Proposal for a Project Management Office "PMO "

in the Public Establishment of Housing in Syria

اقتراح لإنشاء مكتب إدارة المشروع"PMO " في المؤسسة العامة للإسكان في سوريا

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Proposal for a Project Management Office "PMO" in the Public Establishment of Housing in Syria.

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الشكر لله تعالى على فضله وتوفيقه

أخص بالشكر والامتنان الدكتور المشرف على هذه الرسالة د. محمد شعبان لتوجيهاته وإرشاداته القيمة،

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وكل الشكر والتقدير لمديرة البرنامج الدكتورة سونيا الأحمد لجهودها الحثيثة وكل ما قدمته من دعم وتفهم وتعاون.

كل التقدير والاحترام لأساتذتي الأكارم في الجامعة الافتراضية السورية الذين لم يدخروا جهداً في تقديم معارفهم العلمية والعملية.

ولكل من ساهم في إنجاز هذا البحث.

إلى روحيكما الغاليتين أفتقدكما جدًا: أبي كنت ومازلت منارتي، وأخي عمرو قطعة من

روحي رحلت قبل الأوان.

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أصدقائي في رحلة الماستر من تعلمت منهم ومعهم الكثير كل الحب والتوفيق

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Abstract:

- In today's rapidly changing world where change is the master of the situation, the rapid development of project management practices in the business world has become a necessity rather than an option.

- Organizations operate in a competitive environment and for this reason they look for what distinguishes them from their competitors, improves the success of projects, (PM offices or PMOs) gives this feature, hence, organizations have adopted PMOs in many industries including the construction industry.

- This study highlighted the importance of applying modern project management methodologies in Syria in order to keep pace with the global market, especially through adopting Project Management Offices (PMO) in its construction industry as (PMO) is the ideal approach in managing projects efficiently and successfully.

- The Public Establishment of Housing in Syria has been selected as a case study because of the importance of the housing sector in Syria, which was affected by the Syrian crisis and the recent earthquake, which led to an increase in the demand for housing.

- A framework has been proposed and developed for PMO implementation and operation in the Public Establishment of Housing in Syria. This proposed Project Management Office aims to improve the reality of its project management by ensuring that these projects are completed in a timely manner, within budget limits, and to the required quality standards.

- The methodology used in this research included two axes: the first is a study of the literature for a deep understanding of PMO, and the second is interviews with housing organization employees to identify current practices in project

management in the organization and what problems they suffer from, and then suggest the appropriate type of project management office for it.

الملخص:

- في عالم اليوم المتسم بالتغير السريع، حيث التغيير هو سيد الموقف، فإن التطور السريع لممارسات إدارة المشاريع في عالم الأعمال أصبح ضرورة وليس خيارًا.

- تعمل المنظمات في بيئة تنافسية ولهذا السبب فإنها تبحث عما يميزها عن منافسيها ويحسن نجاح مشاريعها، حيث تقدم مكاتب إدارة المشروعات (PMOs) هذه الميزة، وبالتالي، فقد تبنت المنظمات PMO في العديد من الصناعات بما في ذلك صناعة البناء.

- تم تسليط الضوء في هذه الدراسة على أهمية تطبيق منهجيات الإدارة الحديثة للمشروعات في سوريا من أجل مواكبة السوق العالمية، وخاصة من خلال تطبيق مكاتب إدارة المشروعات(PMO) في صناعة البناء والتشييد، حيث أن مكتب إدارة المشروعات (PMO) هو النهج المثالي في إدارة المشاريع بكفاءة ونجاح. تم اختيار المؤسسة العامة للإسكان في سورية كحالة درسية، نظراً لأهمية قطاع الإسكان في سوريا الذي تأثر بالأزمة السورية والزلزال الأخير ما أدى إلى زيادة الطلب على السكن. وقد تم اقتراح وتطوير إطار عمل لتنفيذ وتشغيل مكتب إدارة المشروع في المؤسسة العامة للإسكان في سوريا. يهدف مكتب إدارة المشروعات المقترح هذا إلى تحسين واقع إدارة المشروعات في المؤسسة من خلال ضمان إكمال مشاريعها في الوقت المناسب، ضمن حدود الميزانية، ومعايير الجودة المطلوبة.

- تضمنت المنهجية المستخدمة في هذا البحث محورين: المحور الأول هو دراسة الأدبيات لفهم عميق لمكتب إدارة المشروعات، والمحور الثاني هو إجراء المقابلات مع موظفي المؤسسة العامة للإسكان للتعرف على الممارسات الحالية في إدارة المشاريع فيها وما تعانيه من مشاكل، ثم اقتراح نوع مكتب إدارة المشاريع المناسب لها.

الكلمات المفتاحية: إدارة المشروعات، منهجية إدارة المشروعات، مكتب إدارة المشروعات PMO، تنفيذ مكتب إدارة المشروعات PMO.

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1. Chapter one: Research plan and Previous studies

1.1 Introduction:

- Organizations around the world are facing increasing competition and project management complexity due to the need to create more products, services, and processes.

  According to the project management institute (PMI, 2013) Project management is the application of appropriate knowledge, skills, tools and techniques to project activities in order to meet its requirements.

- (Kerzner, 2003) defined the project management as it is "planning and organizing, Direction and control of company resources for a relatively short-term goal setting to complete specific goals and objectives."

- As the organizations faced challenges in managing several important strategic projects simultaneously, which is often a difficult and complex task, especially in the construction sector where there are many stakeholders, processes, policies and procedures, they realized the importance of project management in organizing projects and achieving profitability as well, they began to focus on professionalism in project management, and the way to achieve this was through the establishment of project management offices (PMOs).

- Project Management Office (PMO) is an organizational unit created to assist project managers and different levels of management in implementing professional project management principles and practices, coordinating and monitoring all projects in the company, gathering best practices for project management, appropriate selection of methodologies, tools and management techniques, and managing communication, in order to ensure the success and integration of their projects.

- Despite the short life of PMO, this administrative phenomenon has brought about a "radical" change in the way project management and practices are monitored. For this reason, the diversity of characteristics, roles and types of PMO has attracted a lot of attention in scientific research activities related to this field. Project management practices have been increasingly used in a variety of project businesses and industries as a source of corporate competitive advantage.

- A large number of researchers and experts, including the Association for Project Management (APM, 2006), Project Management Institute (PMI, 2013) and (Taylor, 2011) have found that setting up project management offices (PMOs) can lead to higher levels of project success, with strong and consistent project management practices. starting in 1994, the implementation of PMOs in organizations began to increase significantly since that time (Dai & Wells, 2004).

1.2 Research Problem:

- The Syrian crisis had led to the displacement of many people, and the housing sector has been severely affected. **The Public Establishment of Housing in Syria** is responsible for providing affordable housing for citizens, but due to the fact that the majority of projects in Syria are suffering from the problem of faltering and delayed projects and the effects of the crises, the need for a project management office (PMO) is essential to ensure effective project management and timely delivery of housing projects.

- This research clarifies the need for PMO Implementation and its importance, how to establish and Operate a PMO in **the Public Establishment of Housing**, its role, its organizational structure, the roles and responsibilities of PMO staff.

1.3 Research Importance:

- The importance of this study is in providing a framework that defines the steps and processes necessary for implementing and operating the proposed PMO in **the Public Establishment of Housing in Syria** as a case study, which is still a new topic and has not been widely applied, and there are only a few experiences and researches in this field in Syria.

1.4 Research Objectives:

- The objectives of the study are as following:

  A) To propose a Project Management Office model for the public establishment of housing by clarifying the steps and processes required to establish and operate the proposed PMO in the public establishment of housing.

  B) To study the current project implementation practices in **the Public Establishment of Housing** and analyze Factors and Challenges of implementing the project management office (PMO).

C) To Clarify the best practices that lead to PMO success and avoid the mistakes that make most PMOs fail.

1.5 Research Methodology:

- This study adopts both the descriptive analytical and applied approaches. Qualitative approach was chosen, as it allows collecting more wide and rich data, and ensures more flexibility rather than quantitative approach. This will be done by studying the current situation of the organization, then collecting and analyzing data and proposing a PMO model through research and analysis then implementation.

➢ 1.5.1 Research tools:

- **Literature review**: examining primary and secondary sources and research globally and locally to identify the concept of the project management office and the benefits it provides, and all that is related to its types, steps to implement it, and the factors of its decline or failure.
- **Data collection tools**: Observation from personal experience in addition to data collection through interviews with different employees in the Establishment of housing, including managers, project managers, engineers as much as possible, then analyzing this data and proposing appropriate solutions.
- The researcher chooses to make interviews to collect the data which needed, where interviews provide deeper understanding of the work environment. It's

a valuable and flexible tool, gives rich data, it provides the interviewer's personal perspective, human connection with them, and new insights.

1.6 Previous studies:

❖ *The PMO as an innovative tool for the Public Electricity Organization by Michaela Symeonidi, A master thesis Presented for the degree of master of science of project management ,2010:*

This research is about PMO establishment in electricity institution of Greece which is a large organization, due to the declining profits and inability to carry out and adequately control many projects in parallel. The researcher believed that the most appropriate solution for the Public Electricity Organization is the establishment of a PMO. the data has been collected, analyzed, the problems of the organization were identified and the most appropriate PMO was determined. Its mission, objectives, its responsibilities and location were defined. He outlined the critical success factors and the work breakdown structure of the project.

The structure for proposed PMO as it illustrated below:
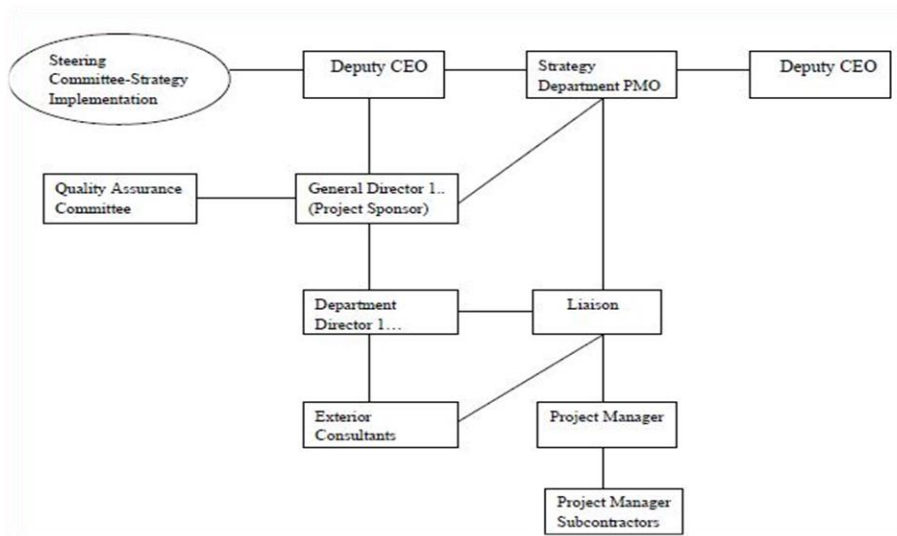
Figure 1:Proposed PMO structure in Public Electricity Organization by Michaela Symeonidi.

❖ *An investigation into the efficiency & effectiveness of project management offices (PMOs), thesis by Nuhaah Benjamine, Supervisor: Prof Derek Smith:*

The purpose of this study is a deeper understanding of the value of the PMO in the public sector and its contribution in terms of efficiency and effectiveness factors. Understanding these factors can help managers to know where to focus their efforts to ensure the added value of new services and products in the public sector. The study indicated that most PMOs in public sectors (77%) were found to be organized as virtual PMOs with varying levels of capacity and authority. The results of the survey found that most PMOs focus in terms of efficiency on productivity (60%), planning (20%) and profits (20%). In terms of effectiveness, the focus was mainly on responsiveness (40%) and flexibility, adaptability and innovation (60%). The study concluded that project management maturity can be significantly improved by focusing on areas where PMOs were lacking, namely benchmarking, hiring outside consultants with PM knowledge and linking up with outside consultants. MOs in the public

sector should be focused on implementing processes that evaluate projects' results, benefits and outcomes. To have the full effectiveness of the PMO it needs to be better established and positioned. most PMOs currently are accidental PMOs, in which the PMO added function to an existing role. There is a need for a paradigm shift to take effect within all PMOs, both public and private sector organizations, to move away from just "reporting on" toward becoming more involved in "contributing". In this way PMOs move toward providing project solutions for business success. That establishes the validity and value contribution of the PMO.

❖ *Project Management Office: The process of creating a PMO concept Kalle Pietinen, Thesis for a Master's degree in the Program of Leadership and Service Design, 2019:*

This thesis is action research is a step-by step follow-up to the design and implement the concept of a project management office (PMO), clarifying major obstacles and pitfalls in this experience. Examines the case study company's experience in establishing its own PMO and the situation in the company before and after creating a PMO, the idea arose when the case company decided to implement new investments which require changes in processes, working methods and daily practices. In order to be assured of the capability of the new hardware receiving organization, a was quickly needed to support change management process. All this triggered an idea of PMO.

