	49%
Manage one or more portfolios	49%
Identify, select and prioritize new projects	48%
Manage archives of project documentation	48%
Manage one or more programs	48%
Conduct project audits	45%
Manage customer interfaces	45%
Provide a set of tools without an effort to standardize	42%
Execute specialized tasks for project managers	42%
Allocate resources between projects	40%
Conduct post-project reviews	38%
Implement and manage database of lessons learned	34%
Implement and manage risk database	29%
Manage benefits	28%
Conduct networking and environmental scanning	25%
Recruit, select, evaluate and determine salaries for project managers	22%

In the minds of many practitioners, PMOs are associated with particular roles or functions. It is not uncommon to hear statements such as, "A PMO is an entity that develops and implements a standardized project management methodology." The table above confirms that 76% of PMOs are heavily involved in this function. But to define PMOs by associating them with a particular function or group of functions is out of line with organizational reality.

Members of the project management community very easily recognize most of the functions listed here. However, some functions have come into prominence only recently. Program management (48%) and portfolio management (49%) are shown as quite important despite the fact that they only recently became the focus of much attention with the development of "enterprise or organizational project management", and the recent release by PMI of new standards for both program and portfolio management. Benefits management (28%) is an even more recent phenomenon in the project management community and literature. Many members of the community are as yet unfamiliar with this practice, which may explain it being considered relatively less important.

It may seem surprising that 50% of PMOs consider monitoring and controlling the performance of the PMO itself as important. However, this is consistent with, and likely a consequence of, the fact that the value of PMOs and the justification of the expenses they generate are often brought under scrutiny and questioned. Many PMOs are under pressure to justify their existence and show value for money. In addition, some PMOs monitor their own performance to support continuous improvement and organizational learning.

ALL 27 OF THE FUNCTIONS are important for significant numbers of PMOs, and 21 of the 27 are important for at least 40% of PMOs. This result again illustrates the extreme variety found among different PMOs in different organizations and the difficulty in providing a simple and accurate description of what PMOs are and what roles they fill.

Managing 27 different functions is fastidious. Identifying groups of functions greatly simplifies the design, redesign, description and analysis of PMOs.

The groups of functions are presented in decreasing order of the average importance of the functions included in the group on a scale of 1 to 5. The average importance for each group is indicated in parentheses. Within each group, the functions are presented in decreasing order of average importance.

KEY FINDING 11: A fundamental structure underlies the myriad of functions filled by PMOs.

- Some functions are logically and statistically associated with each other.
- Grouping reveals the underlying structure of PMO functions.
- Identifying natural groups of functions reduces the variety from 27 to eight, making the list much more manageable.

Grouping can be defined conceptually by identifying practices that are logically related. For example, reporting project status to upper management requires that project performance be monitored, which can best be done with a project information system and a project scorecard. These functions are thus logically related. One would expect to find that PMOs filling one of these functions would also have a tendency to fill the others.

The tendency to fill functions in groups can also be identified and measured through statistical associations. Factorial analysis was used to identify such groupings. Functions that are grouped together through factorial analysis are tightly associated statistically with each other and statistically independent from the other functions and groups of functions. These independent groups constitute the dimensions of the fundamental underlying structure. The factorial analysis identified five groups of functions:

- The five groups account for 24 of the 27 functions.
- The three remaining functions are important but not related statistically nor conceptually to the groups or to each other.
- The grouping of functions has thus allowed the reduction of the list from 27 to eight: five independent groups and three independent functions.

Group 1: Monitoring and Controlling Project Performance (3.82)

The group of functions related to the monitoring and controlling of project performance is the most important group. This group includes the monitoring, controlling, and reporting of project performance as well as the management of the computer-based tools to do these tasks. PMOs with these functions are providing the information that managers need to maintain visibility, and to control the performance of projects for which they are responsible. In so doing, the PMO is supporting project governance functions. The interrelation of these functions was discussed above:

- Report project status to upper management.
- Monitor and control project performance.
- Implement and operate a project information system.
- Develop and maintain a project scoreboard.

Group 2: Development of Project Management Competencies and Methodologies (3.54)

The group of functions most traditionally associated with PMOs includes functions dealing with tools and methodologies and with competency development. This group is composed of the following functions:

- Develop and implement a standard methodology.
- Promote project management within the organization.
- Develop competency of personnel, including organizing through training.
- Provide mentoring for project managers.
- Provide a set of tools without an effort to standardize.

