



The Project Management Office (PMO):

Its Responsibilities and Structure

مكتب إدارة المشاريع: مسؤولياته وهيكلته

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Abstract

The Project Management Office (PMO) has recently become a vital business unit in many organizations worldwide and is critical to the success of project management functions in many organizations. This dissertation research has been developed with the aim of studying the roles and responsibilities of the PMO, and proposing the optimum PMO specification for the Ministry of Public Works in the UAE based on actual needs.

The PMO has different roles and responsibilities, structure, staff numbers, and nature of roles and these factors often vary between organizations depending on the needs of organization itself. The roles of the PMO might be a supportive, coordinative or controlling role, and some organizations might have multiple PMOs with variance in their roles. The accurate identification of the PMO roles is important as some organizations might spend money and resources on establishing PMOs that don't satisfy their needs and requirements.

To achieve the objectives of this research dissertation, a qualitative research methodology that involved mixed approaches have been used including studying the different roles of the PMOs and different practices worldwide and within the UAE environment. The data collection uses resources available from Ministry of Public Works (MoPW), classifying the needs of MoPW based on Hill's frameworks of PMO roles, and recommends a road map to establish a mature Project Management Office (PMO).

The outcomes of this research show that the MoPW needs vary between the controlling, supporting, and coordinating requirements, which have been classified according to priority and linked to a road map based on a five years plan. It is divided into three stages to ensure that the PMO reaches the required maturity level and satisfies the UAE government's needs and expectations.

Keywords: Project Management Office, PMO Maturity, Roles of the PMO, PMO Structure.

الخلاصة

لقد أصبح مكتب إدارة المشاريع مؤخراً أحد الوحدات التنظيمية الهامة للمؤسسات حول العالم، وأصبح أحد عوامل النجاح الحرجة لنجاح أنشطة إدارة المشاريع في الكثير من المؤسسات. إن هذه الأطروحة البحثية تم تطويرها بهدف دراسة أدوار ومسؤوليات مكتب إدارة المشاريع، وإقتراح مكتب إدارة المشاريع المناسب لوزارة الأشغال العامة في دولة الإمارات العربية المتحدة وتحديد أدواره بناءً على إحتياجاتهم الفعلية.

إن مكتب إدارة المشاريع لديه أدوار ومسؤوليات، وهيكلية، وأعداد موظفين، وطبيعة أدوار تختلف من مؤسسة لأخرى بناءً على إحتياجاتها الفعلية. إن دور مكتب إدارة المشاريع يمكن أن يكون دوراً داعماً، تنسيقياً، أو مراقباً ووضابطاً، وبعض المؤسسات لديها أكثر من مكتب لإدارة المشاريع تختلف مسؤولياتها داخل نفس المؤسسة. إن التحديد الدقيق لأدوار مكتب إدارة المشاريع يعتبر هاماً للغاية حيث أن بعض المؤسسات تتفق أموالاً وموارد لتأسيس مكاتب إدارة مشاريع لا تلبي إحتياجاتها الفعلية.

لتحقيق أهداف هذه الأطروحة البحثية، تم تطبيق منهجية بحث نوعية تضمنت أساليب متنوعة شملت دراسة الأدوار المختلفة لمكتب إدارة المشاريع، ودراسة ممارسات حول العالم ومن بيئة دولة الإمارات العربية المتحدة، وجمع البيانات من وزارة الأشغال العامة، وتصنيف إحتياجات الوزارة بالإستناد إلى نموذج (هيل) لأدوار مكتب إدارة المشاريع، وإقتراح خارطة طريق لتأسيس مكتب إدارة مشاريع ملائم للوزارة.

إن مخرجات هذا البحث أظهرت أن إحتياجات وزارة الأشغال العامة تتنوع بين الدور الرقابية، والداعمة، والتنسيقية، والتي تم تصنيفها حسب أولوياتها وربطها بخارطة طريق من خلال خطة تشتمل على ثلاث مراحل تستمر لمدة خمس سنوات لضمان تأسيس مكتب إدارة مشاريع مناسب وبمستوى نضوج يلبي إحتياجات الوزارة وتوقعاتها.

الكلمات الرئيسية: مكتب إدارة المشاريع، نضوج مكتب إدارة المشاريع، دور مكتب إدارة المشاريع، هيكلية مكتب إدارة المشاريع.

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List of Abbreviations

Abbreviation	Description
CEO	Chief Executive Officer
CSF	Critical Success Factors
HR	Human Resources
HSE	Health, Safety, and Environment
ISO	International Organization for Standardization
IT	Information Technology
KPIs	Key Performance Indicators
PMI	Project Management Institute
PMO	Project Management Office
PO	Project Office
MoPW	Ministry of Public Works (UAE)
MS	Microsoft
UAE	United Arab Emirates

Chapter One: Introduction

The latest researches and studies illustrated that there are an increment estimated at 39% in organizations having PMOs between the years 2000 to 2012 (Project Management Solutions 2012). This jump can be seen as indicating that the importance of the PMO is increasing over time. Moreover, its role varies between organizations as it might play a major strategic role while in other organizations it might play a more limited supportive role (Hill 2008).

Organizations nowadays are allocating resources to projects to ensure that projects are managed and controlled efficiently and successfully, however recent researches have shown that around 90% of the projects have a problem in satisfying cost, time, and quality limits (Standish Group 1995), while others have mentioned around 69% of projects failures are due to inappropriate implementation of project management methodologies (Santodus 2003). Such researches and others gave the PMO and its roles more focus as it became a vital business unit in organizations with variation in its maturity between organizations depending on many factors (Aubry et al 2010). Other studies have shown the following:

1. According to Fortune Magazine less than 10% of business strategies are effectively delivered.
2. According to The Australian Institute of Company Directors 70% CEO's who fail are not because of wrong strategies, but because of the poor execution.
3. According to Ernst & Young study 70% of capital expenditures are been spent on initiatives are not aligned with organizational strategy.
4. As per McKinsey study 28% of CEOs say that their companies produce strategic plans that reflect the company's goals and challenges, but those are not effective.
5. According to PricewaterhouseCoopers (PwC) only 2.5% of companies have finished 100% of strategic projects on time, within budget, to scope and delivered the right benefits.

The inappropriate implementation of PMOs in organization might lead to many failures and might create undesired complexity. This research is important to ensure the optimal

matching between the needs of organizations and PMO structure and roles with no over-emphasis or minimization of roles. The research will cover an organization that has a functional structure and is working with the public sector in UAE. Therefore the research objectives are to:

1. Review literatures on different responsibilities and roles of the Project Management Office, its maturity, and its levels within organizations.
2. Identify the factors for consideration before establishing the Project Management Offices.
3. Discover the different layouts and structures of Project Management Offices.
4. Propose the optimal Project Management Office structure that satisfies the needs of the MOPW in the UAE.

The research is important as it can support decision makers in establishing the optimal PMO within their organization. Furthermore, the research results will contribute to organizations by supporting them in allocating the appropriate resources needed for PMO instead of spending money and assigning resources that are not essential.

The scope of the research will cover Ministry of Public Works in UAE which is aiming to establish the right PMO within the Ministry.

Chapter Two: Literature Review

2.1 What is the PMO?

The Project Management Institute has defined the PMO as “an organizational body or entity assigned various responsibilities related to the centralized and coordinated management of those projects under its domain” (PMI 2008, p.25), and they stated that its responsibilities vary from providing project management support to having real responsibilities for managing projects directly. While others have defined it as “an organizational entity established to assist project managers, teams and various management levels on strategic matters and functional entities throughout the organization in implementing project management principles, practices, methodologies, tools and techniques”.

Some researchers have mentioned that there is no specific definition for the PMO, and other mentioned that the PMO roles include leadership and achievements (Taylor 2011). Other definitions have mentioned that the PMO is “the department or group that defines and maintains the standards of process, generally related to project management, within the organization. The PMO strives to standardize and introduce economies of repetition in the execution of projects. The office is also the source of documentation, guidance and metrics on the practice of project management and execution” (Pole to Pole Communications).

The terminologies used to indicate the PMO vary between organizations based on its roles and maturity as it is called Project Office for low mature PMOs and Project Management Office for standard PMOs, and Program/ Portfolio Management Office or Enterprise Project Office for high level PMOs (pmsolutions 2011). The pmsolutions 2012 has mentioned that there are new terminologies used for the PMO as Strategy Management Office or the Planning and Innovation Office. However the global known name for this business unit is Project Management Office.

The existence of the PMOs was not particularly popular by the end of the 20th century, but has become more popular in the current century and organizations have noted the

need for such important business unit (Dai & Wells 2004). The roles and functions of the PMO vary between organizations and several arguments between different research studies and schools of thought are discussed within the academic and practitioner journals. Duggal (2007) has mentioned that the PMO operates at different levels in organizations.

Project Management Solutions (2011) has mentioned that PMO is now seen as change agents within some organizations and that it is taking a higher role from being not only divisional to be enterprise PMO. Accordingly, the PMO can be for a specific project or program, or for some departments such as Information Technology, or it can be at the organizational level, while in big size organizations, there can be multiple PMOs at different level within organization (Duggal 2007) as illustrated in Figure 1.1. However in multiple levels PMOs, the organizations should have a central/ organizational PMO that have all related data and information about the projects and portfolios.

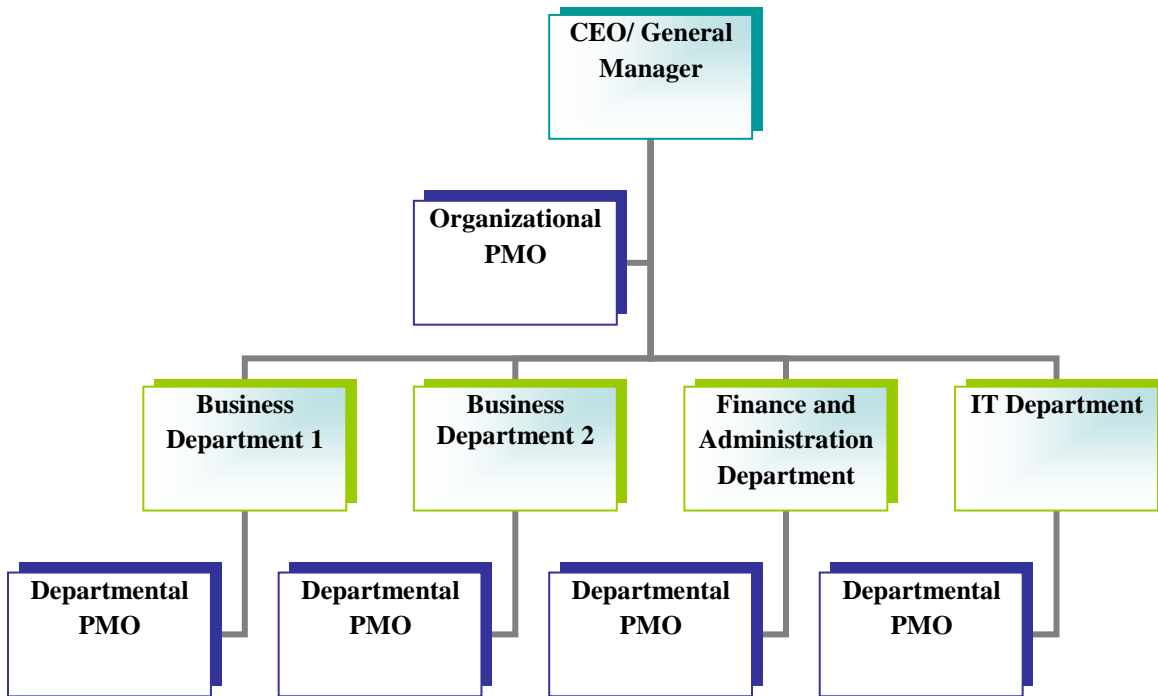


Figure (2.1): Multiple Levels PMOs

The PMO can have centralized or decentralized modes, and each of them have their own advantages and disadvantages and can be suitable according to the purpose of the PMO which are illustrated in Table (2.1) Shamur (2009).