 The PMO implementation work conducted between April 2017 and March 2019 when full PMO concept was finalized with positive results.

the structure to PMO was created on three levels, providing full structure on global and site level with on-demand support on the main department level.

Global PMO covers all globally important projects, site PMO covers all locally important projects, the department PMO covers all departmental projects. Functional PMO organization structure as *Error! Reference source not found.* b elow:
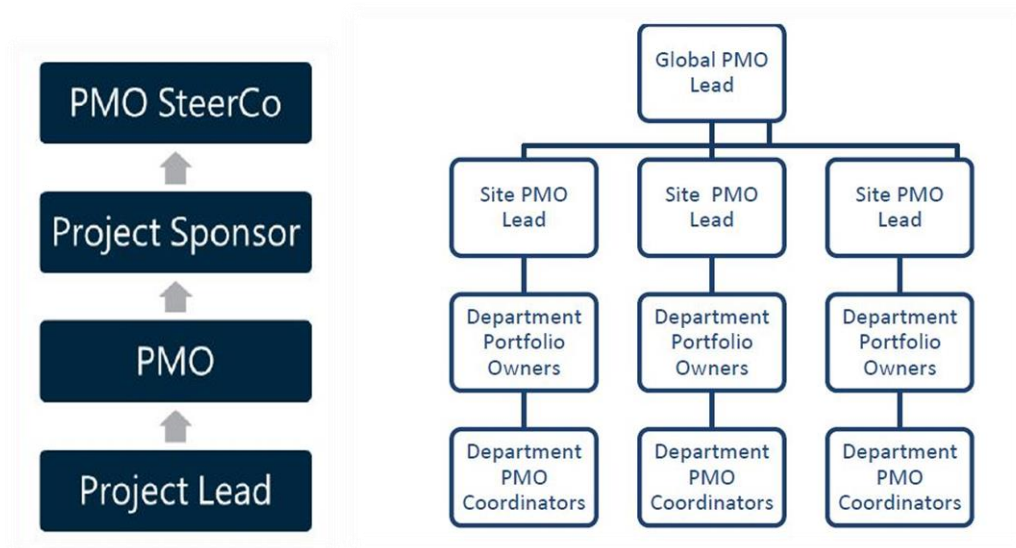
Figure 2: The PMO escalation structure   figure3: The PMO organization structure

❖ *Exploring the Impact of the Project Management Office on Project Performance, A Quantitative Study, by: Mohamad Sahyouni and Sebastian Andrén, Supervisor: Philippe Rouchy, Department of Industrial Management Blekinge Institute of Technology, 2019:*

This study set out to explore whether or not the establishment of a PMO has any impact on an organizations project performance. This was of interest as many organizations adopt PMO's in order to enhance project performance, yet no research is found that empirically proves the existence of such a link.

The findings of this study lead us to believe that the establishment of a PMO and the implementation of a certain set of its services and function will indeed lead to enhanced project performance. However, the findings also show that not all of the services offered and function performed by the PMO will lead to enhanced project performance. This study leads to the belief that while the impact of the PMO's on performance could be seen on the project level, this impact is small and not as compelling as that seen on the organizational level. The study clearly indicates to project-based organizations that are looking to establish a PMO or that already have a PMO in operation that while the PMO will indeed have some impact on project performance, the evaluation of the PMO should not in any way be limited to its ability to impact project performance. Organizations should rather be aware of the level of impact expected when judging whether or not a PMO is suitable for them. Second, the results of this study offer a guideline to managers as to what services and functions of the PMO to adopt if the company was only looking for services and functions that have an impact on project performance.

❖ *What are functions of the project management office (PMO) in the Irish public sector, their level of maturity, and how do they contribute to organizational level? By Reon Ferreira, A research paper submitted in partial fulfilment of the requirements for the Master of MBA,2019:*

This research has shown that the types of PMOs in the Irish public sector, and the functions, including level of development, vary widely. This is consistent with the findings of Hobbs and Aubry (2007), who suggested that the "structures," "roles," and "perceived value" of PMOs differ from organization to organization.

The Irish public sector PMO was involved in strategic, tactical and operational activities simultaneously. The value of these roles ranged from simple to very complex, providing different levels of perceived duration of organizational benefits. The research found that within Irish public sector bodies 40% of PMOs are rated as having a basic maturity level, 40% a medium maturity level, and 20% an advanced maturity level. Which means the functions/services offered are not yet fully optimized, which indicates that there is no There are still opportunities to contribute significantly to organizational value (through improving PMO maturity levels), there is a need for organizational involvement, securing appropriate resources (skilled/experienced), and necessary funding.

40% of Irish public sector PMOs identified as an enterprise-PMO, with an organizational level scope, 20% identified as a departmental-PMO with a scope particularly related to the delivery of departmental projects, programs, and portfolios. 40% of the PMOs identified as a project-program PMO with a scope focused on delivering project/program specific deliverables. 70% of the PMOs

suggested that it has been up-and-running for less than 3 years. This perhaps suggests that the PMO is a fairly new function within the public sector. Also, considering the average low level of maturity.

➤ ## 1.6.1 Researches within the Arab world:

❖ *Implementation of PMO in GCC, by: Sundis Al Rawi Supervised By: Dr. Paul Gardiner, Master in Project Management Program in the British University in Dubai,2010:*

This research has examined the relationship between traditional Western project management theories and the present business environment found in the industrialized Middle East.

Its main findings: the important factors which affect the implementation of successful PMO in Middle East are: (Communication, Planning, Project management training, portfolio management, quality). Also, it was found those factors are affected by other factors across the three phases of PMO (awareness, implementation and maturity). Accordingly, recommendation has been mentioned to enhance those factors through improve the interdependent factors which affect the main factors of implementing a successful PMO. This work will require passion, commitment and continual championship for "the cause".

❖ *Evaluation of the role and efficiency of PMO consulting offices in managing the process of implementing engineering construction projects. A study presented for obtaining a doctorate degree at the Faculty of Management and Economics at the Arab Academy in Denmark.by Student: Essam Mohamed Hussein Ismail, Supervision / Dr. Salwa Al-Samarrai, 2014:*

In this study, the researcher evaluated the role of consulting offices (PMOs) in managing the implementation of construction engineering projects in the Kingdom of Saudi Arabia. The study mainly aimed to define the local and international standards and requirements in the field of engineering monitoring contractor s work. The researcher also shed light on the most important issues facing the PMO offices in KSA.

❖ *A Framework to Establish a Project Management Office, by: Hanadi Salameh, School of Economics and Business Administration, European Journal of Business and Management. (Paper) 2014:*

This research identifies the steps necessary to establish a PMO. And also focus on best practices needed to ensure more effective PMO. It proposed a framework that provides a detailed guide on how to establish a PMO with all required functions, processes and plans. This framework suggests that the establishment process of PMO should be taken as a project, by following the project life cycle of plan, implementation, monitoring, reporting and enhancement. The KPI for the PMO also depends on the type and the continuous improvement of the PMO process should be reported in a weekly report to the top management. Continuous executive support must be ensured, as well as collaboration across the various departments of the organization which will underpin success. In addition, the processes and methods for measuring, reporting, and tweaking while undergoing the course of PMO implementation is vital.

❖ *How to establish a Project Management Office (PMO), By Rania Al-Maghraby, PM World Today – May 2011:*

This paper outlines the importance of a PMO in an organization, its intended role, how to establish a PMO in a certain organization, the components necessary to exist in that PMO, along with its organizational structure, and roles and responsibilities of PMO staff. It's intended to be a practical, implementation-oriented presentation of the subject.

➤ 1.6.2 Researches within Syria:

❖ *Proposed Framework for Professional Management to Syrian Construction Projects. Dr. Rana Maya, Tishreen University Journal for Research and Scientific Studies,2020:(Arabic text)*

The particular significance of this article is that it proposes a framework for the professional management of construction projects in Syria. This study analyzes the most important factors affecting the implementation of construction projects in Syria. It also identifies two main factors in managing effective project implementation, which are planning and control systems, and achieving project objectives.

The study sheds light on the failure of performance appraisal in the implementation of construction projects as a result of deficiencies in planning and control systems, deficiencies in achieving project objectives, and a decrease in human resource skills. Based on this, a framework was proposed for the professional management of construction projects within the Ministry of Local Administration as a case study that included three strategic, structural

and organizational objectives for a professional project management office (PMO) and delineated its tasks to avoid deficiencies in the implementation of projects in Syria, through three levels, First level is in the Ministry of Local Administration in coordination with counterpart offices in the relevant ministries, the second is in the governorates, and the third is in the municipalities, according to the figure below:
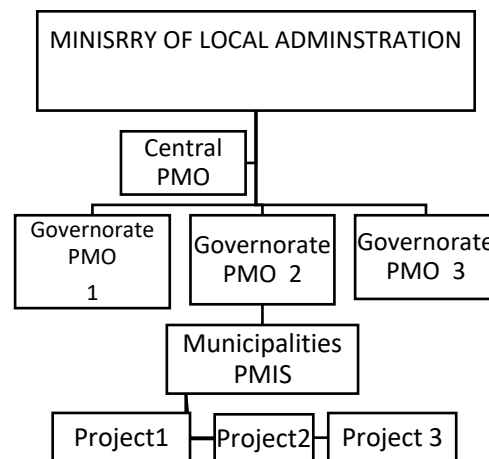
Figure 4: The appropriate system for project management in Syria, Source: Rana Maya

❖ *Designing a database for the project management office in a contracting company according to the international methodology, Eng. Muhammad Ali Mustafa Daas, supervised by Dr. Muhammad Shaaban, a study prepared for a master's degree in civil engineering / Department of Engineering and Construction Management :(Arabic text)*

The aim of this research is to design a project management office database in contracting companies in the executive stage, which helps in managing a group

of projects together and following them up effectively, and helps supervisors, and project managers to obtain all information in real time through reports (bi-monthly - annual) to follow up the stages of project implementation during a specific time in a graphic manner according to the required administrative level.

❖ *The Impact of Creating the Technology Projects Management Office on Improving the Organization's Performance (An Analytical Study of the Case of Syriatel Company), Yasser Asad Nasr, Supervised by Dr. Iyad Zoukar, research for obtaining a master's degree in qualification and specialization in technology management:*

This study aims to demonstrate the impact of the establishment of the Technology Projects Management Office on improving the effectiveness and performance Projects and their impact on improving the effectiveness and performance of the organization through path and impact analysis based on community opinions Studying at Syriatel.

■ Previous studies showed many aspects related to the project management office talked about its importance and the value it provides. It also showed the spread of the project management office concept and its application in the world as well as in the Arab world. Some of these studies suggested the establishment of PMO to address the problems in the organizations s management, and others talked about PMOs that already existed in an organization, studied them, and suggested improvements for their work.

In Syria, there are still few or rare experiences on this subject, and previous studies did not address the stages and steps of establishing a PMO in detail.

This study proceeds from understanding the reality of the Public Establishment for Housing in Syria, and then proposes the establishment of a PMO in it, with detailed steps for implement PMO to address the problems it facing.

1.7 Business Plan and Summary:

- This study comes to propose a PMO concept model for the case study company.

There are three phases of this study:

Phase 1	determine the objective and scope of the study and involves literature review to find how to establish and operate an effective Project Management Office and how to prepare the right conditions for that.
Phase 2	involves the studies of current practice of project management in the public establishment of housing through interviews with the directors and project managers and study the company's situation, its management methods for various projects, the experience of its employees, and the management methods that used.
Phase 3	Gather, classify, analyze the collected data, and develop an appropriate PMO model for the case study.

2. Chapter Tow: Literature review

2.1 Definition of project management office (PMO):

- It is difficult to find a unified definition for PMO due to the different work needs and functions assigned to them in different organizations. However, in general, PMO is a centralized organizational unit that provides support and guidance for project management activities across an organization. It may be responsible for developing and enforcing project management standards, providing training and coaching to project managers, facilitating communication and collaboration among project teams, monitoring project performance and risks, and ensuring alignment with strategic goals. According to a study by PMI (Project Management Institute) PMO is defined as" a management structure that standardizes project related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques, The responsibilities of a PMO can range from providing project management support functions to the direct management of one or more projects (PMI, 2013).

- (Larson, Gray, & Desai, 2011) and (Curlee, 2008) described a PMO as a central unit within an organization or department that oversees and improves the management of projects. Meanwhile, Dow and Taylor (2010) stated that the PMO is a formal organizational structure that underpins all projects and project methodologies in an organization.

- PMO is mainly used as a focal point to bridge the gap in the relationship between projects currently being implemented with senior management

(Taylor, 2011); (Al-Maghraby, 2011); (Andrews, 2014). PMO strives to benefit of replication in project implementation and is the center of documentation, guidance, and metrics in project management and implementing best practices.

- A (PMO) is referred to by several terms that vary depending on its position in the organization, its roles and maturity level. called a "project office" for low maturity levels, a project management office for medium maturity level, and a program/portfolio management office or enterprise project office for high maturity PMOs. however, then the worldwide known name of this business unit is ***Project Management Office.***

- The PMO is either an organic part of the main management structure of an organization or a partner in the organization, which is outsourced.