The development and implementation of tools and methodology and the provision of project management training and mentoring are the functions many people associate with PMOs. The PMO with these functions is often in the role of promoting the use of the methodology, the development of competencies, and project management in general. The survey showed that these functions are more important in centrally located PMOs.

Group 3: Multi-Project Management (3.23)

Some PMOs have mandates to manage whole sets of projects in a coordinated fashion. Managing whole sets of projects often involves program or portfolio management. These have become important aspects of project management, as signaled by the identification of project, program, and portfolio domains in *OPM3*[®] and the publication by PMI of standards on program and portfolio management in 2006. The coordination of interdependencies within programs and portfolios is a central issue in multiproject management, as can be seen from the functions in this group:

- Coordinate between projects.
- Identify, select, and prioritize new projects.
- Manage one or more portfolios.
- Manage one or more programs.
- Allocate resources between projects.

Group 4: Strategic Management (3.06)

There has been a tendency in recent years for project management in general, and PMOs in particular, to become more involved with issues of strategic alignment and to become more closely tied to upper management.

Each group was examined to ensure that it was internally consistent in both conceptual and practical terms. The factor analysis revealed that the following group of functions related to strategic management constitutes one of the underlying dimensions of PMO roles:

- Provide advice to upper management.
- Participate in strategic planning.
- Manage benefits.
- Conduct networking and environmental scanning.

Involvement in these functions brings project management and the PMO closer to upper management. Networking and environmental scanning are used to keep abreast of current development so as to give up-to-date advice to upper management. The survey also showed that these functions are more important in centrally located PMOs.

Group 5: Organizational Learning (3.00)

Organizational learning has been a very important topic in the management literature and practice in recent years. Some PMOs are actively involved in organizational learning through the following group of functions:

- Monitor and control the performance of the PMO.
- Manage archives of project documentation.
- Conduct post-project reviews.
- Conduct project audits.
- Implement and manage database of lessons learned.
- Implement and manage risk database.

The last four functions in this group are very directly related to organizational learning. An examination of the list of 27 functions and their relative importance provided in the discussion of Key Finding 10, "PMOs fill highly variable roles and perform a wide range of functions," shows them to be among the least important functions. It can be seen that although organizational learning is of considerable importance, it is often seen as less important than other functions more directly related to operational or strategic issues.

The first two functions in this group are related to organizational learning also but can be deployed in the pursuit of other objectives. Archiving project documentation has important operational aspects. The function to "monitor and control the performance of the PMO" can be seen as part of the learning feedback loop. Recent interviews with PMO personnel have revealed

The role of PMOs in organizational learning is more pervasive than this group of functions indicates. Several functions in the "Group 2: Development of Project Management Competencies and Methodologies" are directly related to organizational learning. The development of tools and methods and competency is based on organizational learning. The scanning function in the group of functions related to strategic management is also an organizational learning tool. These functions are related organizational to learning in both conceptual and practical ways.

that some PMOs specifically use the evaluation of the performance of their PMO in an organizational learning perspective. Project management in general and PMOs in particular are participating in the general trend toward the increased importance of organizational learning.

Additional Functions Not Included in the Groups of Functions

The factorial analysis produced the five groups of functions presented above. Three functions not included in these groups complete the list of 27 functions identified in the study. These three functions are excluded from the groups not because they are not important but because their presence is neither statistically nor conceptually related to these groups. The remaining functions are presented below in decreasing order of importance:

Execute specialized tasks for project managers—e.g., prepare schedules (3.05)—Many PMOs provide specialized services to project managers and project teams. In order to execute these tasks, PMOs maintain specialized resources on their staff. The preparation of schedules is a common example, but such services can include many other areas of specialization, such as contract and risk management.

Manage customer interfaces (2.84)—Some PMOs have the responsibility of managing customer interfaces. Responsibility for this activity depends to a great extent on the type of customer, and not all PMOs are in a position to fill this role. On the average, managing the customer interface is more important for PMOs with customers that are external to the organization. A PMO responsible for all the projects for a given customer may well have an important role to play in managing this customer interface; a PMO responsible for an outsourcing contract would be such an example.

Recruit, select, evaluate, and determine salaries for project managers (2.35)—This is the least important function for PMOs, but it remains important for 22% of PMOs. The human resources (HR) department in most organizations carries out these HR activities, but the involvement of PMOs in these activities is considered important in some contexts. PMOs fit into very different organizational realities regarding HR management relative to project managers.