Advantages	Disadvantages
Improve project standardization in the organization.	It move too slowly when it came to small in house projects
Improve the reporting for upper management	Not get full cooperation from the functional mangers
Improve professionalism of project managers	Limited sometimes by its own standards

Table (2.1): Advantages and Disadvantages of Centralized MO

2.2 Project Management Office Models

Although the PMO is a central unit that is responsible for managing, coordinating, and/or controlling projects in organizations, its names and roles have variation between organizations and countries worldwide (PMI 2011). Kendall and Rollins (2003) have mentioned that the PMO can be designed in three different models as below:

- (1) **Model 1:** The PMO work as source for project procedures, methodologies and standards in addition to having projects statistics and guidelines and they indicated that its name is “Project Repository”.
- (2) **Model 2:** The PMO work as trainer and mentor for projects to nurture project culture throughout the organization in addition to the pre- and post- project delivery support and they indicated that this model is “Project Coach”.
- (3) **Model 3:** The PMO provide “direction” for management and oversight the projects for all organization and at all levels and support time, budget, and risk management.

Letvec (2006) has also mentioned the similar models for the PMO which are PMO Storing Model, PMO Consulting Model, and Blended PMO Model as it illustrated in Figure (2.2) below.

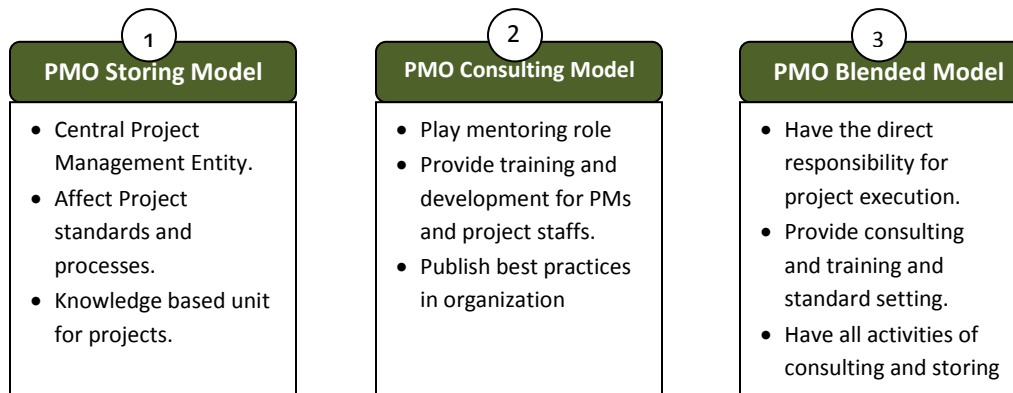


Figure (2.2): PMO Models based on Letvec (2006)

Each model has its own advantages and disadvantages. Letvec (2006) has mentioned the advantages and disadvantages for the strong and consulting models that are clarified in the Table (2.2).

Advantages	Disadvantages
The Strong Model	
<ul style="list-style-type: none"> • Due to its positions (most of time managed by high level manager in the organization), it has large influence in the specific organization it is responsible to (no matter its size). This helps when searching for funds and resources. • Its ability to drive standardization to the project management life in the organization is higher due to the fact the PMO controls directly all the PMs and has the approval authority of projects, bids results, etc. • The strong PMO can achieve high levels of professionalism. Its members are full-time project practitioners, who can be devoted to their projects without the disturbances from other aspect of the business. 	<ul style="list-style-type: none"> • The creation of this model will require a “culture shift” (1) in the organization, especially during the establishment of the new PMO. • It will require an extensive cost and time to establish all the PMO standards, tools and staff requirements • The creation of the PMO is going to create resistance from the units who manage the project in the past. This resistance can be a huge obstacle in the new PMO start-up and operation. • The bureaucracy level in the organization will rise, due to the control mechanism the strong PMO will set. Whether it’s good (needed to control) bureaucracy or not, it will complicate the things in the beginning and will raise the level of management and employee resistance.

The consulting model	
<ul style="list-style-type: none"> • Do not require extensive restructuring. • Create lesser resistance from other units (because the active management of projects will be still under their control). • Can supply independent reports to the organization management. 	<ul style="list-style-type: none"> • The consulting PMO will probably will not control large resources. Due to that he will have problems when trying to achieve acceptance from other units. • May looks like overhead

Table (2.2): Advantages and Disadvantages of Strong and Consulting Model PMOs (Gilad 2009)

Many researchers agree that no one PMO model will satisfy the needs of all organizations, therefore the analysis for the needs and requirements of the PMO is so important (Dai & Wells 2004). Having the suitable PMO model is a key success factor for organization and the overall success for the PMO and its impact, therefore the PMO must be objective and should satisfy the organization needs and its objectives. Duggal (2007) has mentioned the following rules for selecting the suitable PMO based on the purposes:

1. If the purpose is focusing on project governance, control, and support decision making, then the suitable PMO is “Control Tower” PMO.
2. If the purpose is focusing on information and reporting, then the suitable PMO is having “Information Bureau” PMO.
3. While if the purpose is the coaching and mentoring, then the suitable PMO is having “Consulting and Supporting” PMO.

Many debates appear in the journals on the optimal model for the PMO required by organizations as some researchers have advocated that the PMO shall be a central entity within the organization and having all projects, portfolio and programs related knowledge and information, while others assert that with higher responsibilities for the PMO its control should be over the most important projects (Simon 2006).

2.3 Value of the PMO

The biggest challenge of the PMO is proving their value and benefits within organization as many people consider the PMO as an overhead for organizations (Duggal 2007) in addition to the fact that the value of the PMOs is not tangible and it is not straightforward to translate the PMOs functions into numbers and hard facts. Hill (2008) identified this problem and argues that assessing the PMO's value is one the routine functions that the PMO shall perform through measuring several indicators and reporting that shall be reported to the decision makers periodically. Gagon (2007) has mentioned several value drivers for the PMO as illustrated in Figure (2.3).

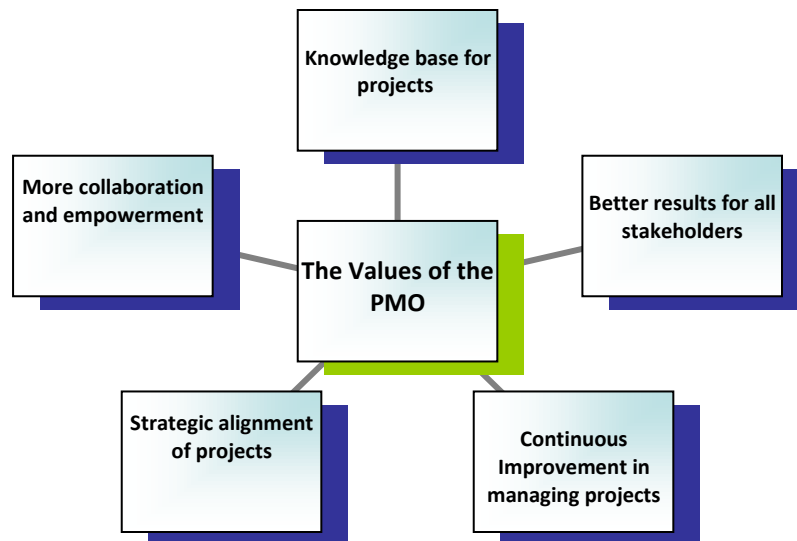


Figure (2.3): The values of the PMO

Weaver (2005) has mentioned the following results for the PMO:

- With mature PMOs, the projects' success rate is 98%.
- With new established PMOs, the projects' success rate is 53%.
- Without PMOs, the projects' success rate is less than 50%.

The UK Program Risk Governance Management (2010) mentioned that having the strategic function of the PMO brings many benefits to organizations include maintaining the strategic direction of the organization, coordinating all issues related to the projects, programs, and portfolios with the strategic directions, facilitating the resources allocation

and communication, and managing all stakeholders requirements and expectations. Others mentioned that the value and benefits of the PMO have a proportional relationship between with its responsibility as illustrated in the Figure (2.4).

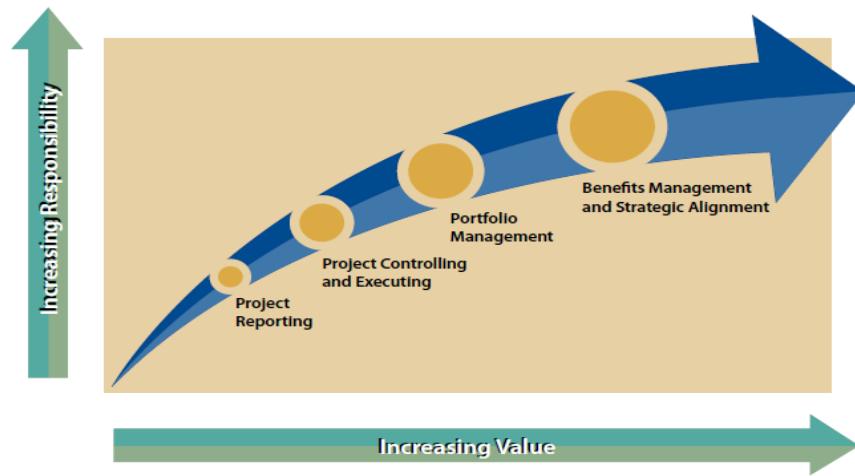


Figure (2.4): Relation between PMO Value and Responsibilities (Ward 2010, p.9)

2.4 The roles of the PMO

While a number of studies have covered the roles and functions of the PMO from all perspectives, none have covered it in the same detail that has been covered by Hill (2008) who illustrated it in a very precise manner that covered every relevant function. Figure (2.5) is showing all roles and functions of the PMO.

PRACTICE MANAGEMENT	Project Management Methodology
	Project Tools
	Standards and Metrics
	Project Knowledge Management
INFRASTRUCTURE MANAGEMENT	Project Governance
	Assessment
	Organization and Structure
	Facilities and Equipment Support
RESOURCES INTEGRATION	Resource Management
	Training and Education
	Career Development
	Team Development

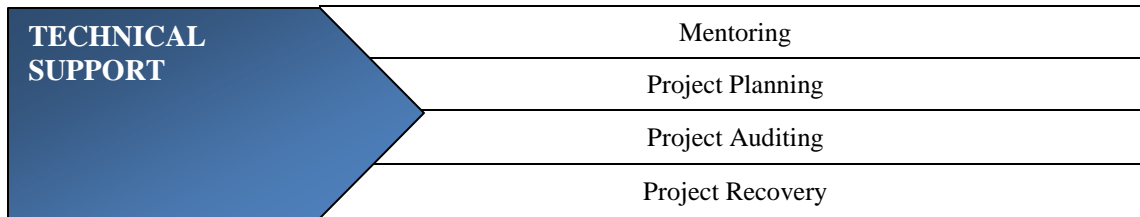


Figure (2.5): Roles and Responsibilities of the PMO, adapted (Hill 2008)

2.4.1 Practice Management

This key of the PMO have four major roles within it that involve the following:

Project Management Methodology

The PMI (2008) has defined the project management methodology as a group of procedures, processes, techniques, and rules that is used for managing projects in an enterprise, while other deemed that there are no universal definition for project management methodology (Letavec & Bollies 2011).

Each organization has its own different project management methodology and there is no fixed methodology that is applicable for all organizations as each organization has its unique project management methodology (Crawford 2011). Hills (2008) has stated that project management methodology role shall involve developing the methodology itself, training people on using this methodology, publishing it, monitor its implementation, and maintaining and updating the methodology on continuous basis.

The below are methodologies that are used in project management:

- BS 6079 – The British guidelines for project management
- PRINCE2 – A tool that is used for managing projects successfully
- PMBOK – The PMI book.
- ISO 10006 – The international guidelines for managing quality in project management.

On the other hand, there is no specific methodology that is used for managing projects that satisfy all organization needs. Each organization has its own specificity and roles.in (Pharro & Bentley 2007).