- The primary objective of the PMO is to ensure adherence to policies, standards and methodologies for project management. Where PMOs are source of guidance, documentation, and metrics for the organization's project practices. The office participates in the processes and tasks related to projects, monitoring project activities. The PMO reports to senior management about project activities, problems and requirements, and can be a strategic tool for making decisions that align with business objectives (Milin, Moraca, Jašarevic, & Hadzistevic, 2012).

- Establishing a PMO contributes to more effective project management by enabling the collection of knowledge from previous projects, both successful and failed, and learning from mistakes or justifying the use of successful approaches (Milin, Moraca, Jašarevic, & Hadzistevic, 2012).

2.2 Importance of PMO:

- Project Management Offices (PMOs) were not very common at the end of the 20th century, but they have become more popular in the current century and organizations have noticed a great need for them (Dai & Wells, 2004).

- PM solutions (2022) released its "State of the PMO" report based on the participation of 227 organizations.it shows that the Percentage of organizations with a PMO are 71%.

  - ✓ Most mid-size and large organizations have a PMO.
  - ✓ PMOs are strategic – most (82%) report to a VP [1] or higher, half directly to the C-level [2].
  - ✓ PMO staffs are highly experienced (10 years) and almost half have PMPs. PMOs in over 40% of organizations have an enterprise/strategic service span.
  - ✓ The PMO's value has not been seriously questioned in most organizations (only 18%).

- [1] VP: Vice president

- [2] {C-*level executives hold the highest management positions in an organization and are typically at the head of their* particular area *or department}.*
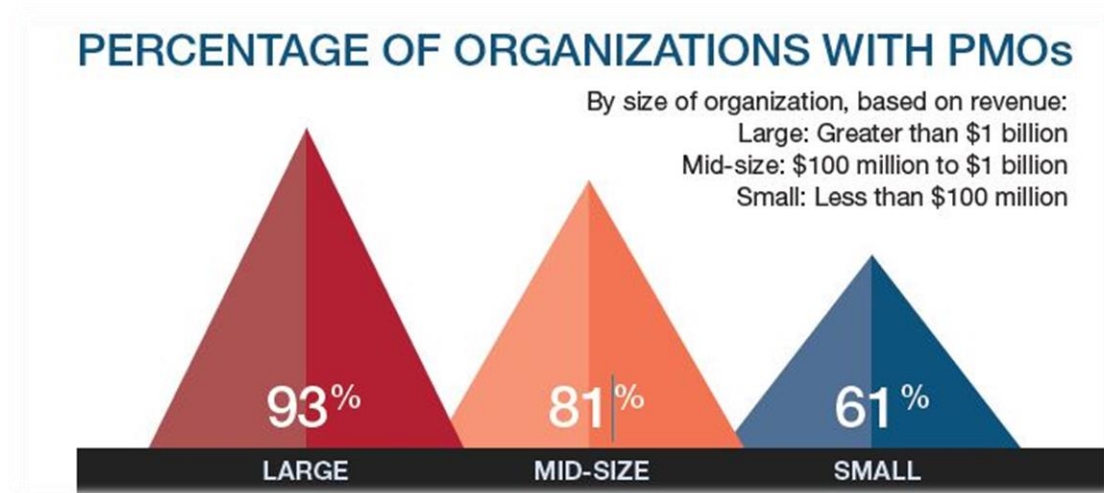
Figure 5: Percentage of companies with a PMO, Source: PM solutions, 2022, p. 3

- Typically, organizations begin to consider starting a PMO when they find the following symptoms:
  - ✓ project delivery delays.
  - ✓ cost overruns.
  - ✓ Poor quality.
  - ✓ Stakeholder dissatisfaction
  - ✓ Low quality reporting
  - ✓ Inaccurate project status tracking
  - ✓ Unpredictable cash flow,
  - ✓ Untraceable scope changes.
  - ✓ No risk management.
  - ✓ lack of internal coordination
  - ✓ slow response to project implementation issues,
  - ✓ Inefficient allocation of resources, etc.

  The establishment of a project management office (PMO) is one of the strategies that can be used to address such problems.

- (Desouza & Evaristo, 2006) describe the PMO as a knowledge manager suggesting that "a well-implemented PMO can solve the most challenging project management problems by capturing and transferring knowledge, maximizing the role of cross-functional teams, and ordering integrated technologies.", it provides ownership and accountability for key efforts. Furthermore, it can fully assess the impact and risks of change and provide projects with guidance on best practices and standards. PMO harnesses project management skills to improve performance, productivity, and quality assurance on complex projects. PMO can also increase an organization's level of maturity, project efficiency, and assist in Determine what influences project success (ESI International, 2013).

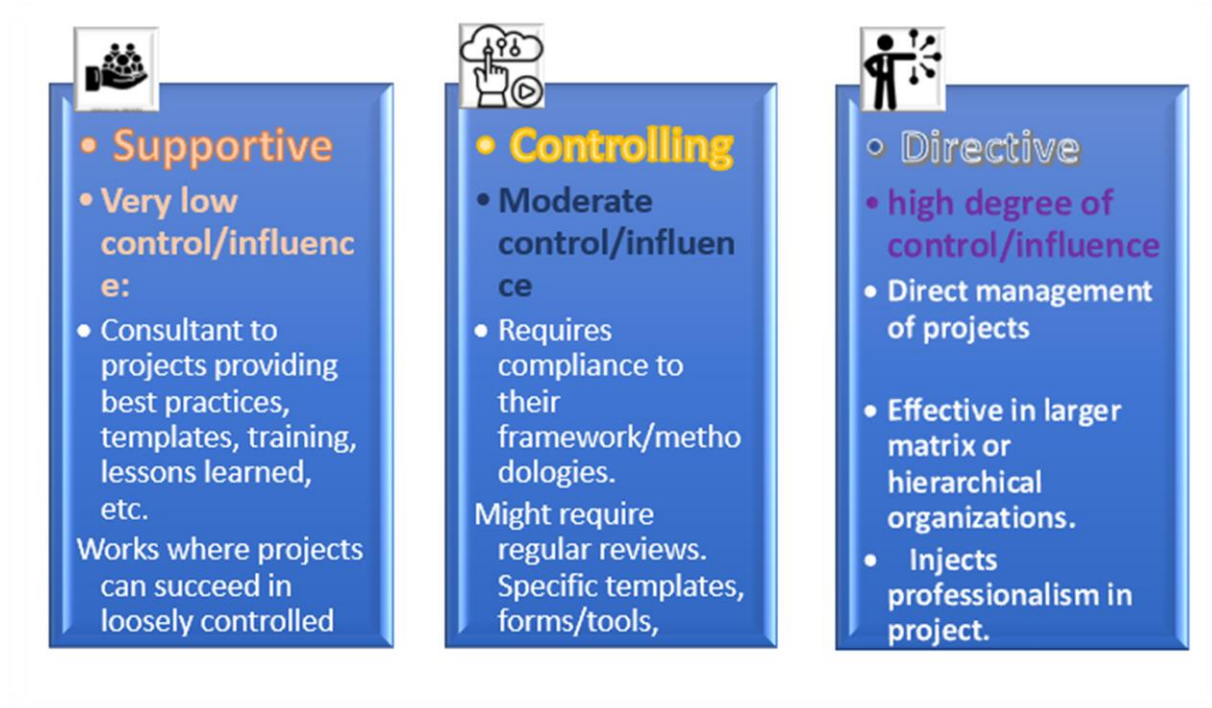- **According to PMI, some of the benefits PMO has in supporting managers:**

  - ✓ Manage common resources for all projects managed by the PMO.

  - ✓ Define and develop project management methodology, best practices and standards.

  - ✓ Guidance, direction, training and supervision.

  - ✓ Monitor compliance with project management standards, policies, procedures and templates through project audits.

  - ✓ Develop and manage project policies, procedures, templates, and other common documents (Organizational Process Assets).

  - ✓ Coordinating communications across projects (Project Management Institute, 2017a, p. 49).

2.3 PMO types:

- Although there are many types of PMOs and they differ in design, they all work with similar responsibilities and tasks (Andersen, Henriksen, & Aarseth, 2007).

- Authors classified PMOs in different ways, some as broad functional groups (Dai & Wells, 2004), (Hill G. , 2004), (Hobbs & Aubry, 2007) whereas others attributed its importance to the role it plays developing organizational project-management maturity (Hill G. , The complete project management office handbook, 2004)

- The PMO can take on various structures "each varying in degree and influence they have in organization" (PMI, 2013) (Hobbs & Aubry, 2007) found that there is great variability in the structure, roles, and perceived value of the PMO. This may be due to the diversity of projects and the jobs assigned to the PMO. Structuring a PMO in a standard way is actually difficult and experts agree that "there is no one-size-fits-all approach".

- The responsibilities of the PMO can range from providing project management support functions to actually being responsible for direct management of one or more projects" (PMI, 2013). so that managers are expected to implement the type of PMO that meets the organization"s need.

1) *Supportive PMOs*: which plays an advisory role to project managers by providing best practices, training and access to information and lessons learned from other projects. This type of PMO serves as a repository for the project. The degree of control achieved here by PMO is low.

2) ***Controlling PMOs***: providing support and asking compliance through several methods. Compliance may include adopting quality management frameworks or methodologies, using specific templates, formats and tools, or complying with governance. Here the degree of control achieved by the PMO is moderate.

3) ***Directives PMOs:*** take control of projects by managing them directly. The degree of control that PMO achieves here is high.

| • **Supportive**	• **Controlling**	○ **Directive**
• **Very low control/influence:**	• **Moderate control/influence**	• **high degree of control/influence**
• Consultant to projects providing best practices, templates, training, lessons learned, etc. Works where projects can succeed in loosely controlled	• Requires compliance to their framework/methodologies. Might require regular reviews. Specific templates, forms/tools,	• Direct management of projects. • Effective in larger matrix or hierarchical organizations. • Injects professionalism in project.

Figure 6: Types of PMO &varying degree of control.

2.4 PMO levels:

➢ 2.4.1 According to their position in the organization:

- 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), (Giraudo & Monaldi, 2015) categorized PMOs according to their position to: /Corporate, De-part mental or Individual/. If a PMO exists at higher levels, it may be a strategic project office, working to enable strategy that enhances organizational performance and change management capabilities.
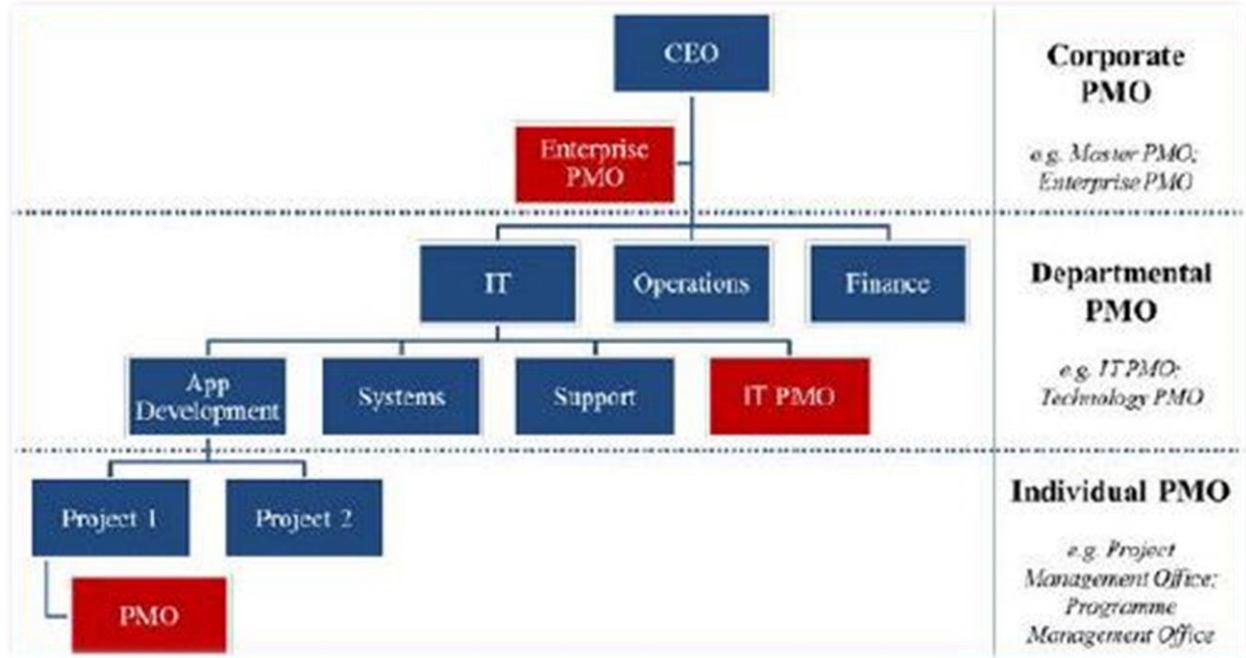
■ *Figure 7: PMO options model, Source: Giraldo and Monaldi,2015*.