Implications for Theory and Practice

The fact that the underlying high-level functions are statistically independent of each other is an indication that they identify a fundamental or deep structure. The identification of this underlying structure among PMO functions has profound consequences for both theory and practice. From both points of view, a few high-level functions are much more manageable than the long and unorganized list of possible functions. From the point of view of theory building, the identification of the structure that underlies the role of PMOs in organizations provides a key to understanding the fundamental roles of project management and of PMOs in the creation of value in organizational contexts. This question is at the heart of project management research at the present time. From the point of view of managers and practitioners, identifying the underlying structure greatly simplifies the task of analyzing and understanding existing PMOs and the task of designing or restructuring PMOs.

THE EXISTENCE OF A STATISTICAL and conceptual link between two or more functions does not mean that they are, or should always be, implemented together. The statistical and conceptual links are too weak for this to be the case. Organizations must use considerable judgment when deciding which functions the PMO is mandated to fill. On the average, the monitoring and controlling of project performance is the most important group of functions. The rank ordering of the groups of functions may be misleading. All are important, and the differences in the levels of importance are small. In any particular context, any one of them may be the most important. This reinforces the need to adapt to the organizational and strategic context when deciding which functions to include within the mandate of a particular PMO.

KEY FINDING 12: High-performing PMOs are not defined by a particular function.

- High-performing PMOs are not associated with a particular function.
- Over the entire population, the importance of each and every function is related to PMO performance.
- The important functions are determined by the specific organizational context.

Although many people tend to define PMOs by the specific functions they fill, the data across the entire population does not support this perception. The importance of each and every function is associated with PMO performance (p=0.000). As would be expected, the total number of important functions is also associated with PMO performance (p=0.000). PMO performance is not related to any specific function across the entire population.

A REASONABLE INTERPRETATION of this result is that high performing PMOs are perceived as filling several important functions, but the important functions are determined by the needs of their specific organizational context. The important functions are determined by the specific organizational context.

KEY FINDING 13: Centrally located PMOs have a different mandate.

- The location of the PMO has an impact on the mandate it is given.
- Centrally located PMOs have a bigger role in strategic functions and in the development of competencies and standardized methodologies.

Centrally located PMOs

- A different mandate
- Variation in structures
- Variation in perceived value

The comparison between centrally located PMOs and those located in business, functional or regional units reveals that centrally located PMOs are more often involved in strategic functions (p=0.000) and in functions to develop competencies and to standardize methodologies (p=0.001).

THESE DIFFERENCES IN THEIR mandate are the only characteristics that differentiate the centrally located PMOs from the others in a statistically significant and systematic manner. Other structural characteristics do not differentiate centrally located PMOs. Likewise, they are not perceived as more or as less valued than other PMOs.

Characteristics of High-Performing PMOs

KEY FINDING 14: A cluster of distinct characteristics is associated with PMO performance.

A small group of characteristics of PMOs and of their organizational contexts is strongly linked to PMO performance:

- The relationships among these characteristics are circular and mutually reinforcing.
- The link to performance is not absolute.
- Many PMOs that do not have these characteristics perform very well, and some that do, perform poorly.

The measures of PMO performance were discussed under Key Finding 1. The most direct measures of PMO performance in this study are whether or not the relevance and existence of the PMO are questioned, in other words, the legitimacy and relevance of the PMO.

The analysis identified the following variables as being strongly associated with PMO performance:

- PMO structural characteristics associated with PMO performance:
 - Percentage of projects within the mandate (p=0.024)
 - Percentage of project managers located within the PMO (p=0.039)
 - Decision-making authority of PMO (p=0.000).
- Characteristics of organizational context associated with performance
 - Supportive organizational culture (p=0.001)
 - Project management maturity of the organization (p=0.001).

Percentage of PMOs Who's Relevance Is Called into Question

		PERCENTAGE OF PROJECTS WITHIN MANDATE	
		LESS THAN 20%	MORE THAN 80%
RELEVANCE	Yes	52%	33%
QUESTIONED	No	48%	67%
	Total	100%	100%

Strong statistical associations have been identified. However, care must be taken in interpreting these results. The existence of a statistical association is not a prescription to design all PMOs accordingly. The table above shows the relationship between the percentage of projects within the PMO's mandate and the frequency with which the PMO's relevance or legitimacy is called into question. The statistical association between the two variables has less than

one chance in 1,000 of being wrong. This means that using the percentage of projects as a predictor of performance produces better than chance results. However, PMOs with a mandate covering a small percentage of projects have as good a chance of being high performers, as can be seen with the even split under "Less than 20%." On the other hand, PMOs with a large proportion of projects have twice as much chance of being high performers, as opposed to poor performers, as can be seen by the one third / two third split under "more than 80%." To extract a prescription from this data that PMOs should have most of the organization's projects within their mandates is misleading and potentially dangerous. Something in a particular organizational context may make this prescription inappropriate. Furthermore, changing an existing PMO that has few projects in its mandate has an even chance of bringing about change to a PMO that is functioning well as it is presently structured.