Project Tools

The project management tools are those tools that are used by the project professional to facilitate performing jobs and enhance the efficiency and effectiveness of their execution (Hill 2008). Those tools vary from paper tools, automated tools, web based tool, and mobile and PDA tools as illustrated in Figure 2.6.

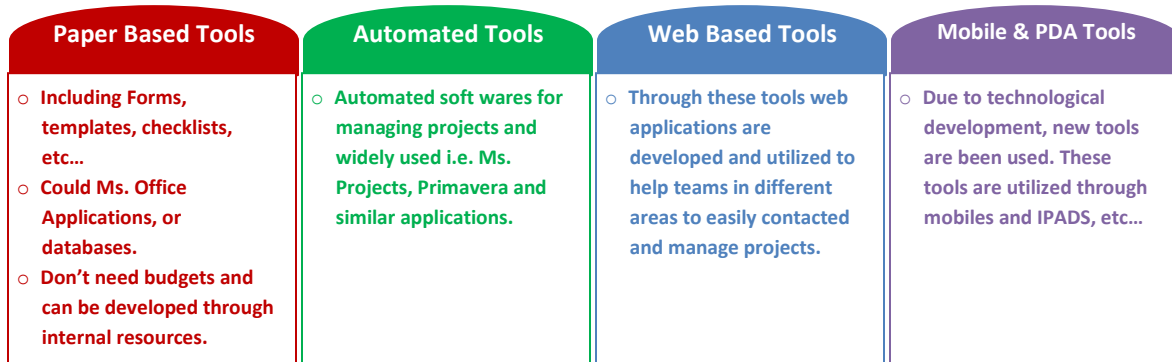


Figure (2.6): Projects Tools (Hill 2008)

Hill (2008) has mentioned that the project tools role involve many other functions including:

- Identifying the needs for project tools.
- Procuring and implementing project tools.
- Evaluating project tools performance

From another perspective, Duggal (2007) has mentioned that HR management, training and coaching roles and project management methodology are important roles than project tools.

Standards and Metrics

This function involves the identification of the practices that are used for project management. The PMO has the responsibility for adhering to project management standards and metrics (Hill 2008). Julian (2008) has mentioned that the Project management standards and metrics involve Industry standards, project management standards, regulatory standards, and related standards and rules. Within UAE business environment there are certain standards and criteria in managing project through business

excellence programs and those have to be adhered to. In addition to this some organisations implement specific standards like ISO 9001 for quality management and ISO 10006 which involve guidelines for managing projects according to the International Organization for Standardization (ISO) or BS 6079 which is a guide project management developed by the British Standards Institute (Hill 2008).

On the other hand, some researchers have mentioned that the application of international standards is a part of project management methodology and even some of them considered some of these standards as project management methodology by itself.

Projects Knowledge Management

Hill (2008) has focused on establishing project knowledge management for projects, and mentioned that knowledge management roles shall involve establishing knowledge management system for projects that capture information, document, process, and project delivery management and library. While the other function includes introducing and awareness creation about the knowledge management system. Ibrahim (2013) has mentioned that knowledge management can play valuable roles in establishing lessons learned for project management staff and systems.

According to Letvec (2006) the PMO can have the roles of developing and establishing a knowledge store that capture, register, and sustain knowledge of all projects handled by organizations. He also highlighted that the knowledge can come from different sources that might include project assets and from other sources like books, training courses, and industry standards.

2.4.2 Infrastructure Management

This key of the PMO have four major roles within it that involve the following:

Project Governance

Bekker and Styen (2008) have mentioned that project governance involve having an integration of management system, rules, relationships, clear structure that provide enterprises with a model support decision making and guide it to achieve its strategic

aims. On the other Misner (2008) has mentioned that the project governance is a part of overall corporate governance and have to be treated as a part of it and have to be combined with risk management process.

Project governance involves other roles that involve the following:

- Developing PMO Charter.
- Developing Project Management Policies.
- Preparing classification manual for projects.
- Deciding project manager authorities.
- Establishing executive control board.
- Aligning with technical and business committees.

From another perspective, Bekker and Steyn (2008) have mentioned other functions within project governance that involve the following:

- Project Steering Committee: This involve composition of the committee, identification of its responsibilities, and auditing committee as part of the board of directors.
- Cost and Benefit Management: This involves the financial reporting and responsibilities, financial disclosure, setting internal controls, and risk management.
- Project Reviews and Audits: This involves having independency for audit performing, the interactions and communication, attestation and the disclosure of audit results.
- Ethical, responsible conduct and conflict of interest: This involves code of conduct and standards for environment and society, compensations based on performance, Health Safety and Environment standards, and adherence to the social and community standards.

Assessment

Hill (2008) has specified that the assessment is linked to standards and roles that have been mentioned previously. In the assessment role, the PMO assess the level of it

maturity and capability comparable to a certain standard or criteria, through which clear ranking for the capability or maturity will be the outcome.

Organization and Structure

The organization and structure function involve setting the appropriate position and level of authority for the PMO and accurate identification for units and staffs within the PMO. The clear identification of reporting and communication will certainly help structuring the work within the PMO.

Facilities and Equipment Support

Hill (2008) has specified that managing project management facilities and equipment is a role of the Project Management Office. Project management equipment involve computers, desktops, laptops, printers, and other devices and hardwares, while facilities support include leasing, renting, purchasing, or developing. Hill (2008) and Unger et al (2012) has mentioned the following roles in managing equipments and facilities:

- Recording the inventory of projects equipment.
- Managing equipment and facilities acquisitions and requests.
- Control and monitoring of equipment and facilities.
- Facility management

4.2.3 Resources Integration

This key of the PMO have four major roles within it that involve the following:

Resources Management

Similar to Hill (2008), Kaufman and Korrapati (2007) indicated that the controlling and monitoring the availability of resources and the utilization levels is an important element of the role of the PMO. Therefore the PMOs have to have the authority to allocate resources to projects according to identified needs and then satisfy these needs and requirements.

Kendall et al (2003) has mentioned that managing the human resources function is one of the PMO's important roles which identify HR needs, assigning HR, monitoring and administering any travel or training arrangement, developing, reviewing and monitoring performance management guidelines.

One of the key other roles that has been considered by Charvat (2003) is the cost and financial control as most of the executives are always keen to reduce this parameter, whereas Hill (2008) didn't consider managing the cost nor the finance. Cost Management specified by PMI (2008) is understood to include cost and budget estimation and control. Financial Resources management is also one of the important function/resources that contain cost estimation and budgeting, coordination of financial resources and transfers between projects, and monitoring the financial performance of the projects.

Training and Education

Training and Education within organizations and creating a supportive culture for managing projects is one of the Key Strategic objectives of the PMO. Different tools and mechanisms include awareness, communications, and training can be attained from this role as a result (Hill 2008). However, Hill (2008) didn't figure out its importance to promote a project management culture. Such role from the PMO will affect and simply the other PMO functions achievements and their tasks.

Career Development

This function involve developing the correct career paths for project management professionals, career planning support, and developing staff competencies and knowledge by training and mentoring for project managers, and it is associated with other functions of the PMO (Bekker & Steyn 2008). Additionally, the career development involve professional training and project management learning by offering resources i.e. magazines, libraries, electronic-resources, and other tools (Unger et al 2012).

Team Development

Crawford (2011) has stated that team work is an important factor for projects success, since the unified project team may lead to success of the project or its failure. Hill (2008)

has affirmed following the accomplishments of the PMO teams, and evaluating their successes and performance. Whereas Bekker & Steyn (2008) contended that to sustain high performing teams, the PMO has to provide incentives and rewards.

4.2.4 Technical Support

This key of the PMO have four major roles within it that involve the following:

Mentoring

This is an important area of learning and development and was considered as one the success factors for the IBM Project Management Center of Excellence as they considered this as one of the important roles that the PMO must possess (PMI 2011). Hill (2008) has also affirmed its importance and linked it with the career and team development roles.

Project Planning

This role was realized as a key function for all authors who wrote about the PMO. Therefore the PMO has to be acknowledged as having the following roles according to Hill (2008):

- Identify project plan components
- Provide planning tools
- Establish the facilitate for project planning and kick off meetings
- Facilitate the preparation of project plans
- Manage the planning arrangements
- Support preparation supporting project plans including quality, risk, and communication management plans.

Project Auditing

One of important functions of the PMO is project audits and reviews which include audits initiation, audit planning, report audit findings, and monitor improvement actions (Hill 2008). The PMO will also ensure the independence of auditing, commitment to the

international auditing practices, and the collaboration with external auditors and the audit committee which is covered with mentioned in the Project Governance section.

The project auditing has been seen as a major function by some organizations while others deems that this function can be handled by the auditing related units and is been considered as a part of corporate governance system.

Project Recovery

Hill (2008) has affirmed on the role of project recovery as a part of disaster recovery and taking actions to mitigate any emergencies in the fields of Human Resources, and Information Technology.

However, no researchers have covered this role as a part of PMO roles other than Hill (2008), and other deems that this can be a role of other functions not the PMO itself.

4.2.5 Business Alignment

This key of the PMO have four major roles within it that involve the following:

Project Portfolio Management

Julian (2009) has mentioned that the management of several projects is a non-easy role which might affect the strategic objectives of organizations. PMI (2008) stated that managing portfolio involves project and programs governance through portfolio boards, selection panels, and other top level committees and seniors. This role involves the following role aspects:

- Strategic Alignment: The alignment of project portfolios with the organization strategy in addition to the periodic reviews is important, and this role is also correlated with identifying clear mechanism and criteria for project selection (Artto et al 2011).
- Project Screening and Integration: This involves screening new projects, prioritizing it, and recommending funding.

- Closing and Reviewing Portfolios: This involves monitoring the performance of portfolio, gateway assessment, review and assessment, and project closing.
- Assessing Portfolio Impacts: This involves assessing the main corporate results and outcomes and customers satisfaction.

Customer Relationship Management

In case of customer dissatisfaction, this shows that there are some failings in the PMO. Hill (2008) has defined different functions that include:

- Customer Data Management: This involves identification of customers, customer classification, updating customer information, reporting history of relationships.
- Customer Contracts Management: This involves handling proposals, developing contracts, and managing contracts.
- Customer Satisfaction Management: This involves measuring customer opinions before, after, and during projects covering all areas of satisfaction that involve performance, project teams, and other factors.

Vendor/ Contractor Relationship Management

Hill (2008) and Bekker and Steyn (2008) have focused on managing the vendor/contractor role. Supplier, provider, consultant, subcontractor, partner, can be all used as terminologies to describe the vendor. The following roles can be subsumed within this role:

- Vendor Relationship Management: This involves having a database for vendors that include the full information about the vendor, contact details, managers' name, their history with the enterprise, and register of their performance.
- Vendor Contract Management: This involves identifying and qualifying vendors, vendors' selection and awarding, vendors selection criteria, and contracts document preparation.

- Vendor Performance Management: This involves monitoring the vendors' performance, commitment to contract terms and conditions, and performance evaluation and linkages with customer satisfaction.

Business Performance Management

This role has been seen as a strategic role for the PMO and associated with all other functions and also linked with the continuous improvement and lessons learned cycle (Eckerson 2006). Barclay and Bryson (2010) have seen that assessing different projects, programs, and portfolios is not an easy job and is best performed through a strong measurement system that involves the following:

- Setting up a set of Key Performance Indicators (KPIs) through dashboard that covers different areas of the projects (operational efficiency, financial and technical performance, customer and stakeholders' satisfaction, etc.)
- Data collection for KPIs results.
- KPIs results analysis and causality investigations.
- Data validation and accuracy.
- Reporting performance results to the top management and decision makers.
- Corrective and preventive initiatives for the bridge poor performance results, and keeping strong results. This can be accompanied with incentives and PMO staff performance results.

2.5 Nature of PMOs

Many of those roles can be under different categories. Unger *et al* (2012) have classified the roles of the PMO based on their impact as in the following:

- (1) **Coordinating Role:** which involve different other roles in project appraisal and selection, resources management, cross department coordination.
- (2) **Controlling Role:** which involve different roles in information management, project control and decision making.