➢ 2.4.2 According to their roles in the organization:

■ PMO evaluates from a consultative role (i.e., providing advice and support for project teams), to an enterprise-wide project office with an information-providing role that supports corporate decision-making, and finally to an administrative role (being responsible for strategic project initiatives). (Desouza & Evaristo, 2006) propose dividing PMO roles into strategic, tactical and operational levels, with each level performing different roles and functions accordingly.

- (Aubry, Müller, Hobbs, & Blomquist, 2010) identified three levels of PMO:

1) **Operational level**:

   PMO supports projects with professional project management principles and practices. ensuring that project evaluations are conducted, expert knowledge on project management, and consistently monitoring, customer satisfaction.

2) **The tactical level**:

   its role is integration between environment of multiple projects through coordination and sharing of resources, consistent quality of products and services generated by the projects, and knowledge sharing.

3) **The strategic level "enterprise":**

   where the project management office has the authority to prioritize projects aligned with the company's objectives and strategies, and effective knowledge management.

- PMOs operate at any one level or may exist at all three levels concurrently, depending on their mission, scope, and approach. a PMO level reflects the level of project complexity within the organization. However, (Crawford, 2011) argues that all organizations should implement enterprise level, or strategic PMO because "the value-adding" mechanisms of the PMO at this level really reach the desired status, and that any PMO below the enterprise or departmental level produce less value.
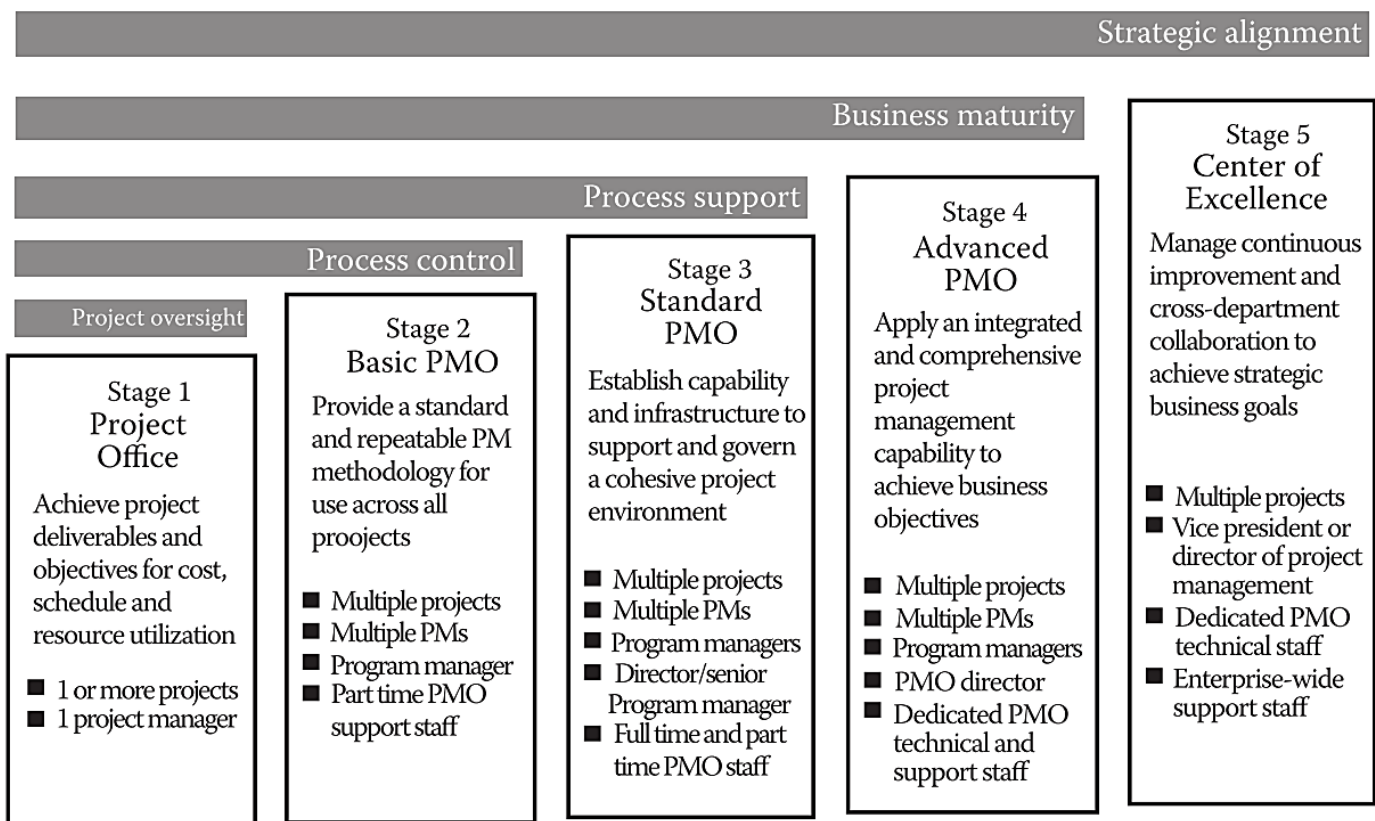
➢ 2.4.3 According to their development or "level of maturity":

- (Hill G. M., 2013) suggested five stages of development of a PMO as illustrated in Figure 8.

(Brown, 2012) also categorizes them as levels of maturity for PMO.

These phases show the progress that the PMO gains over time and experience. The author also claims that not all organizations need stage 5 PMO. Most organizations achieve their project management goals through stage 3 PMO. It depends on business strategies and goals. However, in order to implement any PMO phase, the company must first ensure that the minimum phases are achieved.

Strategic alignment

Business maturity

Process support

Process control

Project oversight

**Stage 1
Project Office**

Achieve project deliverables and objectives for cost, schedule and resource utilization

- 1 or more projects
- 1 project manager

**Stage 2
Basic PMO**

Provide a standard and repeatable PM methodology for use across all proojects

- Multiple projects
- Multiple PMs
- Program manager
- Part time PMO support staff

**Stage 3
Standard PMO**

Establish capability and infrastructure to support and govern a cohesive project environment

- Multiple projects
- Multiple PMs
- Program managers
- Director/senior Program manager
- Full time and part time PMO staff

**Stage 4
Advanced PMO**

Apply an integrated and comprehensive project management capability to achieve business objectives

- Multiple projects
- Multiple PMs
- Program managers
- PMO director
- Dedicated PMO technical and support staff

**Stage 5
Center of Excellence**

Manage continuous improvement and cross-department collaboration to achieve strategic business goals

- Multiple projects
- Vice president or director of project management
- Dedicated PMO technical staff
- Enterprise-wide support staff

Figure 8: Overview of PMO capabilities across the PMO competency continuum (Hill, 2013)

Stage 1: The Project Office

A project office is established to be responsible for the successful completion of one or more projects. It provides the capacity for professionalism and excellence through the application of the most accepted project management principles and practices in every project activity (Hill G. , 2004).

Stage 2: The Basic PMO

The stage 2 or Basic PMO is the first PMO level that deals with a wide range of project monitoring and control. It provides the ability to a powerful control and management of multiple projects relative to the performance of multiple project managers (Hill G. , 2004).

Stage 3: The Standard PMO

The Stage 3 PMO is an essential part of the continuity of the PMO's expertise, providing a complete and comprehensive PMO capability. besides working on project management oversight and control, it also supports the performance of individuals and projects in a project management environment. Its scope ranges from managing multiple projects to multiple project managers and may include overseeing or otherwise targeting one or more program managers (Hill G. , 2004).

Stage 4: The Advanced PMO

The Stage 4 PMO evolves from the existing complete PMO ability and is therefore the standard (stage 3) PMO's "big brother". Its focus is on integrating business interests and goals into a project management environment. This means adopting common policies that can be applied to both project management processes and business processes. To use the term familiar to many professional project

managers, an advanced PMO helps creating a "predicted" business environment (Hill G. , 2004).

Stage 5: The Center of Excellence

The Center of Excellence is a separate business unit within the organization and has responsibility for company-wide project management operations. The PMO functionality assigned to the Center of Excellence must focus on strategic business benefits throughout the organization. While lower-level PMO organizations can also be assigned such tasks, it is most evident at this is the highest level of PMO (Hill G. , 2004).

- Many PMO organizations are set up for a rather narrow purpose, but their scope grows over the years without expressly announcing a new mission. (Pietinen, 2019)

- Having a PMO that is not functioning at the proper level is almost worse that not having one at all - the wrong model can impede the PMO's reputation and credibility. So, understanding which level is right for the organization is crucial.

- Regardless of which level or type of project office, almost all PMOs perform similar functions to one degree or another – often just at different levels. (Hill G. , 2004) There are seven primary components to any PMO, which grow in capability and complexity as the PMO evolves and assumes more strategic responsibilities. The categories include:

  1. Management Reporting.

  2. Process, Standards, and Methodologies.

  3. Training and Development.

  4. Project Support.

5. Portfolio and Resource Management.

6. Personnel Management.

7. Quality Management.

- **Relationship between project managers with the PMO can be:**
  - ✓ Project managers report directly to the PMO.
  - ✓ Project managers report to their functional units and PMO plays a supportive and directive role (Al-Maghraby, 2011).

- There can be a central PMO and other sub-PMOs reporting to it, forming a hierarchy of the PMO itself.

- According to the *2013 PMI Pulse of the Profession* survey, 33% of PMOs report to a vice president or department manager, 19% report to the CEO, and 12% report to other senior executives (PMI, 2013).

- Center of Excellence PMOs often report to a higher level in the organizational structure, such as the board of directors or chief executive officer, the president or vice president, while project or project support PMOs report to a functional manager such as the chief information officer, or department manager or vice president.

2.5 PMO roles and functions:

- PMO plays different roles in different organizations. The particular role of the PMO depends on the organizational requirements of such an entity. (Duggal, 2007) mentioned that the PMO works at different levels in organizations. Accordingly, the PMO can be for a specific project or program, or for some

departments such as IT, it can be at an organizational level, while in larger sized organizations, there can be multiple PMOs at several different levels within the organization (Duggal, 2007) Depending on its role, its organizational position, and the mission assigned to the PMO, it performs various functions, ranging from providing a standard project management methodology to be followed in all projects of the organization and coordinating resources across projects to achieve strategic business objectives (Hill G. , 2004).

- The scope of the PMO may also extend further, to leadership and accomplishments that align with business strategy (Taylor, 2011).

- The role of the "PMO" appears in providing proper methods, tools, and techniques in project management.

- The differences in the functions and roles of the PMO gave it wide flexibility in its organizational responsibilities, while many studies covered the roles and functions of a PMO, Perhaps the most well-known research on PMO functions is the empirical research conducted by (Hobbs & Aubry, 2007) ,they identified about 27 functions and roles that PMOs can perform, they grouped the functions in 5 main groups:

1) Monitoring and Controlling Project Performance.

2) Development of Project Management Competencies and methodologies.

3) Multi-Project Management.

4) Strategic Management.

5) Organizational Learning.

- Not all specified functions can be implemented in all PMOs, each of them has its own performance, However, a survey by Hobbs and Aubrey reveals that About 21 of the 27 roles are important to at least 40% of those surveyed Project

management office. Where possible PMO roles and careers are arranged in order of importance for all PMO activities, as shown in Table 1.

Table 1: The possible roles and functions of the PMO, (Source: Hobbs & Aubry, 2007).