The statistical association between PMO performance and each member of this group of variables (percentage of projects, percentage of project managers, decision-making authority, supportive culture and project management maturity) is very similar to that shown in the table. The link to a supportive organizational culture is slightly stronger but not absolute.

A small group of variables explains 21% of variance in PMO legitimacy and relevance

2 Because the percentages of projects and project managers are highly correlated, including both variables in the regression model does not increase the predictive power. The variables in this group are statistically associated with each other. A regression analysis was conducted in order to identify the overall association between this group of variables and PMO performance. The analysis revealed that collectively this group of variables could explain 21% of the variation in PMO performance.² Although this is very significant, this group of variables does not explain a large portion of the variation in performance. This result reinforces both the variables' collective importance and the need for caution when drawing conclusions based on this result.

The relationships within this group of variables and with performance are likely to be circular and mutually reinforcing. The identification of a statistical association does not indicate the direction of the causal relationship. It is plausible that mutually reinforcing influences exist among organizational characteristics, PMO characteristics and PMO performance as these phenomena co-evolve over time. This co-evolution is represented pictorially in the following figure.



For example, the statistical association between organizational project management maturity and PMO legitimacy does not reveal the nature of the relationship between the two variables. It may well be that the PMO is highly considered in an organization that is mature in project management because project management is valued in this organization. On the other hand, it may be that a high-performing PMO has raised the level of project management maturity in the organization. Likewise, a PMO in an organization that is mature in project management and has a supportive organizational culture is likely to have more influence on decisions than in a less mature and less supportive organization. The relation is likely to be circular and selfreinforcing, with the high-performing PMO contributing to the level of project management and the PMO are valued. Mutually reinforcing relationships exist among all of the variables in this group, including PMO performance.

THE STRONG STATISTICAL ASSOCIATIONS among the percentage of projects and of project managers within the PMO, the PMO's decisionmaking authority, the supportiveness of the organizational culture, the project management maturity of the organization and the PMO's legitimacy or relevance is indicative of a general tendency in the overall population of PMOs. Those responsible for the implementation, restructuring or management of PMOs should be mindful that this tendency exists but should also be aware that basing decisions on this general tendency may be inappropriate in many organizational contexts. The existence of this general tendency should also serve as a guide for further work to better understand PMOs and their contribution to organizational performance.

KEY FINDING 15: Expertise is critical to PMO performance.

- Many of the roles assumed by PMOs require significant expertise, both as a requirement of the tasks and as necessary to acquire credibility.
- The competency of the PMO staff is a primary determinant of the level of expertise within the PMO.
- The results show that some PMOs are able to recruit and retain competent personnel, and others are not.
- The competency of the personnel is a key issue in PMO performance.

PMOs are organizational entities specializing in several aspects of project management. As such, they rely on their expertise to fill their organizational role. The perception of the level of the PMO's expertise is, therefore, a partial and indirect measure of the adequacy of services offered. Respondents were asked the extent of their agreement with the statement, "Do you agree that only those that deal with the PMO recognize the PMO's expertise."³ The results presented in the graph below indicate a wide spread in the perceived level of expertise of PMOs.

3 Responses to this question are associated with other measures of PMO performance (p=0.000).

A regression analysis conducted among the perceptual variables revealed that this negative perception can best be explained by the perceptions that the PMO is lacking in expertise and too controlling. These two variables together explain 30% of the variation in the perception of PMOs as costly and useless.

Do You Agree That Only Those That Deal With the PMO Recognize the PMO's Expertise?



The level of expertise of PMO personnel also was often mentioned in response to the qualitative question on the project manager's strengths and areas that need improvement. Interestingly, some respondents indicated that the expertise of the personnel was a strong point; while in other PMOs the ability to attract and retain competent people was an area of weakness. It would seem that some PMOs are able to attract very competent people, and others are less able to do so. THE FACT THAT the issue of the competency of PMO personnel is mentioned frequently is an indication of how critical it is to attract and retain competent people. Given the roles that PMOs play, it is easy to see how important their expertise is to their ability to fill their roles and to their credibility.