(3) **Supporting Role:** which involve different sub-roles in training and creation of project management culture for staff and leaders.

The PMI (2008) has also mentioned many roles for the PMO which are managing resources, creating methodology for managing projects, creating project management policies, procedures, and forms, project communications, training and coaching, and monitoring the adherence to the defined policies, procedures, and other documents. Another factor that might affect the role of the PMO is its level and location within the organization. When the PMO is managing at program and portfolio level, then its roles certainly are controlling rather than supporting, however when it's a small PO at divisional level then its role is a supporting role. Harrison and Lock (2004) has classified the PMO according to the following levels:

- (1) Project/ Program Office: Has temporary role and focus on delivery of large projects and programs.
- (2) Project Support Office: Has a tactical role with focus on improving the final delivery of projects by having experts in the field.
- (3) Project Management Office: Has a controlling role and having more roles of the project support and project offices.
- (4) Enterprise Project Office: Has a strategic role with more focus on satisfying the future objectives of the organization, and this role contain the other roles of the projects.

According to this, the matrix in Table 2.3 can be made to integrate the roles of the PMO as based on Hill (2008) and the nature of three roles proposed by Unger *et al* (2012) on the other factors:

PMO Roles	Nature of the role		
	Coordinating	Supporting	Controlling
Project Management Methodology	X		X
Project Tools		X	
Standards and Metrics			X
Project Knowledge Management		X	

PMO Roles	Nature of the role		
	Coordinating	Supporting	Controlling
Project Governance			X
Assessment			X
Organization and Structure			X
Facilities and Equipment Support		X	
Resource Management	X		
Training and Education		X	
Career Development		X	
Team Development		X	
Mentoring		X	
Project Planning	X		
Project Auditing	X		X
Project Recovery	X		X
Project Portfolio Management			X
Customer Relationship Management	X		
Vendor/ Contractor Relationship Management	X		
Business Performance Management			X

Table (2.3): An Integrated Matrix between Hill (2008) Roles and Unger et al (2012) Nature of roles

2.6 PMO Maturity

Hill (2008) has developed a maturity model for the PMO that consists of 5 levels starting from Project Office (PO) at level 1 till Center of Excellence at level 5 as is clear in Figure 2.7. The maturity level overall increases with the increasing roles and functions of the PMO. Hill (2008) integrated each level with the nature of its role which are specified at the following five levels:

- (1) Project Oversight
- (2) Process Control
- (3) Process Support
- (4) Business Maturity
- (5) Strategic Alignment

Other researchers have defined 6 levels of maturity for the PMO starting from level 0 till level 5 according to the following (Boles & Sheeny 2008):

- Level 0 (Community of Practice): Nonexistent.
- Level 1 (Project Support Office): Initial/ reactive.
- Level 2 (Project Management Office): Developing Emerging Discipline.
- Level 3 (Portfolio Office): Defined with initial integration.
- Level 4 (Federal PMO, Program Office): Managed and increased integration.
- Level 5 (Enterprise Program Management Office): Optimized Enterprise Orientation.

STRATEGIC ALIGNMENT			
BUSINESS MATURITY			Stage 5 CENTER OF EXCELLENCE
PROCESS SUPPORT		Stage 4 ADVANCED PMO	Manage continuous improvement and cross department collaboration to achieve strategic business goals. - Multiple Programs - Vice President or Director of Project Management - Dedicated PMO technical staff. - Enterprise wide support staff
PROCESS CONTROL	Stage 3 STANDARD PMO	Apply an integrated and comprehensive project management capability to achieve business objectives. - Multiple projects - Multiple PMs - Program Managers - PMO Director - Dedicated PMO technical & support staff	
PROJECT OVERSIGHT	Stage 2 BASIC OFFICE		Establish capability and infrastructure support and govern a cohesive project environment. - Multiple projects - Multiple PMs - Program Managers - Director/ Senior Program Manager - Full time & part PMO office
Stage 1: PROJECT OFFICE	Provide a standard & repeatable PM methodology for use across all projects. - Multiple projects - Multiple PMs - Program Manager - Part-time PMO support staff	Achieve Project deliverables & objectives for cost, schedule & resources utilization. - 1 or more projects - 1 Project Manager	

Figure (2.7): PMO capabilities across PMO competency (Hill 2008)

Rad and Levin (2002) and similar to Boles and Sheeny (2008) have defined 6 levels for PMO maturity as it is clear in Figure 2.8.

Level 5				Optimized, Adaptive The use of organizational data to conduct continuous improvement	
Level 4			Comprehensive, Managed The organization commits to PM culture and captures quantified performance data		
Level 3		Integrated, Organized, Defined The organization implements PM process and gives recognition to successful processes			
Level 2			Consistent, abbreviated, Repeatable Localized Implementation of formalized PM		
Level 1					Ad hoc- Initial Inconsistent procedures and no formal guidelines.
Level 0					

Figure (2.8): PMO capabilities across PMO competency, Adapted (Rad and Levin 2002)

The Pole to Pole Communications study in 2009 has shown that more than 10% of the organizations have one central PMO while 27% of the organizations have more than one PMO.

2.7 Structure of the Project Management Office

A survey analysis study conducted by Brain (2007) about the functions of the PMO has shown that 83% of PMOs report project status to top management and that 76% of PMOs have developed a standardized project management methodology. The main results are specified in Table 2.4.

Function	Percentage of PMOs having it
Monitor and control project performance	65%
Develop competencies and training of staff	65%
Have a project Information System	60%
Provide consulting and advices to top management	60%
Coordinate between Projects	59%
Have Projects scorecard and dashboard	58%
Promote a culture of Project Management	55%
Monitor the performance of the PMO	50%
Participate in Strategic Planning	49%
Monitor Project Manager	49%
Managing one or portfolio	49%
Identify, prioritize, and select projects	48%
Document management of projects	48%
Project Audits	45%
Customer Interface Management	45%
Provide project tools	45%
Have specialized tasks for project managers	42%
Resources allocations between project	40%
Post project reviews	38%
Have database for lesson learned	34%
Have risk database and register	29%
Manage benefits	28%
Recruitment, selection, evaluation, and set salaries for project managers	22%

Table (2.4): Percentage of PMOs having PM related roles (Brain 2007)

The Project Management Solution (2011) has produced a report gives many examples of PMOs structures and roles within their annual publications as best practices of PMOs that wins the PMO Award:

Dell Services: This organization is a health care organization that employs around 9000 full time staff. It has a PMO that include 16 staff working managed by a PMO Director. The role of the PMO seems to supportive and control role as it handles the different types of tasks through having project managers and governance roles.

VSP Vision Care: This Company is working in the insurance sector and has more than 1700 employee and has a 42 staff working in the PMO who are managed by a PMO Director. The staff members of the PMO are Project Managers and Business Analysts. The roles and objectives of the PMO are:

- Model, lead, and deliver results on enterprise projects.
- Foster the great employees accomplishment.
- Champion business innovations to change the approach business are done.

California Technology Agency: Is a government department in USA, and has more than 175,000 full time staff members and the Program Management Office has 31 staff members.

2.8 Practices from UAE Environment

A similar organization in UAE that has adopted good practices for managing projects in UAE that is responsible for handling the transportation system in Dubai. This organization employs more than 5000 staffs who are distributed across 5 institutions and 3 sectors. The corporate PMO functions are represented by the Strategy and Governance Sector who handle the roles of corporate PMO through different departments. Figure 2.9 illustrate the central PMO role and the sub PMOs or Project Offices in the sectors and Institutions.

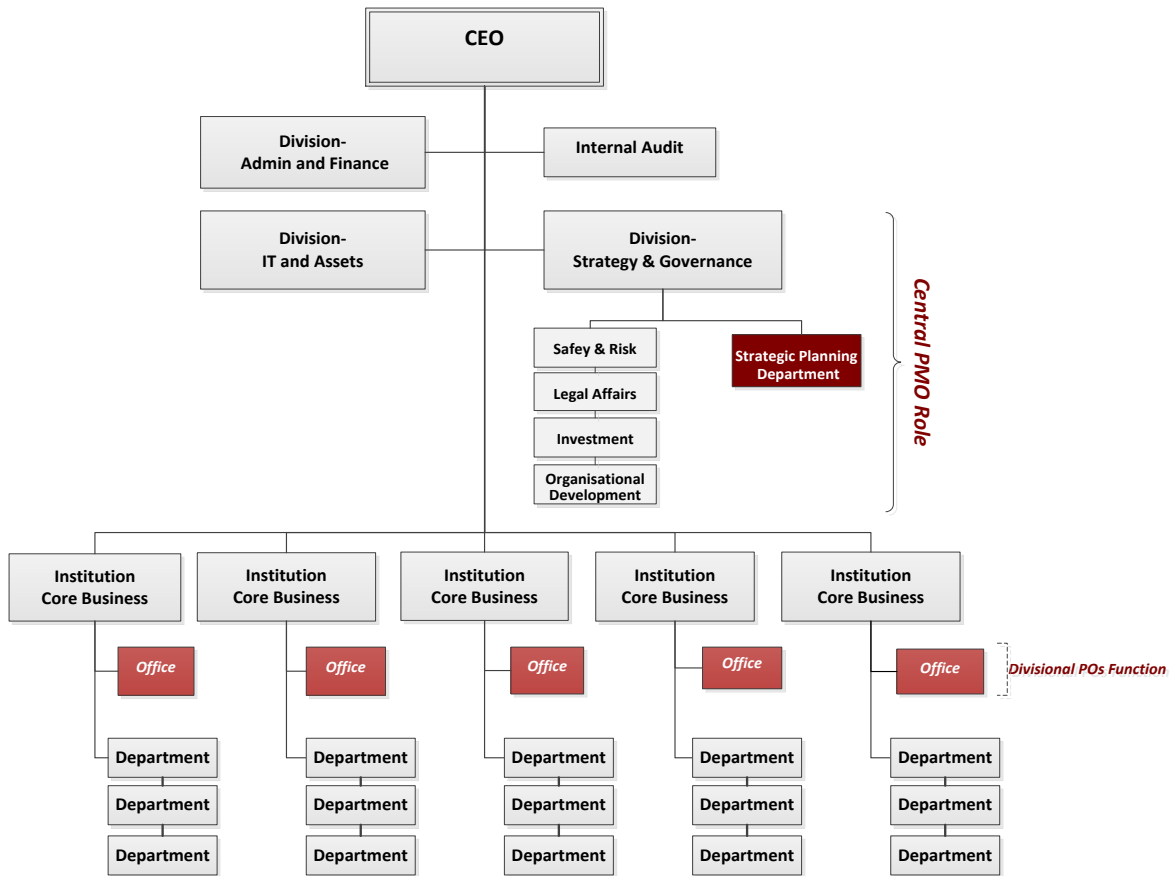


Figure (2.9): The Central PMO and divisional PO roles (UAE Practice)

As it is illustrated in the above figure, each office (POs) within each institution is responsible for the projects within that institution, and the Strategy and Governance Division (Central PMO Office) is responsible for the whole organizational portfolio management and handle the roles of Central PMO function, however this division is handling other functions that might not be within the role of PMO. The number of staff in the central PMO is 12 staff members while each institution office includes 2-3 staff members. The strategic Planning Department is responsible for most of the PMO roles that involve:

- The strategic alignment between the organization's direction and the projects
- Development of policies and procedures related to the strategic planning and portfolio management system
- Reporting the status of the projects and portfolios and recommendations

- Manage and control projects follow up system and other related IT management systems
- Other tasks.

According to the matrix developed and set of roles created by Hill (2008), the following tasks in Table 2.5 are handled by the central PMO and divisional POs.