1. Reporting to upper management about the project status.	*83%*
2. Developing and implementing an appropriate standard methodology.	*78%*
3. Controlling and monitoring the process of the project performance.	*65%*
4. Developing standard of staff competency and vocational training.	*65%*
5. Taking care of implementing and operating information commons.	*60%*
6. Providing consultancy and advice to senior managers.	*60%*
7. Coordination between simultaneous and multiple projects.	*59%*
8. Developing and enhancing a project scoreboard.	*58%*
9. Promoting culture of project management within the organization	*55%*
10. Self-monitoring and controlling of the PMO performance	*50%*
11. Participating and involving in organization's strategic planning	*49%*
12. Providing mentor for the project managers.	*49%*
13. Managing multiple portfolios.	*49%*
14. Participating in the selection process of new projects with priority.	*48%*
15. Managing the project documentation archive.	*48%*
16. Managing single or multiple projects.	*48%*
17. Project auditing.	*45%*
18. Managing customer interfaces.	*45%*
19. Providing standardized set of tools.	*42%*
20. Execution of special tasks as per request of the project managers.	*42%*
21. Allocation of organization's resources between the various projects.	*40%*
22. Post-project investigation.	*38%*
23. Implementing learning and training databases.	*34%*
24. Management of risk databases.	*29%*

25. Benefit management.	*28%*
26. Networking and environmental scanning.	*25%*
27. Recruitment, evaluation of the project managers' performance.	*22%*

- (Hill G. , 2008) also articulated them in a very detailed way covering every relevant function, as shown in the Figure 9 below:
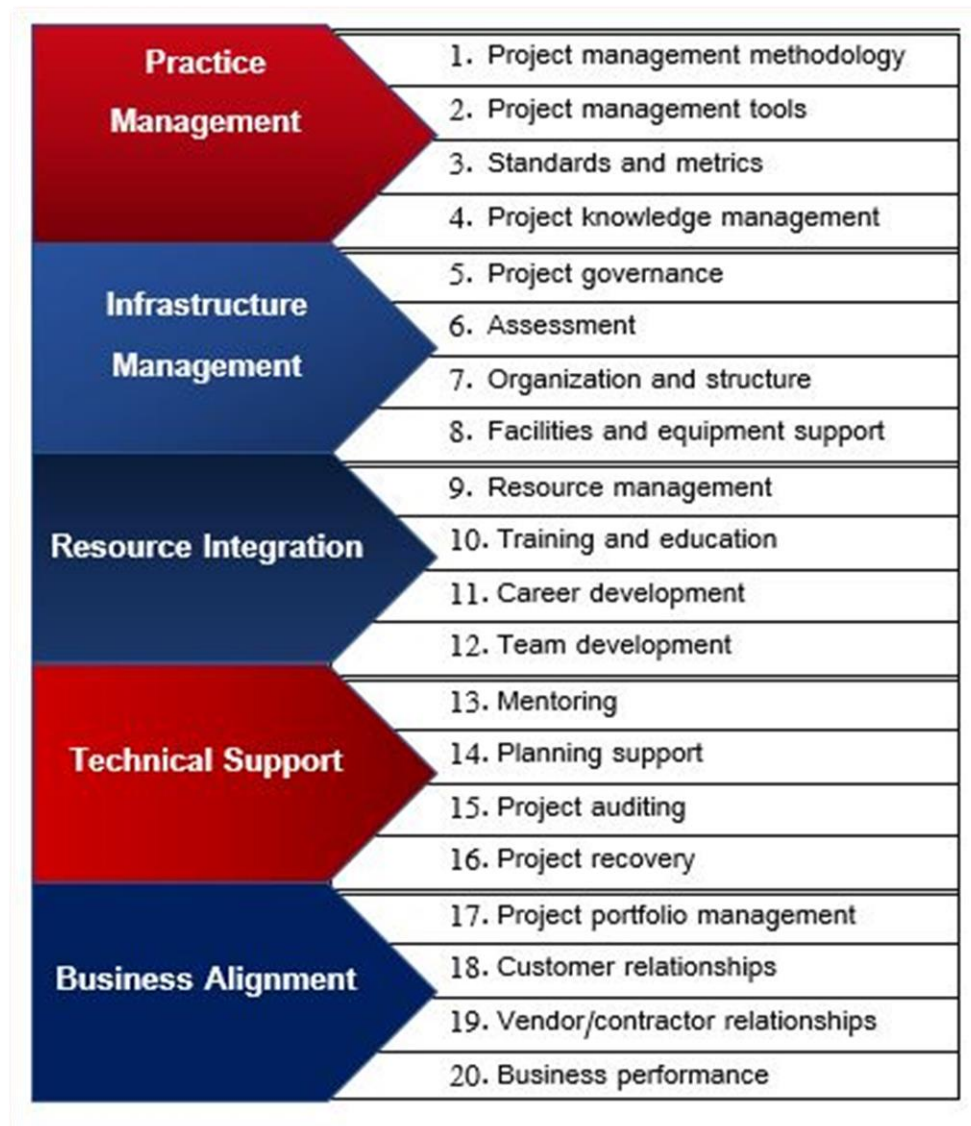
Figure 9: Roles and Responsibilities of the PMO, adapted (Hill 2008)

He identified 20 different functions performed by mature PMO. They are grouped under five groups:

1. Practice management.

2. infrastructure management.

3. resource integration.

4. technical support.

5. business alignment.

2.6 Project management methodologies:

- The methodology includes processes, procedures, best practices, standards, policies, forms and all documents used to conduct administrative and technological activities. Since the methodology is the cornerstone of project management, it must also be in line with new technologies and methods to ensure continuous improvement (Łukasiński, 2011).

- According to a KPMG study of 252 organizations, it shows that technology is not the most important factor in project success. The inefficiency of project management constitutes of project failures 32%,

  Poor communication constitutes 20%. Unfamiliarity with the scope and complexities of the project constitutes %17. accordingly, 69% from

  Project failure due to inadequate implementation of project management methodologies.

- The processes, models, training and everything in the methodology are a product of the PMO. The methodology should be well detailed, but not so much

that it discourages creativity. The PMO should ensure that the methodology is implemented, as well as ensure its development and maintenance.

- Through the PMO, an accepted base of project management principles is established, often according to global standard methodologies.

> **The methodologies used in project management are:**

- ✓ **BS 6079** - British Guidelines for Project Management.
- ✓ **PRINCE2** - A tool used to successfully manage projects.
- ✓ **PMBOK** - PMI book.
- ✓ **ISO 10006** - International Guidelines for Quality Management in Project Management.

- Knowing that it cannot be said that there is a specific methodology in project management that can meet all the needs of the organization. Each organization has its own specificity and different needs (Pharro & Bentley 2007 as cited by (Hindi, 2013).

2.7 PMO Value:

- The main purpose of a PMO, in essence, is to help a company to develop and maintain a competitive advantage by providing the right decision-making mechanisms, structure, processes, and control. All of these add value. The most important thing, however, is the value that a PMO creates for the parent organization (Hobbs & Aubry, 2007).

- Proving the value of PMO and its benefits to the organization is a challenge to it, as there are many who question its value and consider that the Project Management Office (PMO) is an increase in the overheads of the organizations (Duggal, 2007).

- In addition to the fact that the value of PMO is not tangible and it is difficult to evaluate the functions of the PMO through Fixed numbers and measures Hill (2008) identified this problem and argued that evaluating the value of the PMO is one of its permanent routine functions by identifying some indicators and preparing reports and submitting them to the decision makers periodically (Gagan (2007) as cited in (Hindi, 2013) explained several value drivers for PMO as It is shown in Figure below:
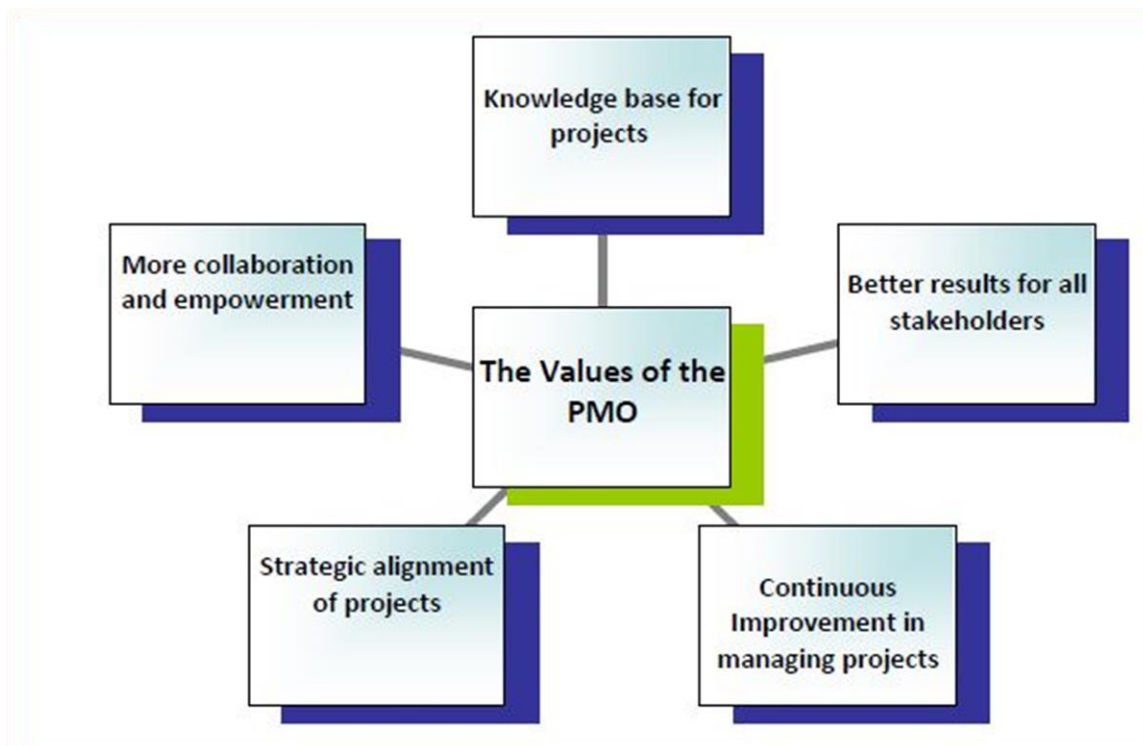
Figure 10: The values of PMO

- *PM Solutions (2022)* shows the PMO value delivered in the following areas:
  - ✓ Improvement in meeting agreed-upon quality of delivery 65%.
  - ✓ Improvement in aligning projects with business objectives 64%.
  - ✓ Improvement in the number of successful projects 62%.
  - ✓ Improvement in the number of projects delivered on budget 61%.
  - ✓ Improvement in customer satisfaction 59%.
  - ✓ Improvement in the number of projects delivered on time 59%.

- According to (Levatec, 2007) the value of PMO is created through:
  1. Formulation and maturity of policies and procedures controlling project operations within the organization.
  2. carry out activities associated with knowledge acquisition and dissemination, provision of training as well as project knowledge bases and other related knowledge work)"
  3. assist in the implementation or direct management of projects and provide "Expert Guidance" on project management practices and project delivery.
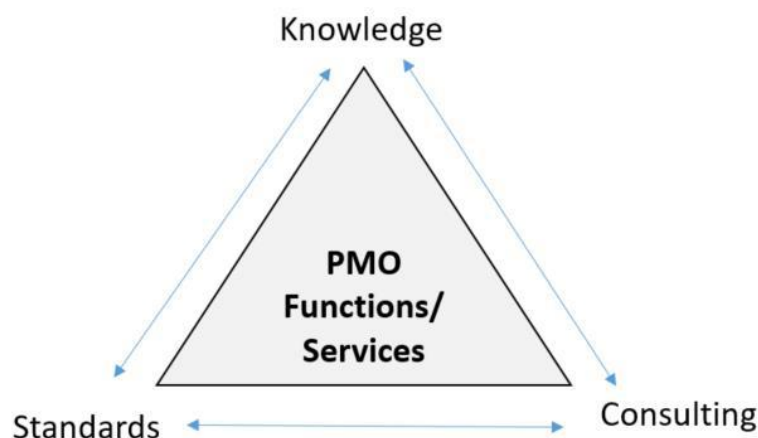
Figure 11: Core Areas of PMO Value, (Levatec, 2007)

- It is important to know that setting up a PMO does not have to be seen as a short-term strategy or one that necessarily reduces operating costs immediately; As its benefits increase and become clear over time, and this is what many organizations do not understand in their respective PMO initiatives.

- Figure 12 explains the evolution of the Project Management Office (PMO) activities, reaching a strategic level in line with the company's goals. The Project Management Office (PMO) grows in value as it is perceived by the top management, becoming an asset worth keeping.
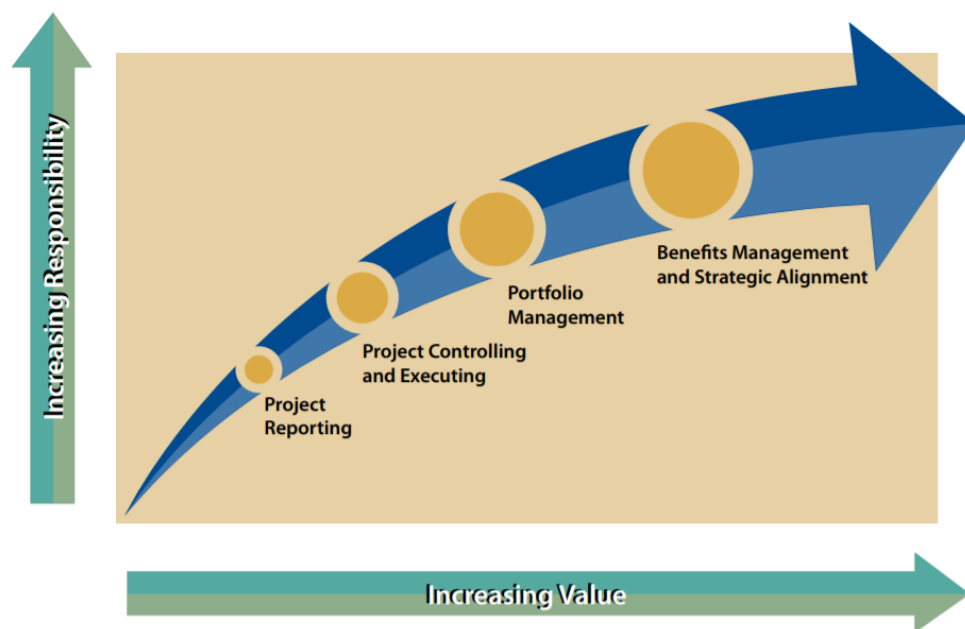
Figure 12: Relation between PMO Value and Responsibilities (Ward, 2010)