KEY FINDING 16: Certain characteristics are associated with PMOs being perceived as costly and useless.

- The relevance and existence of many PMOs are challenged regarding the costs they generate and their ability to provide value for money.
- PMOs that are perceived as "costly and useless" are also perceived as lacking expertise and being "too controlling."

THE ANALYSIS INVESTIGATED the relationship between perceptions of PMOs as "costly and useless" and all the variables describing the structural characteristics of PMOs and their organizational context. No significant relations were found. Therefore, none of the variables used to describe the characteristics of PMOs or their organizational context can predict the presence or absence of this negative perception. The inability to find such a relationship is indicative of the need for further work to better understand PMOs and their contribution to organizational performance. Some PMOs are having difficulty in recruiting and retaining experienced people. Recent conversations with senior project managers revealed their emphatic and spontaneous negative response to the question, "Would you leave your senior project manager position to take on a staff position within your PMO?" While this evidence is ad hoc, it does capture the PMOs' recruitment problem.

Variation with Context

KEY FINDING 17: No systematic variation by economic sector, by region, by organizational size or between public and private organizations.

- The survey findings describe the great variability among PMOs in their structures, roles, and levels of performance.
- A better understanding of PMOs would be greatly facilitated if similar PMOs were found in similar contexts. The most obvious candidates are geographic region, economic sector, organizational size, and public versus private sector.
- However, comparisons between PMOs grouped using these variables failed to show significant differences.

Geographic Region—No significant variations were found among PMOs from different geographic regions. This is not to say that none exist, rather, that based on the measures used in this survey, none were statistically significant. This is true for both PMOs' performance and their structural characteristics. The figure below presents the percentage of project managers located within the PMO. This is one of the characteristics that shows the highest variability among PMOs. Variations exist among regions, but the variation within each region is much greater than the variation between regions. The variations within each region follow similar patterns.

Project Managers Located Within the PMO by Region



Economic Sector—The sample of PMOs in the survey covers a large variety of economic sectors. No significant differences were found among sectors, neither for differences in performance nor in the way PMOs are structured. The figure below shows the variation by economic sector for the percentage of project managers located in the PMO. Variations exist among the economic sectors, but the variation within each sector is much greater than the variation between sectors. The variations within each sector follow similar patterns.



Project Managers Located Within the PMO by Economic Sector

Organizational Size and Public versus Private Sector—The analysis of the differences across organizations of different sizes and the differences between public and private sectors reveals some significant differences in organizational context but no systemic or significant differences in PMO structure or performance.

THIS DATA INDICATES that geographic region, economic sector, public versus private sector, and organization size are not effective in discriminating among PMOs. This result is counterintuitive, as many people tend to think of these as effective ways of discriminating among different organizational contexts. Counterintuitive results are important because they may deflect research from unfruitful paths.

This result can be partially validated by seeking organizations in the same region and industry and of similar size. As the data presented in this paper indicates, many organizations restructure their PMOs relatively frequently. Most organizations that restructure their PMOs change neither their industry nor their geographic region nor their size. Something other than size, region, and industry must be the primary determinates of PMO structures and roles in most organizations.

Conclusions

Analysis of the survey data has not clearly identified the determinants of PMO structures and roles or ultimately their perceived value to the organization. However, it is very likely that the determinants are largely internal to the organization, related to its internal dynamics, strategies, structures, processes, politics and culture, i.e. its organizational context. Implementing or restructuring a PMO is an organizational change, and organizational changes tend to be pervasive, touching many parts of the organization in many, often subtle, ways. Organizational restructuring is related to both organizational strategy and politics. A significant organizational change will have an impact on PMOs, their structures and their roles within the organization. Likewise, successfully implementing or restructuring a PMO will inevitably have an impact on the organization. Therefore, a co-evolutionary process is in play whereby the PMO and the rest of the organization interact and evolve together.

If these are the determinants of PMO structures, roles, and performance, then they will be difficult to investigate using a method such as a survey that is focused on capturing images of the particular form that PMOs have at one point in time. A snapshot does not capture the organizational dynamics that surround its creation or restructuring and, ultimately, its contribution to value creation. Project Management Institute looks forward to future discussions on this important topic, which will hopefully lead to a consensus-based global document to provide guidance for the profession in the establishment and maintenance of successful PMOs.