PMO Roles	Roles within organization	
	Central PMO	Divisional POs
Project Management Methodology	Yes	Yes
Project Tools	Yes	Yes
Standards and Metrics	Yes	Yes
Project Knowledge Management	No	Relatively
Project Governance	Yes, for most sides of projects	No
Assessment	No	No
Organization and Structure	No	No
Facilities and Equipment Support	No	No
Resource Management	No	No
Training and Education	Yes	Yes
Career Development	No, but provide experts to HR department	No
Team Development	No	No
Mentoring	Yes	Yes
Project Planning	No	Yes
Project Auditing	No	Yes
Project Recovery	No	No
Project Portfolio Management	Yes	Yes
Customer Relationship Management	Yes	No
Vendor/ Contractor Relationship Management	Yes	Yes
Business Performance Management	Yes	Yes

Table (2.5): The Functions handled by the Central PMO and Divisional POs (UAE Practice)

2.9 Establishing Successful PMO

Jim (2009) has mentioned that there are no two identical PMOs and stated that “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, it self,

is unique”. This asserts the importance of selecting accurate PMO to the success of organizations.

Maylor (2006) has stated that there are 10 phases to build a successful PMO that covered different aspects from the beginning till assessing its performance as below:

- (1) Selecting the type of the PMO: Through this phase nature of the PMO required have to be decided.
- (2) Selecting a model that suits organization: Through this a PMO that suits organization size, culture and structure is selected.
- (3) The standardization of project management processes: Through this the project management methodologies and procedures are to be standardized and unified throughout the organization regardless of its nature.
- (4) Periodic assessment of success: The PMO needs to periodically assess the success achieved after establishing the PMO, and compare with the situation before the establishment.
- (5) Tracking the PMO’s success and failures: The PMO needs to share its successes and failures with stakeholders within organization.
- (6) Benchmark Best Practices: Through which best practices within the field can be captured and implemented to enhance efficiency and effectiveness.
- (7) Support PMO with PM tools: The PMO is to be supported by software programs using the latest technologies.
- (8) Creation of an enterprise-wide project support office: Through which the PMO is to focus on key projects and offer informative assessments and strategic insights for these projects.
- (9) Build a good team, solid leadership, and clear ownership: Selection of competent staff and strong leaders and build a clear authorities and responsibilities.
- (10) Make it a center of Improvement: To focus on working as a catalyst and neutralize improvement across organization which will support achieving the strategic goals.

It should be recognized that IBM invested 15 years to make project management a core capability that drives growth and positive outcomes and results through their Project Management Center of Excellence. The Project Management Center of Excellence has played the role of interfacing between the community of IBM's project managers and other internal and external professional communities. To build a successful and real excellence center, IBM has developed a strategy that focuses on five areas as illustrated in Table 2.6 (PMI 2011).

Areas of Focus	Clarification
Using One unified approach for managing projects delivery	<ul style="list-style-type: none"> ○ The use of approaches that improves delivery, timeliness and deliverable quality while reducing project costs. ○ Communication is simplified and timelier with standardized tools, formats, and terminology. ○ IBM's World Wide Project Management Method (WWPMM) is the single project management method used across all IBM business units.
Competent project managers are assigned vital projects	<ul style="list-style-type: none"> ○ Project Managers are selected to be PMP and IBM-certified professional project managers.
The use of performance measures and metrics to assess project managers and business executives	<ul style="list-style-type: none"> ○ IBM consistently assesses projects' technical, schedule, and financial performance. ○ The use of historical project data to identify and evaluate trends and then improve current processes. IBM project ○ Project Managers, Project Teams, and Executives are assessed, recognized, and rewarded based on achieving project objectives and high customer satisfaction.
Building of committed and vibrant project management community	<ul style="list-style-type: none"> ○ Professional team members' support together to be skillful in practicing their job. ○ This includes mentoring other project managers, provides project management classes, performs project assessment and assurance and sharing of experience through "lessons learned" exercises and published papers.
The use of knowledge, experiences and best practices	<ul style="list-style-type: none"> ○ The documentation and reuse of Knowledge, experience, and best practices to support project

Areas of Focus	Clarification
	management maturity growing. ○ There is system managed by the Project Management Center of Excellence to ensure the effective capturing and reuse knowledge.

Table (2.6): The Strategies used by IBM to build mature Project Management Center of Excellence

PMI (2011) has mentioned that in spite of the fact that the Project Management Center of Excellence has more than 15 years but it is still playing a major role in IBM’s project management quality improvement and competency development. The Project Management Center of Excellence has linked its strategy with IBM strategy 2015 to support company growth and enlargement. IBM will continue focusing on three streams:

- Interconnect project teams through utilizing technology.
- The use of instrumented metrics and measurements and focus on scorecards, organization capability assessments, and business value metric.
- The focus on intelligent practitioners through enhancing their competencies by education, experience, industry recognition, and mentoring by more senior project and program managers.

Accordingly there are many factors that should be considered in order to establish and attain a sustainable and successful PMO. To build and establish the right PMO is not an easy assignment as it needs proper planning and a clear strategy; however its proper establishment is not the end point since maintaining the PMO and continuously improving it will assure its success and sustainable performance. Jane (2007) remarks that “Building a successful PMO has structural components similar to any other construction project including strong foundation and floor, solid structural supports, and a strong exterior are essential components of building your PMO” as illustrated in Figure 2.10.

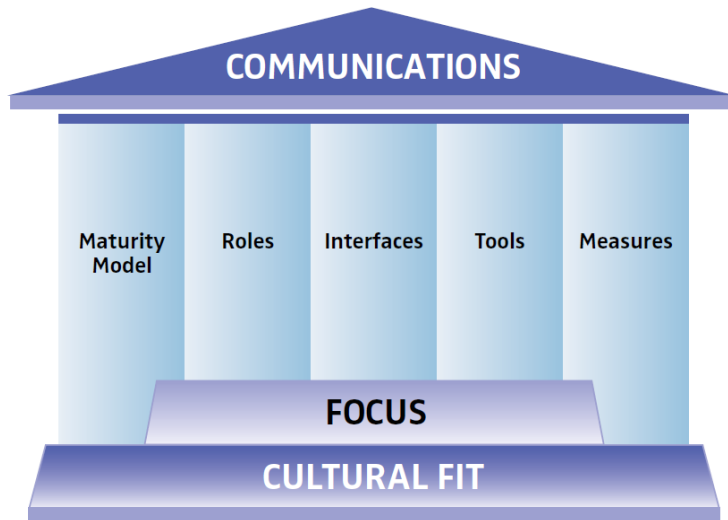


Figure (2.10): Component required for building PMO (Jane 2007)

PMI mentioned that the structure of the PMO is as illustrated in Figure 2.11 which clarifies. Cynthia (2007) observed that the PMO can be a centralized or decentralized structure and the selection of the appropriate structure depends on many factors as illustrated in Figure 2.12.

Project Management Office Organization Model

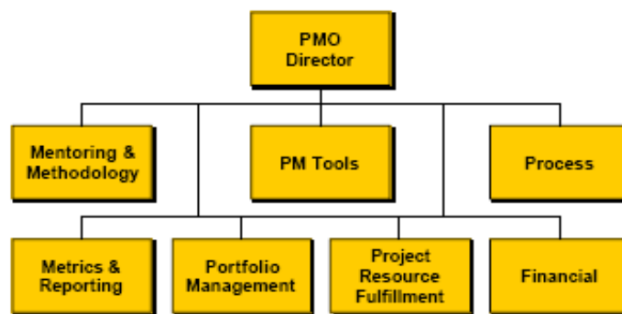


Figure (2.11): The PMO Organization Model

Monica and Gabriela (p.37) stated that “The type of PMO must be compatible with corporate culture, coming up with a PMO that works for any given organization is an exercise in both customization & patience, for establishing a PMO there are no road maps to follow, benchmarks to shoot or metrics against which to measure, the most effective PMO’s are those that reap improvements over time and continuously push the IT

department to improve on its performance”. He also mentioned that the PMO structure must compose of the following:

- PMO Director/ Manager
- Subject Matter Experts
- PMO Coordinator
- Project Managers

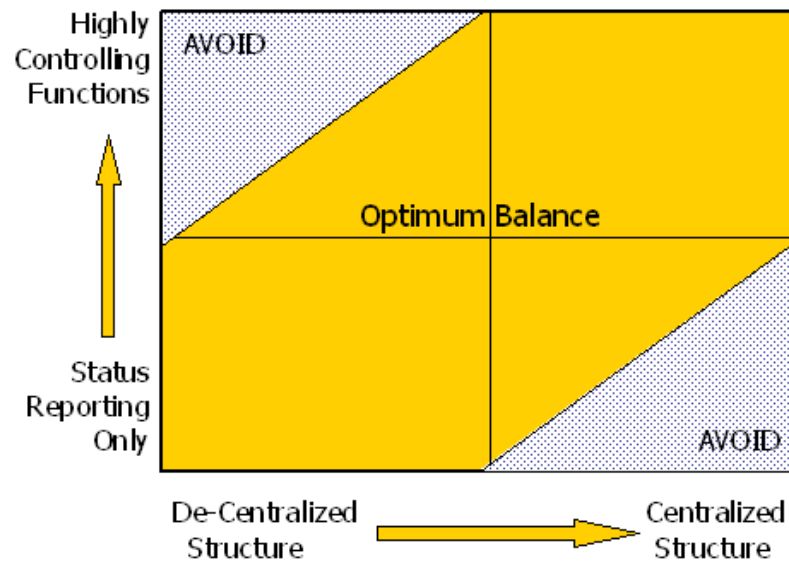


Figure (2.12): The PMO Structure Spectrum (Cynthia 2007)

Altahtoo et al (2013) in their study about the use of the PMOs in Saudi Arabia found that “the lack of understanding of a PMO’s value and roles is the obstacle that had a high overall agreement”. Accordingly newly established PMOs have to consider many things to assure their success, Felt and Korschak have mentioned 10 critical success factors that they concluded from their experience in managing project and establishing PMOs which are the following:

- Setting vision and mission for the PMO.
- Aligning the PMO with the organization culture.
- Linking the PMO strategy with the organization strategy.
- Defining clear terms, roles, and purpose.
- Identifying stakeholders.

- Identifying customers.
- Defining project management methodology.
- Identifying clear metrics.
- Training of the PMO and organization staff.
- Manage Intellectual Property.

Vagelatos et al (2010) have discussed the outsourcing of project management services in public services and mentioned that outsourcing project management is sometimes important especially in case of lacking of abilities and expertise in the current situation. However they mentioned the following advantages and disadvantages outsourcing as illustrated in the Figure (2.13). The outsourcing of services can help organizations to setup a basis for mature and strong PMOs, however the outsourcing shall not last forever and transition plan to the organization have to be in place and the most important thing is knowledge transfer in case of outsourcing.

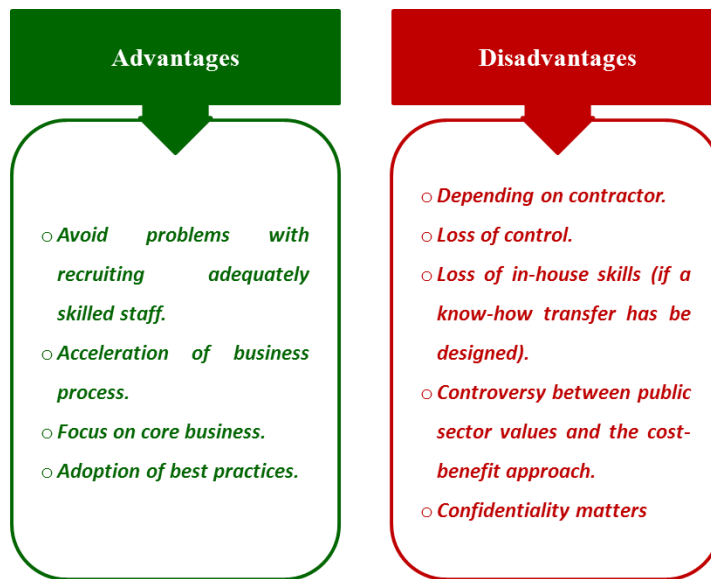


Figure (2.13): Advantages and Disadvantages of Outsourcing PMO Services (Vagelatos et al 2010)

Lendry (2006) has mentioned that there are some basic roles of the PMO and other advanced roles. The basic roles and services of the PMO involve:

- Establishing a consolidated status reporting.