3. Chapter Three: PMO implementation

3.1 PMO" s state in middle east:

▪ From 2000 to 2005, PMOs in the Middle East were only present in large companies. From 2005, PMO began to spread to local organizations, but was limited to the construction, IT or telecommunications sectors. In the last years the Middle East realized the importance of the PMO for all sectors, private, public, or government, and even non-profit organizations. However, there are still differences in understanding the concept of the PMO, its capabilities, and what it must do for a large-scale organization, and the evolution of its maturity levels within the organization.
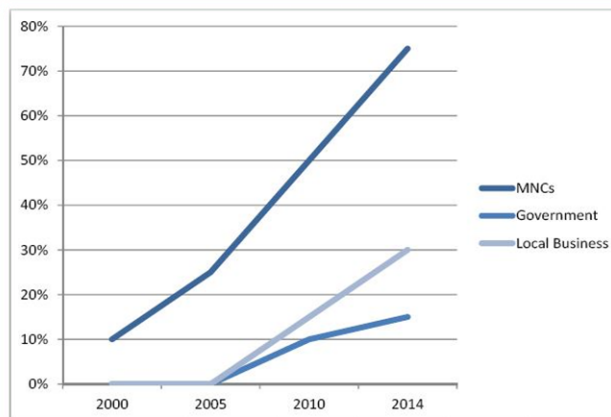
Figure 13: Noted growth in awareness of the significance in the Middle east,

Source: Aziz, 2014.
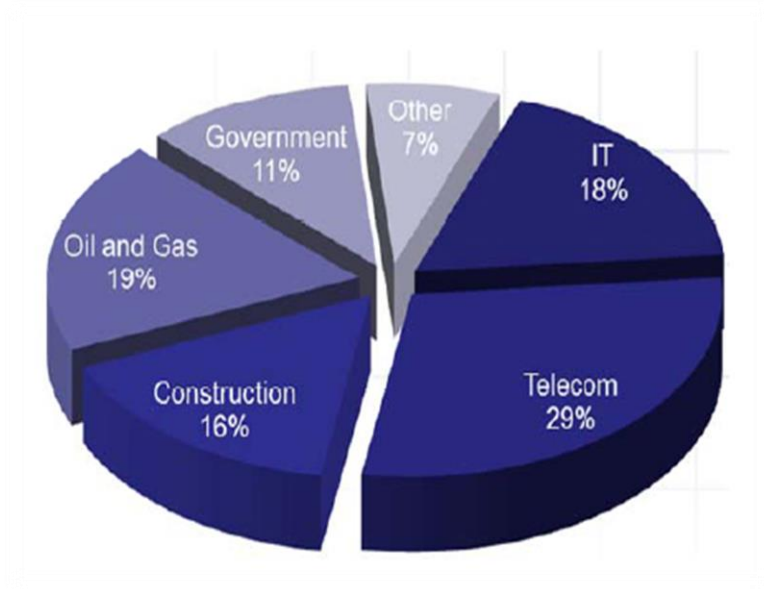
Figure 14: adopters of PMO by sector in of the PMO in the Source: Aziz, 2014.

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- By looking at the research related to the Project Management Office in the Arab countries and the articles published on the Internet, we quickly address the situation in some countries, there is a growing interest in PMOs, especially in KSA, UAE, and Qatar.

- Qatar has implemented successful large projects led by the Project Management Office (PMO) due to the large volume of construction activities it carried out prior to the 2022 FIFA World Cup and based on the country's National Vision 2030.

- Saudi Arabia, too, has a large business, and recognizes the role that the Program Management Office and PMO (Program Management Office) will play in its stated goal of developing a culture of managing mega programs.

- The researcher did not have much information and official reports showing the percentage of companies that have PMO, except in KSA, Bakkah* [3] has launched a PMO survey for those who work in PMOs in the Kingdom of Saudi Arabia (*State of PMO in Saudi Arabia 2021*). Here are some of the results it explains through the Figure 15, Figure 16,Figure 17,

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- Figure 18, Figure 19 below:
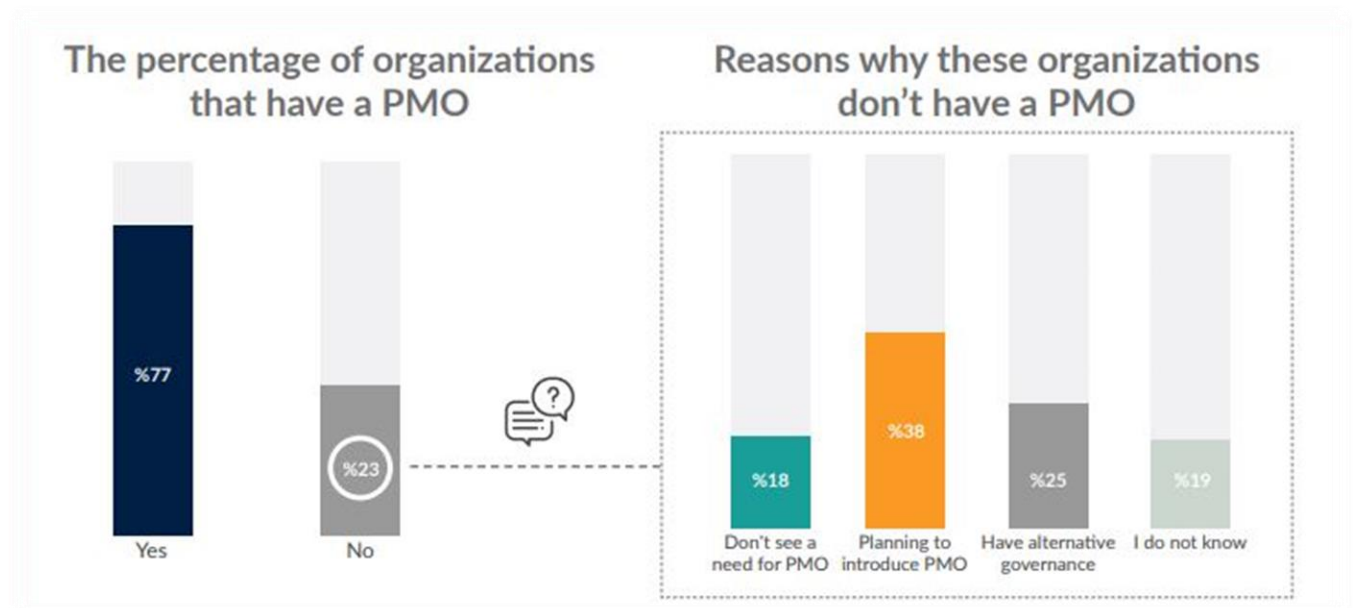
Figure 15: State of PMO in Saudi Arabia 2021, source: Bakkah, p.8

- [3] *https://bakkah.net.sa/public/upload/pdf/2021-10-18-11-58-00-en_pdf-pmo%20state%20in%20ksa.pdf*

PMO types that organizations have

Directive	%23
Controlling	%41
Supportive	%36
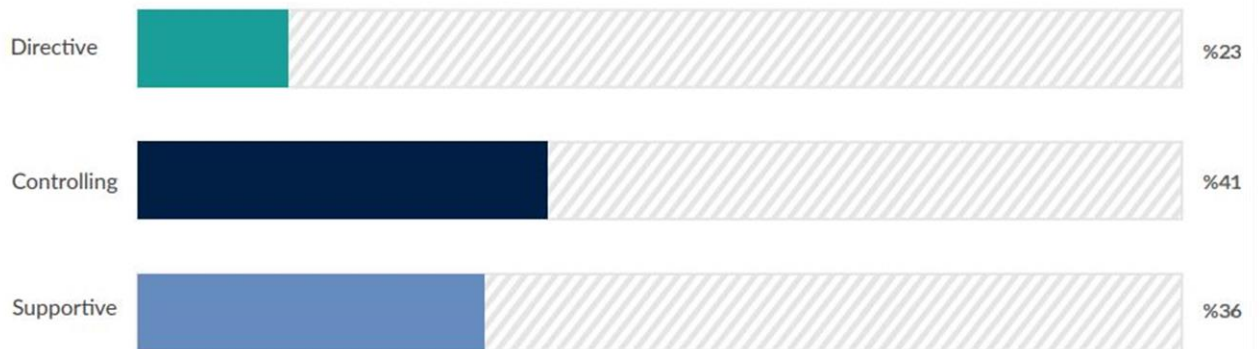
Figure 16: State of PMO in Saudi Arabia 2021, source: Bakkah, p.8

PMOs that follow best practices

Yes %61

No %39

Types of best practice that it follows

Axelos	%5
PMI	%60
ISO 21500	%3
Mix of Standards	%32
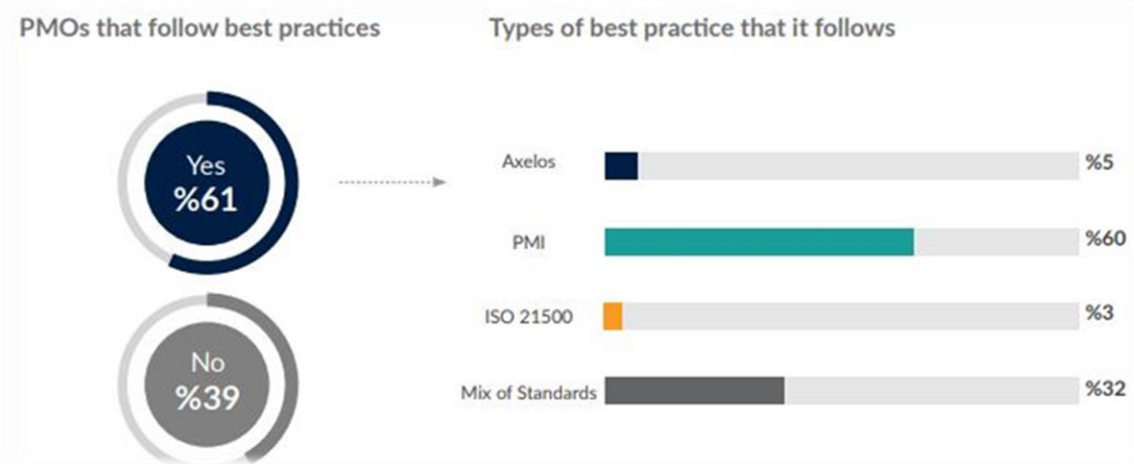
Figure 17: State of PMO in Saudi Arabia 2021

PMOs that have standard templates for project management activities

No %19

Yes %81

Figure 18:state of PMO in Suadi Arabia 2021

Reporting and dashboard tool that organizations use

Microsoft PowerBI — %21.00

Tableau — %4.00

Smartsheet — %5.00

Excel — %33.00

PowerPoint — %23.00

Other — %14.00

Figure 19: state of PMO in Saudia Arabia 2021

- In the latest global survey conducted by Price Waterhouse Coopers (PWC) and the Project Management Institute (PMI) on project management, in 2021, to determine what actions will help project managers and leaders in the Middle East push their organization towards success. The survey involved 534 respondents from the Middle East responsible for project management, including 209 executives at C-Suite level. Based on the results, the report made the following recommendations:

  ✓ Middle East organizations need to strengthen their C-Suite support for the PMO to help move it from leading project execution to driving corporate strategy.

  ✓ Tailor PMOs processes and methodologies to the various needs of the organization and stakeholders to maximize their value.

- ✓ The current talent shortage requires organizations to build winning project management capabilities to avoid the risk of project failure, or to outsource project management.
- ✓ PMOs must use results-based, engagement measurements across the organization to develop KPIs that will enable them to become "strategic project influencers" and change-makers
- ✓ The PMO needs to implement digital skills upgrading at a rapid pace, supported by a cultural shift towards a digital mindset within the PMO and C-Suite
- ✓ As hybrid work continues, project managers will need more support and training in managing remote teams.

3.2 PMO IN Syria:

- ▪ Syria is still lagging behind using modern methods of project management, as it has become necessary to think about the application of project management systems to meet the qualitative and quantitative needs in its projects, especially in the stage of reconstruction of Syria as the multiplicity of projects and their overlapping. processes and objectives, calls for the need for planning tools and quantitative monitoring of performance results (Maya, 2020).

  The performance evaluation for the implementation of construction projects, in the research conducted by (Maya, 2020) showed deficiencies in several

aspects, namely the general performance in achieving project objectives, low human resource skills, and deficiencies in planning and control systems.

- Project management office implementation experiences are still few in Syria and are limited to some private sector companies (such as Syriatel Telecom, which owns a technical PMO office (Nasser, 2021).

- As well as some banks such as the Arab Bank and some private contracting companies, and there are companies in the public sector that have begun to think seriously about the implementation of the project management office, such as the studies company.

3.3 PMO in project- based public organizations:

- The development of public projects is a great challenge. This requires "administrative" capacity and effort, a lot of time, and developing of planning, procurement, monitoring, and control methods. However, its effectiveness remains greater when used in projects developed by private initiatives (Esquierro et al. 2014, cited by (Al Ameri, 2016).

- Implementation of a PMO in construction is a project itself with a lot of effort in initiation, planning, implementation, monitoring, and control processes, it requires a change in the structure of the organization when it is first introduced. It is necessary to define its purpose, stakeholder goals and objectives, requirements, scope, budget, resources and schedule. Create early alliances and draw up a PMO charter and communication plan (Al Ameri, 2016).