To add your comment on this important subject please go to:

http://www.keysurvey.com/survey/150674/1a02/

Appendix

Methodology and Demographic Data

The investigational design, to provide a reliable portrait of the reality of PMOs, was organized in two phases:

Phase 1 of the research, which was completed in 2004, undertook a systematic investigation of 30 PMOs in different organizations and industries. The objective of the first phase was to provide a preliminary validation of the hypothesis that "the structures, roles, and legitimacy of PMOs vary significantly from one organization to the next" and to gather data that would contribute to the production of a richer and more reliable portrait of the reality of PMOs. To this end, a preliminary version of the survey questionnaire was developed and tested. Feedback sessions were held with informants from the organizations to validate and discuss the questionnaire and the preliminary results. The preliminary investigations produced an image of PMOs characterized by extreme variety in structures, roles, and legitimacy while at the same time validating and significantly enriching the questionnaire, which became the survey instrument. The results from Phase 1 were enlightening, but the sample was small.

Phase 2 of the investigation was undertaken to validate and further enrich the preliminary results from Phase 1. A Web-based survey instrument was designed and tested. The questionnaire had already been validated and tested in Phase 1. However, three respondents from very different industries tested the Web-based version, and a small number of minor adjustments were made. The instrument is designed so that each respondent describes one PMO and its organizational context. The questions are very descriptive until the end of the instrument where a small number of more evaluative questions complete the quantitative portion of the survey. Evaluative questions were placed at the end of the instrument so as not to bias responses to the more descriptive questions. The survey instrument also collected qualitative data through open-ended questions in which respondents indicated their perceptions and opinions in their own words. The Web-based questionnaire was online from March through November 2005. There were 500 usable responses received.

The Respondents

The respondents and the PMOs described by the data are from a wide variety of contexts.

The respondents are distributed among organizational roles as follows:

 Project managers 	38%
 Managers of PMOs 	23%
 Personnel in PMOs 	11%
 Executives and other managers 	10%
• Consultants	8%
• Others	10%

The geographical distribution is as follows:

• Canada	44%
• United States	26%
• Europe	19%
• Other	11%

The organizations are from a very wide variety of industries. The survey instrument identified 22 industries that have been combined into the following groups :

 Tangible products⁴ 	29%
• IT/IS	14%
 Telecommunications 	10%
• Financial services	13%
• Other intangible products or services ⁵	24%
• Other	10%

The organizations are split between the public and private sectors as follows:

• Private sector	61%
Public sector	36%
Not-for profit	3%

The PMOs surveyed in this investigation are from organizations of varying size. The distribution is presented in the following graph.

4 Industries producing tangible products include manufacturing, engineering, energy, chemicals, natural resources, transportation, construction, pharmaceuticals, aerospace, and military equipment.

5 Intangible products and services other than financial include public administration, health and social services, consulting, business services, education, hotels, restaurants, tourism, military services, international aid, sport, and culture.



Size of Organization Expressed as Total Number of Employees

The organizational project management maturity of the organizations participating in the survey was evaluated using a 5-point scale. Participants rated the project management maturity of their organizations as in the chart below. This distribution is not out of line with expectations.

Project Management Maturity of Organizations



In some cases, the PMO is located in the same unit as the resources that work on the projects. In other cases, the resources are located elsewhere in the organization. The graph below shows the percentage of resources working on projects that report to the same management as the manager of the PMO. A low percentage indicates a matrix relationship with resources located elsewhere in the organization. Most PMOs are in one of the two extremes with respect to the percentage of resources in a matrix relationship.



Percentage of Resources That Report to the Same Management as the PMO Manager

Some PMOs serve only one customer while others have many customers. Their customers can be primarily internal or external to the organization. The distributions within the sample are shown in the table below. As can be seen, the vast majority of PMOs have multiple customers, but the split between those with internal customers and those with external customers is relatively even.

Customer Distribution

	INTERNAL	EXTERNAL	TOTAL
One	10%	6%	16%
Several	45%%	39%	84%
Total	55%	45%	100%

As can been seen from the demographic data provided in the table above, the sample of 500 PMOs described by this survey are drawn from a very wide range of contexts. The sample size and distributions are sufficient to identify important differences among PMOs from different contexts if any systematic differences exist. Hence, this paper first discusses the variability of PMO structures, roles, and performance for the entire sample. The discussion of variations among PMOs in different contexts can be found near the end of the paper, under Key Finding 17.

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