- Setting up project dashboards.
- Project Management Methodology development.
- Methodology support and enhancement.
- Training.
- Project Management coaching.
- Project audit.
- Metrics Collection
- Organizational Assessments

On the other hand, Lendry (2006) has stated that there are some problems in that are facing PMOs and organizations shall be aware of it which are:

- Developing processes and expecting implementation from all concerned parties.
- All PMO staffs are experts.
- All projects follow and apply same approach.
- The lack or weak sponsorships.
- The poor communication.
- Pushing everything together with no focus on the added value tasks.

Accordingly, establishing new PMO is not an easy task and required detailed studies and analysis to assure its success. Lendry (2006) has also proposed an approach of 5 stages to implement a successful PMO as illustrated in Figure (2.14).



Figure (2.14): Steps to implement a PMO (Lendry 2006)

Chapter Three: Research Methodology

Many researchers have focused on the different roles of the PMO, and other have focused on the nature of PMO and its structures and staff members, and both have shown variation in roles according to the organizational needs. The purpose of this research is to propose the optimum PMO roles and structure for Ministry of Public Works based on needs and international best practices in this area.

Saunders (2011) has mentioned that research methodology is the approach used to acquire information and knowledge and producing and testing the theories and the relationship between the theoretical background and problem of the research. He mentioned that the most successful way to conduct a research shall involve the following steps:

- (1) Philosophy
- (2) Approach
- (3) Strategy
- (4) Data collection
- (5) Data analysis

The research philosophy is the generation of new knowledge and to increase understanding of its nature and these aims should comprise the basis of the research and its rationale (Miles & Huberman 1994). This research is in the field of business, where there are two different philosophies used which include the positivist approach through which the researchers are considered to be independent and not affected by the subject of the research and this approach is associated with deductive reasoning and inductive empirical studies (Saunders 2011). While the other philosophy is Interpretivism through which the researchers are required to realize the variations between the human and social actors and are generally implemented in business in, for example, the HRM and Marketing fields (Miles & Huberman 1994). As for this dissertation due to its nature, the field and author's preferences, the positivist philosophy and perspective is implemented.

There are two especially well-known approaches that are used in research investigations, the first one is the inductive approach through which the researchers gather information

and generate theories by using the results from the analysis of data, and this is usually used in exploratory research (Marschan & Welch 2004). While the other type is the deductive approach through which the researchers develop theories that are to be tested, and this is usually used for testing and verifying hypotheses (Saunders 2011). Since the aim of this research is propose the optimum structure and roles for MoPW PMO, a mixed approach between deductive and inductive is used in this dissertation.

There are five principal research strategies for research methods which are case studies, field experiments, surveys, archival methods, and historical analysis. The relevance and potential of each strategy should be evaluated according to the aims of the research (Marschan & Welch 2004). For this type of research on the PMO, the experimental and archival methods, and historical analysis are not appropriate due to the fact that this type of research does not need laboratory based or solely documentary data collection. The two most appropriate strategies for this research are case studies and surveys. Since the focus of this dissertation is on MoPW then it will be a single case study, and the survey strategy is not really suitable at this stage due to many reasons including:

- The accuracy of replies as some people reply with many answers while they don't have the real facts and experience.
- The nature of people in our case study and culture might lead to a low response rate.
- The nature of replies requires detailed answers from people that will be difficult to be incorporated within a survey.
- Some people might not be familiar with the concept of the PMO, and this might lead to non-accurate responses that are not wanted in this research.

Accordingly the qualitative research has been used in this type of research.

For data collection, there are approaches that include structured interviews through which comprehensive and detailed questions are used, semi-structured interviews through which inquiries, questions, and research subjects are arranged before organizing the interviews and the unstructured interviews which involve a comprehensive but non-formal interviews to support the researcher in running the interview sessions and organizing the interview (Marschan & Welch 2004).

The researcher is a staff member of the organization and has access to much of the case study information required and since the research strategy is a single case study that has open resources and access for the researcher, the approach that have been used for data collection involved the three types of interviews: structured, semi-structured, and unstructured. These different interview techniques will all be used to satisfy the aim of the research including preparing a list of questions that help in understanding the current situation and real need within MoPW while other information will be collected by the researcher due to the fact the she has good access to most of the staff and information within MoPW.

To support the data collection process and facilitate the interviews a list of questions was drafted. The different forms of questioning have been used in these interviews including open and the closed question formats. An introduction has been made for the interviewees before starting the interviews clarifying the aim of the research and its objectives especially for the senior level staff.

The selected samples were selected from the case population based on the likelihood that they would be able to assist with fulfilling the research objectives. Different people were selected from different levels within MoPW (managerial, senior's staff, specialists and experts, and junior staff) and were chosen with the aim of representing different point of views and experiences with a focus on those who have an understanding of the project management functions and the role of the Project Management Office (PMO). Many people have been selected for the informal interviews to understand various aspects of the case issues.

Saunders (2011) has mentioned that there are several essential steps to accomplish a successful research project which are data reduction, data presentation, and making conclusions and recommendations. However, for this research the following steps have been adopted:

1. Conducting literature review and analyses of the PMO concept, structure, and roles.
2. Analysis of best practices of PMOs worldwide and from within the UAE environment.
3. Designing and articulating questions.

4. Conducting meetings, interviews, and data collection.
5. Data manipulation and analysis.
6. Extracting conclusions and classifying needs and priorities
7. Recommendations and road map for establishing a PMO.

To ensure the accuracy of the collected data, a focus on rigorous data collection has been adopted at an early stage of the research. One of the key strengths of this research is that the researcher has open access to most of the information required; therefore she can assure that all data collected is accurate and reflect the actual situation for the case study, however this case situation cannot be publicized or generalized to other organizations as each case has its own variables and situation that require different styles of analysis and recommendations. This research is a unique research case study especially in the UAE where not that many organizations have yet adopted PMOs.

The analysis of the case situation within the MoPW has involved two main methods of data collection which are the individual interviews with key personnel from different levels and the daily interaction and knowledge of the researcher who works within the same organization and knows so much about the current situation within the organization. The interviews and data collection was done in a structured way to match with the theory identified in the academic literature and different research studies recently conducted by other researchers and consultants.

A list of questions has been developed by the researcher to help with managing the structure and flow of the interviews in addition to understanding the meaning of different concepts of the PMO. The researcher conducted the first interview as a pilot to help with running the interviews and reflect on learning derived from this initial study and to apply it to the other interviews. No changes were required to the list of questions; however the follow-up techniques used required more detailing for the questions to obtain in-depth answers and feedback from interviewees.

The formal interviews details are clarified within Table (4.1), and after running the five interviews, and obtaining further information from open sources for the researcher, a

comparison has been made to check the accuracy of the results and reflect that within the research results.

Interview #	Job Title	Division
1	Director of Urban Planning	Housing and Urban Planning
2	Head of Contracts	Corporate Support
3	Deputy Director of Execution	Public Works
4	Head of Strategic Planning	Minister - Strategic Planning
5	Head of Roads Projects	Housing and Urban Planning

Table (4.1): List of Formal Interviews

Chapter Four: Data Analysis and Discussion

4.1 MoPW Analysis

The Ministry of Public Works employs around 500 staff members; it has three key divisions and 16 departments as illustrated in the organization structure in Figure 4.1. Although the core business of the Ministry is dependent on projects it has a functional structure through which there are two main divisions which are Housing and Urban Planning, and the Public Works. Moreover there are offices within each district of the northern emirates which follow the Ministry works within each district.

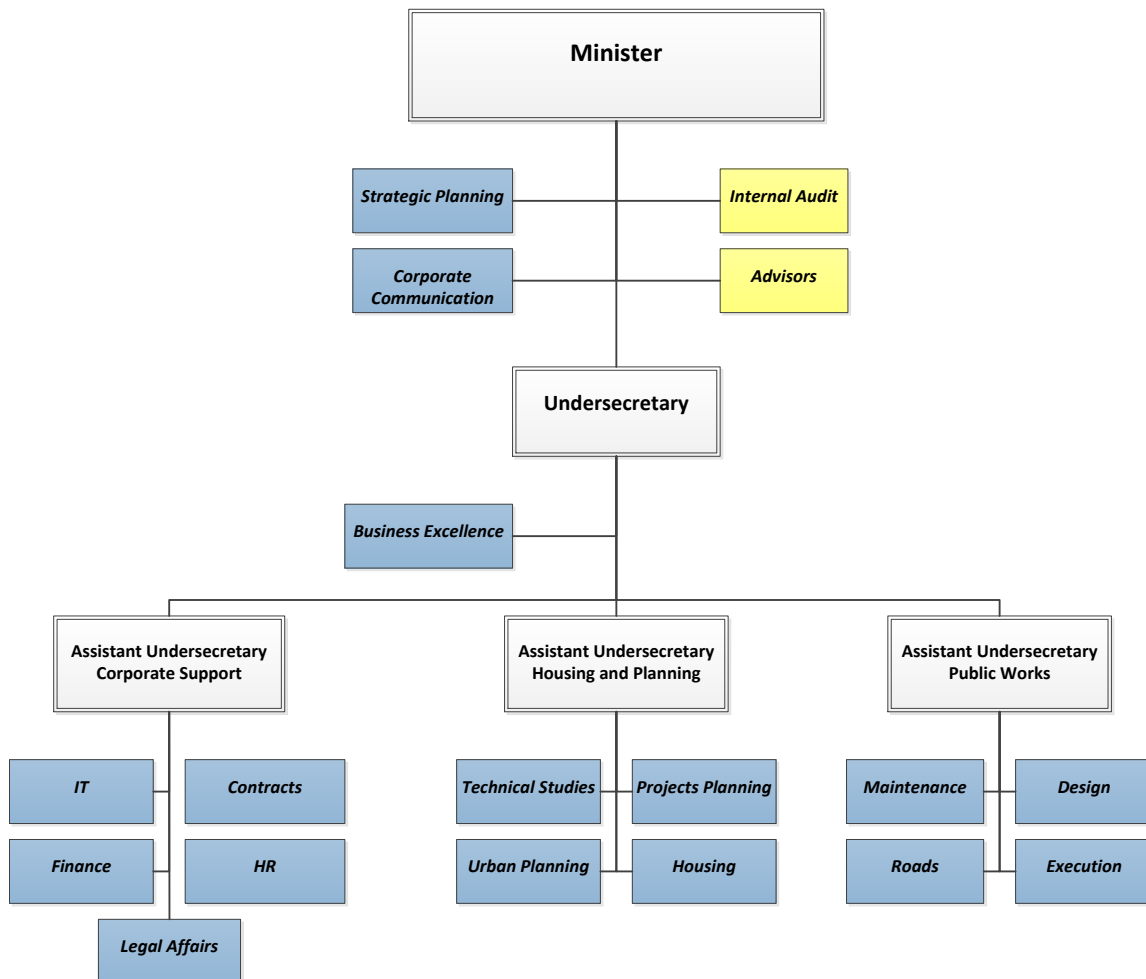


Figure (4.1): The Organization Structure of MoPW

The following sections represent the analysis of the situation in MoPW based on the analysis and interpretation made by the researcher and according to the functions of the PMO proposed by Hill (2008). Each function of the PMO proposed by Hill (2008) has been represented on a different section within the following parts, and analysis and interpretation for the current situation of within MoPW has been presented within each section discussing the current gaps and situations of that function.

From another hand, prioritization for each function has been proposed at the end of each section and linked with the development plan for the PMO. The prioritization has been set based on the following criteria:

- The existence of the function within MoPW even if the function is being handled by different department. The lesser availability of the function indicates higher level of prioritization.
- The level of need for the function within MoPW based on the interviews and analysis of the situation.
- The familiarity of the function as a function of the PMO, and its impact in case of it is been applied.