- Specifically, the Establishment of PMOs for the public sector requires (Wirick, 2011) As stated in (Symeonidi, 2010):

- ✓ Clearly defined goals.

- ✓ Working outside the IT office.

- ✓ Backed by management.

- ✓ Delay the deployment of enterprise project management software until the organization has developed some project management maturity.

- ✓ Staffed with proven experts who know the agency's business functions.

- ✓ Show their capabilities early through quick wins and remarkable successes.

3.4 PMO between failure and success:

- ▪ The establishment of a project management office does not necessarily mean the success of the organization and access to the benefits it brings.

- ▪ implementing a PMO has a relatively high failure rate as organizations find it difficult to prove their added value either in reducing costs or in increasing project success (Salameh, 2014), (Spalek, 2012); (Raharjo, Purwandari, Satria, & Solichah, 2018).

- ▪ PMO failure is often caused by exceeding the time, money, or resources required to realize the benefits, or not realizing the benefits in a timely manner. The average PMO life span is roughly two years, when "PMOs are closed or re-created just as quickly as they are created. Another possible reason is the adoption of a ready-made model of PMO that may not be in line with the nature and needs of the organization, there is a wide variety of PMO types and stakeholders often delegate the PMO without giving clear instructions, which can hinder good implementation (Hobbs & Aubry, 2007); (Spalek, 2012),

(Aubry, Müller, Hobbs, & Blomquist, 2010) found that many organizations simply implement the existing PMO archetypes without an adequate perception of the role they need PMO to play. (Hill G. , 2008) agrees that it is very important to "prioritize and decide what functions that PMO will perform in order to select the optimal one for a particular company. Also, many falls into the trap of wanting to set up a highly mature PMO directly and force the entire organization to adapt, this is the path to failure (Aziz, 2014).

- In a survey published by CIO Magazine and the Project Management Institute (PMI®), 76% of CEOs who created a PMO within the three years prior reported that the longer the PMO, the higher the success rates in achieving project goals. The leadership and substantive expertise of the organization's PMO team quickly realizes the benefits of a PMO.

- Otherwise, the most important factors lead to successful PMOs as ranked by (Raharjo et al., 2018) as cited by (Dostal, 2020) are:

1. Support of senior management and stakeholders.
2. Clarity of vision, mission, roadmap, standard processes, role and responsibility of the PMO, as well as clarity of the organizational structure.
3. Efficient leadership of the organization that has PMO.

4. The Project Management Office team that has the experience, skills and ability to provide added value to the organization.

3.5 PMO challenges:

- It is natural that the implementation of the project management office faces many difficulties, due to the changes and new rules it, as there is a habit of working in a certain way and according to the current organization's policies. These challenges must be understood in order to reduce their impact during implementation.

- A PMO, by its very nature, can struggle to prove its value and overcome criticisms about overhead. Organizational resistance to change is also normal for beginnings, as it is one of the problems that any and all innovators face when trying to implement change.

- Establishing a PMO requires independence from project managers and sponsors, as well as responsiveness and understanding from the management level, and due to the centralization of decision-making, project managers usually highly value their independence in work and do not prefer to standardize methods or interfere with their work. In the case of a PMO implementation, mutiny can be expected, along with discipline problems. Often improvements and savings That which PMO brings is not financially feasible. So - because of the abolition of autonomy and creativity loss can occur, as well as aggressiveness and unity of project managers (Milin, Moraca, Jašarevic, & Hadzistevic, 2012).

(Singh, Keil, & Kasi, 2009) in their study used the Delphi method and gather 13 important challenges:

1. Rigid corporate culture and failure to manage organizational resistance to change.

2. Lack of experience project managers and PMO leadership.

3. Lack of appropriate change management strategy.

4. Failure to design a PMO around a company's specific needs.

5. Lack of stakeholder commitment to common methodology and tools for the PMO.

6. Poor definition and communication of PMO goals and purpose.

7. Lack of full support of the senior management and various stakeholders to the PMO.

8. Role, authority, and responsibility of the PMO is poorly defined or understood.

9. Lack of defined scope and size of PMO implementation.

10. Failure to align PMO implementation strategy to organizational strategy.

11. Difficulty in evaluating the effectiveness of PMO in the organization.

12. Lack of training and communication on PMO implementation to all stakeholders.

13. Difficulty in staffing PMO with most experienced personnel.

- Singh et al. (2009) says that apart from a rigid company culture (resistance to change), a major challenge is the lack of experienced PMOs within the PMO leadership and of a change management strategy suited to PMO implementation. (Giraudo & Monaldi, 2015) assert that there is no A "one-size-fits-all" PMO, therefore, it is necessary for the project management office to come as a response to the internal needs of the organization and the conditions of the surrounding environment.

- **PM solutions (2022)** investigated the challenges faced by the PMO during its implementation and its subsequent development. The Figure 20 below shows the top PMO challenges:

TOP FIVE CHALLENGES

1	Inadequate resource management capability – 53%
2	Having enough time/resources to devote to strategic activities – 48%
3	Organizational resistance to change – 47%
4	Prioritization – 47%
5	Not enough project managers – 42%
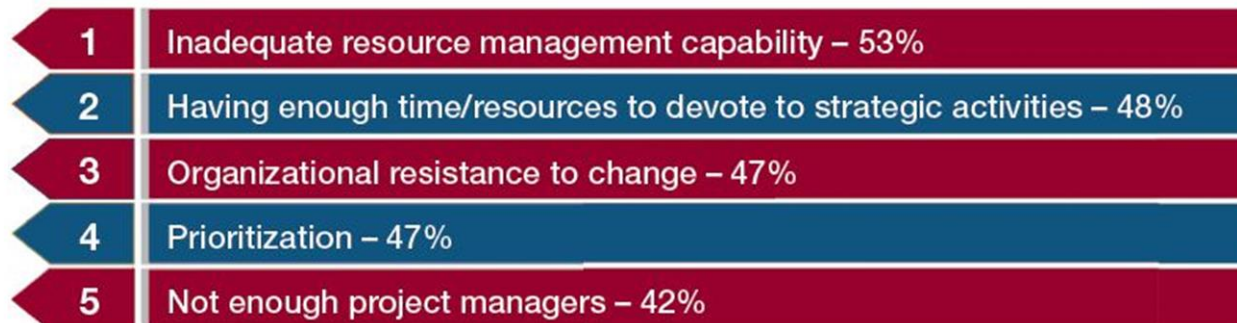
Figure 20: Five Top PMO Challenges, Source: PM solutions 2022, p,10

3.6 Project management office implementation:

- As the phenomenon of PMOs became known, organizations are getting more and more keen on implementing it, where the good project management discipline, embedded in the PMO, can run projects more efficiently, with lower total costs and at a higher quality level. But good projects management skills are not a panacea it's important to do it well, so that long-term benefits outweigh efforts to manage change.

- There are still risks and surprises that can happen. With so many projects today experiencing time or cost overruns, the question is not whether to implement

PMO, but how to implement it sustainably, cost-effectively, achieve benefits quickly and focus on continuous improvement.

- The PMO implementation life cycle consists of five stages: Initiation, Planning, Execution, Control and monitoring, Maintenance and transition as stated in (Al Ameri, 2016).

   a. Initiation: where the team is selected, physical location and definition of roles & (mission & vision, strategy, objectives, measures etc.)

   b. Planning: during this phase the PMO selects the methods, standards, processes and tools to be adopted, risk assessment, and budget.

   c. Execution: This is the operational phase, the managing of projects using the tools developed in the previous phase, recruiting staff, defining roles and responsibilities, and drafting a governance plan.

   d. Control and monitoring: marketing, communications, measurement, and encouraging involvement.

   e. Maintenance and transition: After PMO have been implemented, the methods used should be reviewed and improved. This is done by measuring how well projects meet time and budget expectations.
   During this stage, new services can be implemented, and PMO can be upgraded. The purpose is to raise the level of project management maturity.

- The project management office is an organizational unit that requires a change in the structure of the organization.

- It is essential when established PMO to define its purpose, goals and its objectives and define stakeholders, requirements, scope, budget, resources and schedule. Establishing early alliances and drawing up a PMO charter and

communication plan. Transition and implementation plan to establish the new PMO into the existing organization are also equally important (Salameh, 2014).

- Any new implementation of a Project Management Office (PMO) must be preceded by an analysis of the current project management situation in order to function effectively. The following questions are suggested as a starting guide and checklist during implementing a PMO (Dostal, 2020) :

  # What capabilities should a PMO have?

  # Will the tools used by project managers be mapped?

  # What level of authority in relation to senior management and projects and what level of control over their performance? Will it support projects with administrative tasks only?

  # At what level will the PMO operate? for one project? Or several projects?

  # Will the PMO support the entire company or its division?

  # How fast does it have to be ready?

  # What level of maturity does the company want the PMO to reach?

  # What functions the organization want to achieve by establishing a project management office?

  # Who are the stakeholders and what their attitude about PMO?

  # Is there a PMO change management plan in place?

There are no uniform answers to these questions. Where each organization, after a comprehensive review, has its vision, taking into account the practical application and context of the PMO.

- Creating a new PMO structure generally requires a change in the culture of the organization. such as requiring project managers to follow standardized files and reports, or applying new procedures to their estimating practices.

- This change is an inevitable consequence of the new technology in project management, and it may take a great deal of effort and time to be well disseminated in the organization Organizations that want to achieve their goals quickly must prepare for these changes efficiently.

- (Crawford, 2011) writes several key tips that can initially help with implementation.

  - ✓ keeping stakeholders informed and interested.
  - ✓ Deliver value and get quick wins before demanding change.
  - ✓ Not trying to do everything at once, a good PMO manager should decide whether to change people, processes, or tools and not try too hard to change everything at the same time.

- (Aziz, 2014) says creating a successful PMO begins with understanding and defining the PMO roles in the organization. Where there are different types of PMOs, but it is not possible to judge which one is the best based on its structure and functions, since the main goal of a PMO is to meet the needs of the organization and the expectations of its stakeholders.

➢ 3.6.1 PMO implementation approach:

- (Desouza & Evaristo, 2006) stated that there are two ways to implement PMO.

  - ✓ The first is through a "top-down approach"

  - ✓ The second is the 'bottom-up approach', depending on the organizational structure of the organization.

In the case of a 'centralized' organization, the top-down approach is more appropriate and easier to adopt. Whereas in the case of a 'decentralized' organization, a bottom-up approach would be more appropriate, as the PMO is the result of collaboration among the project managers of the organization.

➢ 3.6.2 PMO structure:

- The PMO structure should fit the planned phases and modules covering the roles identified in each phase of the roadmap. Thus, the structure of the PMO must be flexible and change as the needs of the PAHW change.

The PMO structure should consist of the following: (Hindi, 2013)

  - ✓ Director/Director of the Project Management Office

  - ✓ Subject matter experts

✓ Project Management Office Coordinator

✓ Project managers.

➢ 3.6.3 PMO Location:

▪ The location where the PMO will be located is very important. The PMO can be established and linked at several locations within the company, supporting the functions of the organization.

▪ The PMO may have direct authority and serve as a functional department responsible for all projects of the organization as Figure 21.
 or it may not have direct authority and its function is to provide support to project managers and senior management as in
Figure 22.
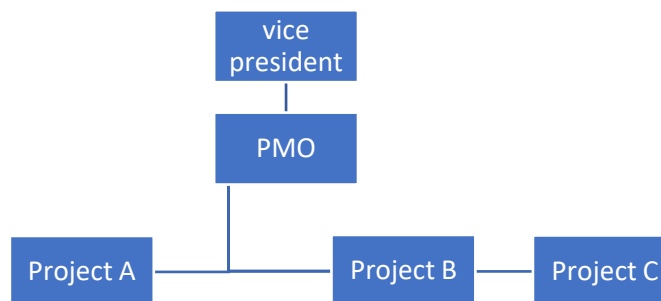
Figure 21: PMO in a Line Organization (Snyder & Parth, 2007)
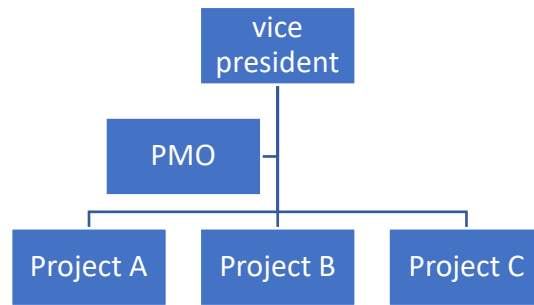
Figure 22:PMO in a support organization (Snyder & Parth, 2007)

4. Chapter Four: A proposal PMO for Public Establishment of Housing in Syria

4.1 Introduction:

- Over the past few years, Syria has undergone significant changes in its social, economic, and political landscape. One of the sectors that has seen rapid development is housing, with the establishment of the General Establishment of Housing to provide affordable housing for low-income families. However, poor project management practices have resulted in delays, cost overruns, and poor-quality results.

- To address these issues, this thesis proposes the implementation of a Project Management Office (PMO) for the Public Establishment of Housing. The PMO will not only improve performance but also enhance maturity and overcome challenges. However, it is important to consider potential drawbacks and create an appropriate type of PMO.