4.2 Practice Management

4.2.1 Project Management Methodology

The project management methodology is one of the most important functions of the PMO. The understanding of the current situation this task has shown that there are gaps and there is a need for a unified criteria and processes to manage projects. The results of the interviews have led to the following findings:

- There is a need to enhance the level of managing projects through implementing unified project management methodology according to international best practices. Having the appropriate PMO will ensure bridging the gaps in managing project processes through having smooth transfer of projects between different departments and will assure having clear roles and responsibilities for project managers and

concerned departments of projects and decrease the amount of overlapping between their duties.

- It was clear that there are no clear processes for managing projects, and therefore no clear roles and responsibilities and many project failures are occurring in not adhering to the projects' cost budgets and timings.

Since this role is considered vital for the MoPW, it will be considered at the highest level of priority for improvement.

4.2.2 Project Tools

The project tools that are used are MS. Project and Primavera applications, however there are no unified tools or project tools that are used between different departments due to lack of unified systems that can provide an integrated reporting for the projects as an overall organizational project management tool. The resultant outcome of the interviews is that there is a need for a unified tool for managing projects within MoPW which can provide an integrated reporting system and most importantly a unified system for planning, executing, and follow-up of projects.

Due to the fact that this role is important for unifying the procedures within MoPW, it should be considered at the highest level of priority for improvement.

4.2.3 Standards and Metrics

This role contributes along with the other roles and is an advanced level for managing projects through implementing international standards or developing internal standards for managing projects. However, due to the fact that there is no unified project tools and lack of project management methodology, there are no standards that are implemented within MoPW other than those sponsored by the Business Excellence Department like ISO9001. Accordingly once the MoPW implement a unified methodology, there will be a need for standards to be implemented or even developed as best practice.

To implement standards and be the best in class, MoPW has to have unified procedures and methodologies and this will need time for implementation, therefore this role will be considered as a relatively low priority for current implementation.

4.2.4 Project Knowledge Management

Due to the fact that there is no central unit responsible for managing projects, then there is no unified mechanism or tools that are implemented for knowledge management within MoPW. However there are some knowledge sharing practices that are implemented on a non-periodic basis like workshops and brainstorming sessions but there is no document management system or library within MoPW.

This role is very important but there are functions that are even more important than this role, therefore this role shall be considered as a medium term requirement for implementation.

4.3 Infrastructure Management

4.3.1 Project Governance

Due to the fact that the core business of MoPW are all projects, then the project governance can be seen as an integral part of corporate governance. The management structure in MoPW involves having many management committees (i.e. Executive Leadership Committee, Projects Committee, Internal Audit Committee, and other committees) however, the role of those committees are managed through the Minister and Undersecretary Offices. Other committees are sometimes established at sector level for specific tasks; sometimes with temporary roles and sometimes with permanent roles. Moreover, there are units that can show whether there is duplication in those committees tasks with no clear follow-up for those committees' management (i.e. composition, size, tasks, chairpersons, charter, etc.).

The MoPW is currently implementing a risk management methodology at the organizational level but it is not implemented throughout MoPW, in addition, there is no clear methodology for managing risks at the projects level. Accordingly there is no clear

entity responsible for identifying risks, mitigating risks, and managing its impact and reporting its status at corporate level.

The Health, Safety, and Environment (HSE) issues are well managed through the Business Excellence Department and through project teams due to the nature of MoPW projects that involve many HSE related issues. Moreover they are implementing some HSE standards and through an integrated system. The MoPW have an organizational HSE policy that involves a code of conduct from the management to HSE. Currently, this policy does not focus on socio-economic related issues or adherence to related international standards. According to that, some areas of the project governance function are being handled by different departments but significant changes and improvements are required, therefore this function should be considered for improvement on the medium term.

4.3.2 Assessment

The maturity assessment in MoPW has been performed several times due to the fact that by assessing the projects maturity, the assessment will involve assessing the core business. However, the assessments are conducted every time based on different purposes and with no clear follow-up and actions to enhance the level of maturity.

Although this role of the PMO is important, there are functions that are comparatively more important, and since this function has some implementation, then it have to be considered as an area for action and improvement in the long-term.

4.3.3 Organization and Structure

As there is no PMO, the function of organization and structuring is handled by the Top Management, and specific things related to internal project organization are performed by the sector itself. This function is handled by other departments and not the PMO, consequently there is no need for applying this function to the PMO at the current stage and it should be considered for action only in the long term.

4.3.4 Facilities and Equipment Support

The function of managing equipment and project management facilities including computers desktops, laptops, audio equipments, measurement devices, printers, and other heavy equipments and hardware's are handled either by the IT department while other heavy equipments are handled by departments itself knowing that the MoPW don't own equipments and ownerships is to suppliers. Therefore this function can be handled by the IT Department however for specific purpose equipments related to architectural designs and all these tools, the PMO can help in that but this should not be a priority. Accordingly, this function can be considered in the long term for the PMO.

4.4 Resource Integration

4.4.1 Resource Management

Managing and utilizing project teams and identifying the needs from human resources, assigning, monitoring, evolving performance management guidelines and review and monitor performance, and coordinate extension of resources, resources transfer and terminations is handled by the Human Resources Department, however this function lacks unified guidelines for managing project managers' performance in addition to the problems of estimating and forecasting the future needs of projects resources. Therefore there is a need for proper functioning of resources management. Also, the resources management function involves the financial resources management; this function has many gaps in commitment to the budget. Table 4.2 is illustrating the comparison between the budgeted expenses of projects and the actual expenses.

Year	No. of Projects	Actual Expenses	Budgeted Expenses	%
2009	64	960,747,231	1,039,247,000	92%
2010	47	836,186,332	1,198,000,000	70%
2011	42	742,625,083	1,128,333,000	66%
2012	81	592,553,865	994,323,000	60%

Table (4.2): Comparison between actual and budgeted expenses of projects

Some of the reasons beside these disparities in estimated budget and actual costs can be seen in the figures in Table (4.3).

Detail	No.
Projects exceeds the budget by 23%	17
Projects with less than 6% of the estimated Budget	8
Projects finalized within the budget limits	25
Projects have with no utilized budgets	16
Projects under execution	42
Postponed projects	6

Table (4.3): Summary of details for current projects in MoPW

There are several reasons that led to the above problems,including:

1. The increase in project timings in stages of documents preparation up until contracting
2. Changes in designs
3. The late responses from concerned ministries and government departments
4. Other reasons.

Based on that, the function of financial management shall be one of the key functions of the PMO in addition to the proper understanding of stakeholders' needs in addition to the planning function. Therefore this function is important to be considered in the short term and should be at the highest level of priority for the PMO.

4.4.2 Training and Education

The training and education area shall be a key function for the PMO through which PMO can perform training to project teams on new tools and methodologies until reaching to a point where there are mature project management teams who handle the work in ways that achieve sustainability. The current situation in MoPW, is that project teams have no unified training plan and education that accurately matches the actual needs of departments. Each department is assessing their needs following guidelines issued from the HR Department but there are no clear training and education plans for project teams.

This is one of the key functions that PMO has to handle, but can be considered as a medium term priority.

4.4.3 Career Development

The function of career development is very important due the high rate of turnover of project staff. The career development function is handled by the HR Department but it is not clear and project staff have no clear career path. Employees are concerned about their future and although many studies have been conducted to establish more career development programs for project staff, there is no owner who can push such programs and support the HR Department in managing this function. Therefore this function can be considered as requiring attention in the long term as it is of low priority in contrast to other functions of the PMO.

4.4.4 Team Development

The function of developing teams is important as it can form source for organizational culture to promote working with a team spirit and enhance having a project management culture. Given the fact that projects are performed by teams there should be clear performance measures for team members and promoting learning processes between different teams. The current situation in MoPW is that there is no central entity responsible for controlling projects, and therefore few team development and learning processes are implemented in spite of its importance for the continuous improvement of the teams and project management practices. Similar to the previous role, this has to be considered in the long term due to its relative importance compared with other PMO functions.

4.5 Technical Support

4.5.1 Mentoring

The mentoring role is combined with career development. Within MoPW this role is not effective and not applicable at all, however this role can't be considered the first priority as mentoring can be considered as one of the more advanced training method. Accordingly, this role can be considered as more for the long term.

4.5.2 Project Planning

One of the key functions that requires a central and organizational entity for MoPW is project planning. The need comes due to the fact that there is variation in projects planning between different departments which causes delays in many projects, and consequently increases costs overrun and low customer satisfaction. The delays in completing projects comes from several reasons and can be summarized in the following:

1. The lack of unified project management methodology between different departments
2. The inappropriate involvement of stakeholders in project initiation stages
3. The late decision approvals made by senior management.

Accordingly, there is a need for central entity that leads the efforts of project planning within the MoPW and controls it. Therefore this role should be within the high priority roles that requires consideration in the short term.

4.5.3 Project Auditing

The audit function is handled by the Internal Audit Department however the audits performed by this entity are financial and procedural audits while other quality related audits are performed by the Business Excellence Department. The only gap that has been noted in MoPW is the lack of project auditing although the other types of audits can cover it. Therefore this role has to be considered as a priority in the medium term.

4.5.4 Project Recovery

There has been a lack of project recovery within MoPW chiefly because there were no practices for project recovery. The only recovery that has been conducted was the IT systems, other than this there was no recovery performed for projects i.e. HR recovery, equipments recovery or even having back-up plans in case of disasters or other emergency situations. Consequently there is a need project recovery mechanisms implemented through a central entity within MoPW, and this need is high and should be considered in the short term.

4.6 Business Alignment

4.6.1 Project Portfolio Management

This is a strategic macro role of the PMO and involves many sub-functions which are strategic alignment, project screening, project integration, project reviews and closing, and assessing impact and strategic results.

As for the strategic alignment role, there was limited strategic alignment with the strategy of the MoPW due to the fact that the projects needs are completed on a yearly basis and the strategy is a 3 years plan with no clear communication between the projects owners and the departments with the Strategic Planning Department. There is no clear mechanism implemented to prioritize the projects and portfolios, and there is no clear portfolio management system implemented by the Strategic Planning Department.

The project screening and project integration involve new screening, prioritizing, financing, and funding of projects. As yet, within MoPW there is no clear mechanism to handle this function although it has a very important impact on the project management environment for any organization. In contrast, the project reviews and closing actions are almost effective and handled by project teams and usually senior staff level participate in project closing, and follow-up. Reviews are conducted on project performance on a periodic basis but are done by different committees and according to the type of project.

The impact and portfolio results are performed by the Strategic Planning Department but at a limited level through measurement of strategic performance indicators. No systematic actions are made based on the results of measurements and when it is done, it is performed for the whole organization level. Therefore this role is a significant area for organizational and performance improvement and should be accorded the highest priority for consideration in the short term.

4.6.2 Customer Relationship Management

Managing customer relationships is an important function since they are considered the key judge of the quality of projects, currently, this function is handled by the Business Excellence Department, however there is a need to focus on the internal customer like all

departments and project teams as projects sometimes are moving from department to another department without assessing all segments of customer satisfaction.

There are more roles of the customer relationship management including customer information, customer contracts, and customer satisfaction management which is not being performed in MoPW, therefore there is a need for this function in addition to managing and measuring customer satisfaction as one of the strategic aims of MoPW. Accordingly this role needs to be considered as a medium term priority.

4.6.3 Vendor/ Contractor Relationship Management

Vendor relationship management involves managing vendor relations and managing vendor performance. This role in MoPW is being handled by the Contracts and Purchasing Department and performance evaluation is being run at corporate level through this department. Classification of vendors based on the type of services and contracts has been performed, and special evaluation criteria are implemented. Therefore this function is not a high priority for improvement and there is no urgent need for such function within the PMO at this stage, but it should be re-considered in the long term.

4.6.4 Business Performance Management

This is an important function that currently has no clear owner within MoPW as each department is handling the analysis of its performance based on different performance indicators, in addition to this the function makes no periodic monitoring of performance with no systematic analysis for the causes of the current results. However the Strategic Planning Department is following some key indicators at organizational level like projects on budget, finished projects, late projects, and other KPIs. However this follow up and analysis shall be combined with root cause analysis and actions shall be taken to achieve the required results based on that. Therefore there is a need for a strong role for the PMO in this regard in the short term and it should be considered as a high priority.

Chapter Five: Conclusions and Recommendations

5.1 Conclusions

PMOs play various roles in organizations that vary considerably between organizations even those within the same country and same sector. Organizations set up PMOs based on their needs and requirements to achieve the optimum efficiency and performance. This role can be supporting, coordinating, controlling, or a mixed role, accordingly the structure, number of staff, location within organization also vary. Therefore deciding and selecting the optimum PMO based on organization need, can lead to PMO success or failure.

The PMO location within organizations might also affect its maturity and roles, and the number of staff in the PMO should not matter, some organizations may have 10 PMO staffs while others have hundreds. Several factors impact and affect the organization's PMO needs and can include:

- The nature of organization structure (functional, matrix, or project team structure): Having a full project team structure organization means that staff are project oriented and project management is the core business of organizations. However the case will differ if the organization's structure is functional or even a matrix.
- The departments that exist with the organization: Some organizations have specific departments that have specific functions (i.e. internal audit, HR development, knowledge management etc.) and this can reduce the role of the PMO in some functions.
- The size of organization: Having a large size organization with different branches and thousands of staff members will very likely be different from medium or small organizations.
- The industry of organization and the maturity: Organizations working in the IT sector will have well educated people on project management while working in the

construction or petroleum sectors means having variation between people within the same organization.

Organizations might spend money and resources on establishing PMOs with roles that are not required to bridge the gaps, therefore this will lead unsatisfied leadership about the PMO performance and could make the job of the PMO staff more difficult. Therefore establishing the right PMO with the right roles and structure is a Critical Success Factor (CSF), and the analysis of the real needs and situation is very important to complete before taking the decision of establishing and specifying the roles of the PMO.

Moreover, the correct establishment of the right PMO roles and structure is not static as roles and responsibilities and PMO maturity must be reviewed periodically to match the organization needs and requirements. This is due to the fact that organizations are improving and the current project management needs in organizations will often be different from the needs after three or five years.

The analysis of the situation in MoPW has shown that there are many gaps in many project management practices. The PMO can bridge the gaps and reduce its impact through establishing the right and correct roles of the PMO, and through having the correct strategy for the establishment of the PMO. Although MoPW’s core business is focusing on project management the organization structure is a classical functional structure.

Based on the analysis and discussion prescribed in the section 4, the needs for MoPW according to the 20 roles specified by Hill (2008) has resulted with the data specified below based on the actual needs and requirements and as illustrated in Table (5.1) to Table (5.5) and according to the following:

- Practice Management Role:

PMO Roles	Nature of Role	The need within MoPW
Project Management Methodology	Coordinating, Controlling	High
Project Tools	Supporting	High
Standards and Metrics	Controlling	Low

PMO Roles	Nature of Role	The need within MoPW
Project Knowledge Management	Supporting	Medium

Table (5.1): The Need of Practice Management Role

- Infrastructure Management Role:

PMO Roles	Nature of Role	The need within MoPW
Project Governance	Controlling	Medium
Assessment	Controlling	Low
Organization and Structure	Controlling	Low
Facilities and Equipment Support	Supporting	Low

Table (5.2): The Need of Infrastructure Management Role

- Resource Integration Role:

PMO Roles	Nature of Role	The need within MoPW
Resource Management	Controlling, Supporting	High
Training and Education	Coordinating	Medium
Career Development	Coordinating	Low
Team Development	Coordinating	Low

Table (5.3): The Need of Resource Integration Role

- Technical Support Role:

PMO Roles	Nature of Role	The need within MoPW
Mentoring	Supporting	Low
Project Planning	Coordinating	High
Project Auditing	Coordinating, Controlling	Medium
Project Recovery	Coordinating, Controlling	High

Table (5.4): The Need of Technical Support Role

- Business Alignment Role:

PMO Roles	Nature of Role	The need within MoPW
Project Portfolio Management	Controlling	High
Customer Relationship Management	Coordinating	Medium
Vendor/ Contractor Relationship Management	Coordinating	Low
Business Performance Management	Controlling	High

Table (5.5): The Need of Business Alignment Role

The resulted outcome of the needs and requirements of the PMO has shown that the MoPW needs vary between the different roles (controlling, coordinating, and supporting) which indicates that there are gaps in all levels of roles and that that the MoPW needs a mixed set of roles and PMO/s which can satisfy its needs and bridge the current gaps in managing projects.

According to the previous evaluation of the MoPW priority needs, there are 7 PMO roles that are considered as high priority to be considered as the PMO role, while there are 5 medium priority roles, and 8 roles that are considered as low priority roles. The priority of these shall be reflected in the creation of the successful PMO as follows:

- The high priorities roles are to be mitigated through making it effective within the first two years of PMO establishment (short term).
- The Medium priorities roles are to be mitigated through on the medium term and making it effective within three years.
- The Low priorities roles are to be mitigated on the long term and making it effective within five years.

5.2 Recommendations

The below recommendations are classified according to the targeted stakeholders:

(1) MoPW Senior Executives: The following recommendations are specified for the most senior executives including The Minister, Undersecretary, and the Assistant Undersecretaries:

- It is highly recommended to establish the right PMO to the MoPW needs as this PMO will establish the basis of project management, enhancing the current culture of project management, and unify the methods of managing projects within MoPW.
- To ensure the non-duplication and accurate strategic alignment of project with the MoPW strategy, it is recommended that the PMO be a part of the Strategic Planning Department. In this way the MoPW will ensure alignment of the business units' strategy with the organization strategy, ensure having a strategic direction towards having a mature project management organization and culture, and the PMO will be in direct contact with the highest authority in MoPW which can provide them a control role and support them with information and data that support accurate decision making processes.
- The results and impacts of the PMO will appear on the long term but immediately, therefore the PMO shall be given time and resources to build up its capability and resources, and results will start appearing after 3 to 5 years.
- Due to the fact that establishing highly mature PMO will require a period of time, it is highly recommended to implement a step-by-step strategy in establishing this PMO starting with the highest to the lowest priorities specified within the conclusions section and as it is clear in Figure (5.1).

(2) MoPW Projects and Future PMO Staff: The following recommendations are specified for projects staff with different departments, and the prospective PMO staff:

- Building strategy to establish a mature PMO: To build a sustainable and mature PMO, stages in Figure (5.2) are recommended to be considered based on the prioritization of roles specified in section 5.1.

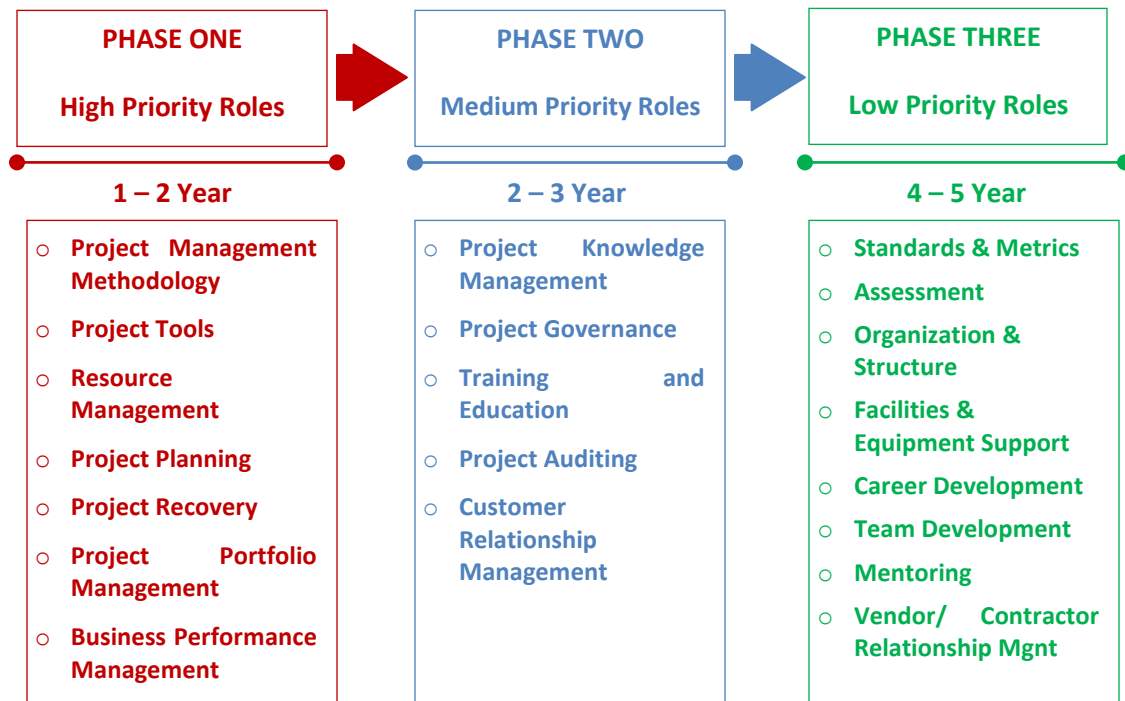


Figure (5.1): The Establishment of MoPW PMO Roadmap

- MoPW might need to consider divisional PMOs or coordinators at the sector levels to facilitate the PMO roles and support the organizational reporting channels.
- An accurate PMO staff recruitment study and manpower plan has to be conducted to avoid over-staffing in the future.
- There are some critical success factors that has to be considered to avoid failure in the PMO roles including the following:
 - (1) Proper awareness and understanding about the roles of the PMO especially the top management.

- (2) The integration of focus on both short- and long- term success by proper planning.
 - (3) Involving all departments in the PMO work and proper change management techniques, as this is a new entity and will face some internal resistance especially at early stages of establishment.
 - (4) Manage the expectation of leadership and all stakeholders to avoid affecting their success and early failure.
 - (5) Assess the value of outsourcing the PMO services at early through performing scenarios and feasibility study.
- The PMO structure is recommended to be according to the phases and units planned and covering the roles specified in each phase of the roadmap. This means that the PMO structure is not static but has to be flexible and change with changing the needs of the MoPW.
 - The following roles of the PMO are to be shared with other department within MoPW, therefore specific procedures and clear roles are to be coordinated with the respective departments as illustrated in Table (5.6).

Role	Department
(1) Resource Management	Finance Department
(2) Business Performance Management	Strategic Planning Department
(3) Training and Education	HR Department
(4) Project Auditing	Internal Audit
(5) Customer Relationship Management	Business Excellence Department
(6) Standards and Metrics	Business Excellence Department
(7) Organization and Structure	HR Department, Top Management
(8) Facilities and Equipment Support	IT and Assets Department
(9) Career Development	HR Department
(10) Team Development	HR Department

Role	Department
(11) Mentoring	HR Department
(12) Vendor/ Contractor Relationship Management	Contracting Department

Table (5.6): Shared PMO roles in MoPW

(3) Future Research: The following research studies are recommended for researchers who will carry similar studies in the field or within MoPW:

- It is highly recommended to conduct research that cover a number of organizations that have a PMO and study what are the roles that those PMOs are mostly having. This research will help in providing figures about what are the current roles that PMOs are frequently having within the UAE and Middle East. A comparison with organizations worldwide will also be beneficial to understand what are the PMO roles that do not have an effective focus, and what are the reasons behind these omissions and inefficiencies.
- A study/research to specify the impact of establishing a PMO on the performance of MoPW after 3-5 years. This shall be a comparison study between the current situation and the future situation in order to evaluate the advantages and disadvantages of its establishment.
- It is recommended for researchers to study the relationships between the number of organization staff and size with the number of PMO staffs. This is to specify whether the size of organization dictates a specific level of staffing within PMOs.
- A study to cover the awareness level about the PMO and its roles is also recommended. This research will help to specify the current level of awareness with the different staff classifications, and will help in setting plans to promote this business unit within organizations and businesses.

- A study about the outsourcing of PMO services in in public sectors of UAE can have a value added in the field of project management office. The research can combined with of critical success factors for newly established PMOs.

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