  To achieve this goal, the study will determine the current status of the organization, identify problems within the Public Housing Establishment, examine project management procedures, and propose changes to management practices. The study will be conducted through academic research and interviews with employees.

4.2 About Public Establishment of Housing in Syria:

- The Syrian Public Housing Establishment is a non-profit organization that focuses on providing housing projects for low-income people with reasonable

prices and an appropriate payment method. It was founded in 1961 and operates independently under the Ministry of Public Works and Housing. The organization has its headquarters in Damascus and branches in all Syrian governorates. The most important tasks of Public Housing Establishment are:

- ✓ Participating in the preparation of five-year plans for the housing sector.
- ✓ preparing and implementing housing programs directed to the lower-income segments according to the plans established by the state.
- ✓ supporting the efforts of administrative units to secure alternative housing for those threatened with demolishing their homes.
- ✓ dealing with unorganized or random areas or those to be reorganized.
- ✓ practicing development and investment Real estate in accordance with the laws and regulations in force.
- ✓ building suburbs and new integrated urban projects.

- **Housing programs implemented by the Establishment of Housing are:**

- ✓ The youth housing project**:** which aims to secure approximately 65,000 homes in all Syrian governorates.
- ✓ The state workers' housing project: which aims to secure 22,000 homes for state workers in all Syrian governorates.
- ✓ popular housing for the State Council.
- ✓ Functional housing reconstruction of liberated villages in Quneitra Governorate.
- ✓ Housing for university professors, Social (popular) housing, Housing for those warned of the demolition of their homes.
- It has three main divisions, planning and housing studies, technical affairs, and financial and administrative affairs, as illustrated in Figure 23.

- The organization's core business is dependent on projects, which are managed by the main center in Damascus and its branches. The General Establishment of Housing has many housing projects throughout Syria, and it represents the entity that owns these projects and undertakes to implement its projects for other public or private entities. It may study and audit the project plans itself and supervise the implementation of projects in the event that the appropriate technical staff is available or undertakes to study and / Or supervision also for other parties.

  New project proposals are submitted by branches to senior management for discussion, study, and economic feasibility analysis. Decisions related to contracting methods and project prioritization are made through the upper management.
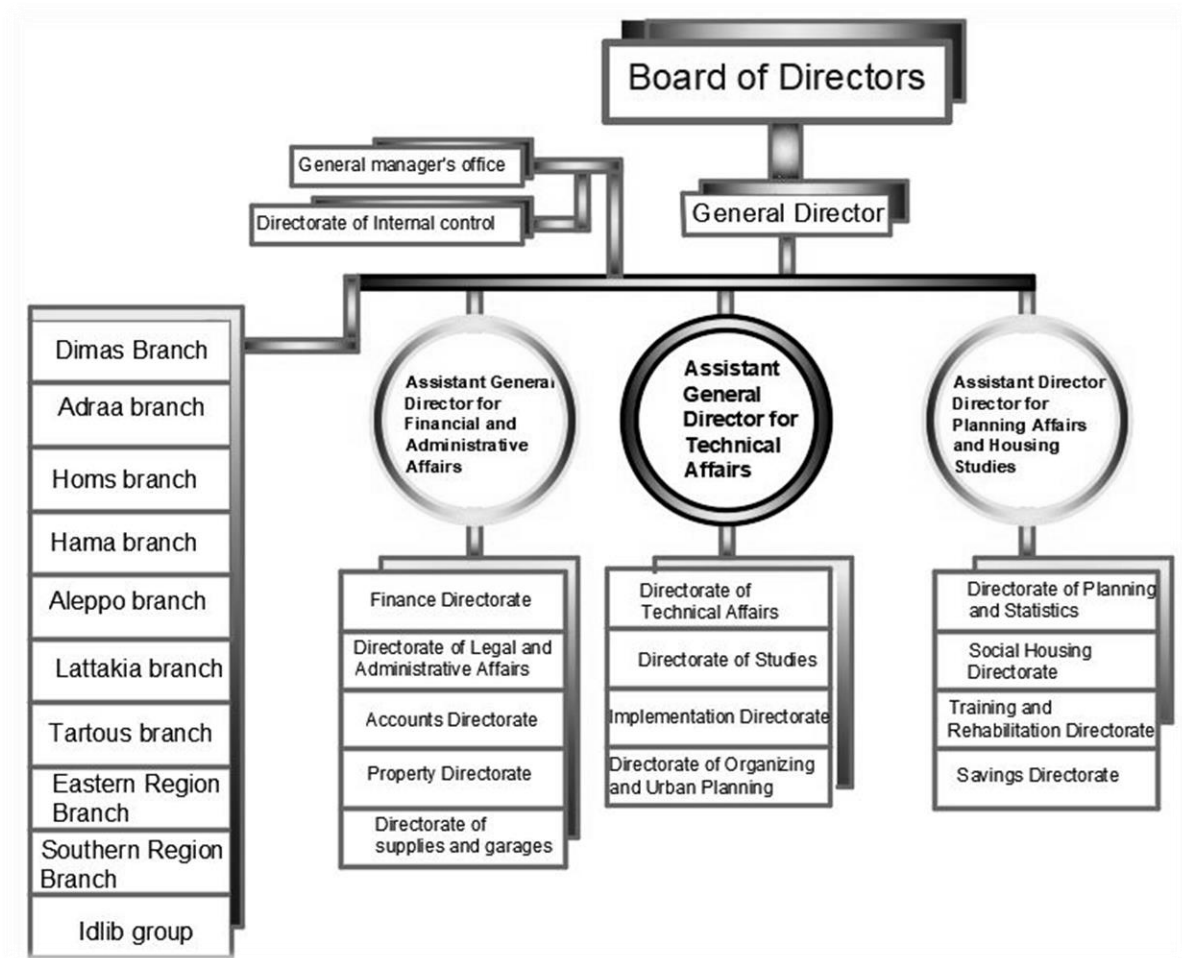
Figure 23: Organizational chart for Public Establishment of Housing.

- During several visits to the Public Establishment of Housing, interviews were conducted with many executive administrators and engineers in the organization, responsible for supervision implementing projects, and data collected in order to obtain a clear view of PMO and its benefits. Qualitative research was used in this type of research. The approach that was used to collect data is face- to- face interviews with employees of different levels,

and Observations from daily interaction through repeated visits, and researcher's previous experience in engineering work in the public sector.

➤ 4.2.1 Interviews:

- There are five main research strategies for research methods which are: (case studies, field experiments, surveys, archival methods, and historical analysis). In this type of research about the PMO and since this type of research does not need to collect laboratory or documented data. The two most appropriate strategies here are case studies and surveys. Since the focus of this thesis is on the case study, which is the Public Housing Establishment, the survey strategy is not really useful at this stage for many reasons, including:
  - ✓ Inaccurate responses, as some people do not possess real facts and experience.
  - ✓ Some questions require detailed answers from people who are difficult to include in the questionnaire.
  - ✓ Some people are not familiar with the concept of PMO, and this may lead to inaccurate responses.
- As stated by (Saunders, 2009) interviews are a research tactic, which involves choosing tools or a method for collecting actual data.

The sample were selected from different levels within the technical department in the public Establishment with the aim of representing different perspectives and experiences with an emphasis on those with an understanding of project management, aiming to help in achieving the research objectives& define the functions and roles of the Project Management Office (PMO).

Face-to-Face interviews were conducted with ten employees in the Housing Establishment (see Table 2) for a more comprehensive discussion, and to build on their expertise and experience. Highlighting areas of weakness in the accomplishment of tasks, shedding some clarity on necessary technical and critical processes. And identify processes that could benefit from support by proposing the PMO to not only assist with tasks, but also support the project.

Various interview techniques will be used to meet the research objective, a list of questions was developed by the researcher to help manage the structure and flow of the interviews as well as understand the meaning of the different concepts of PMO, an introduction to the interviews was made before starting the interviews, explaining the aim and objectives of the research.

The questions were related to the Establishment in general and about projects and the mechanism of work and management in it with regard to scheduling, project requests, quality, budgeting, training and challenges, we can separate the questions into two axes:

- ✓ **The first axis:** includes general questions about the gender, age, experience and educational attainment of the employee with whom the interview was conducted and the certificates he possesses in the field of project management and/or the courses he followed in this field.
- ✓ **The second axis:** included questions related to assessing the current status of the organization in order to collect information about the importance and level of project management in the organization, and the principles and processes of project management that are conducted.

- The answers helped identify the problems that Housing Establishment face. The details of the most important interviews are shown in the Table 2 and appendix A.

Through this friendly discussion I have gathered information about the current state of the organization, their views on the problems they have to deal with and on the changes, they think are necessary and beneficial.

Table 2: list of face-to-face interviews.

≠ Interview	Job title	profession
1	A supervising engineer	Civil engineer
2	Project manager	Civil engineer
3	Group director	Architect
4	Project manager	Civil engineer
5	Director of Technical Affairs	Architect
6	An Engineer at Technical Affairs	Civil engineer
7	A supervising Engineer	Architect
8	A supervising Engineer	Electrical engineer
9	Project manager	Civil engineer
10	Technical observer	technical Institute

(The full version of the interview's questions can be found in the Appendix A).

- The data obtained through the literature and the interviews were gathered, analyzed, and classified into groups in order to compare them with the theoretical background.

➤ 4.2.2 Literature findings:

- Organizations operate in a competitive environment and for this reason they look for what distinguishes them from their competitors. PMO gives this feature.

  Where the literature confirms the impact of the implementation of the project management office and its positive reflection not only on project results and project management processes, but also on organizational performance. It also plays a very important role in improving project management processes, assisting project managers and increasing project success.

  The literature also presented the different types of PMO, the different levels of the PMO, and the different roles and responsibilities.

- Implementing PMO is not easy and it is a big change, and like any other change it will be met with fear and skepticism. Each organization must choose, based on its mission and vision, the most appropriate and beneficial type of PMO, as well as the level and location of the PMO, as each of these types serves different needs. Ongoing staff training is also mandatory. Training processes must be described.

- Interview's information will be used in order to propose a suitable type of PMO.

4.3 Discussion and interviews analysis:

▪ As a result of the interview analysis:

The Public Corporation for Housing faces great challenges not only with regard to its operational performance but also the restrictions and requirements imposed by the current economic situation in the country, and it was found that there is no unified methodology in project management, and most of the Corporation's projects are currently lagging behind in terms of time and exceeding the estimated cost. Effective project implementation process needs to be improved, skill resources allocated are average and training is needed. The Housing Corporation has in recent years made partial changes that have only strengthened certain areas.

▪ For this reason, the Housing Cooperation is obliged to make adjustments and changes in the way it operates. The required changes were identified through interviews and telephone calls with its staff.

As it was clear from the interviews that the main problem was the reflection of the state's economic situation on the work of the Cooperation in terms of price differences, the unavailability of raw materials and equipment, and the lack of funding required for the Cooperation's projects but lack of planning increased these effects. The most important problems related to the Cooperation's projects are:

1. The problems of land acquisition in terms of complex procedures, and the lack of cooperation of other parties to facilitate the work, This leads to delays in projects and an increase in the total cost, as sometimes there is

lack in planning where the project is decided and announced before the completion of these procedures.

2. The special conditions and criteria set in the preparation of the project studies are not sufficient, and there is a rupture in the relationship between the studying body and the executing and supervising body, This can lead to misunderstandings and can lead to errors during the implementation of projects

3. The special conditions and criteria set for selecting the executing agency (whether it is a public or a private one) are insufficient and accurate.

4. The organization's communications management is not at an adequate level between the supervising authority and the directors of the institution, as well as there is a clear routine in the movement of reports that lead to delays in decision-making and financial losses resulting from price differences, and time and technical delays that impede the progress of the project.

5. The interviews showed low levels of planning, monitoring and oversight.

6. Weak coordination between different project parties.

7. The Housing Corporation does not have an appropriate risk management system. This can lead to unexpected problems during the implementation of projects.

8. The organization lacks experts and engineers specialized in project management and technicians as a result of low salaries that do not encourage engagement in government jobs, which has led to the resignation of many employees and job turnover.

9. The Public Corporation for Housing does not have a quality management system.

10. The lack of specialized training courses, and the lack of some necessary equipment for communication, especially in the establishment's branches.

11. The software used is still simple, such as Excel and Word, and most transactions and approved charts are still on paper.

12. Not giving importance and appreciate enough the individual initiatives, this can lead to discouragement of motivation among employees and can lead to a lack of innovation, and rewards and incentives are very few and not motivating.

13. Lessons learned are not recorded for future reference.

4.4 The role of the project management office in the Public Establishment of Housing:

- With the growth and implementation of more projects in the Public Corporation for Housing in all governorates, it has become difficult to manage them effectively. This is where the Project Management Office (PMO) comes in.

- Based on the literature review, interview data review, and the problems faced by the Housing Cooperation, the project management office is the ideal method that will not only monitor and run projects, but will also help the organization in overcoming most of the above-mentioned problems, especially in terms of reporting traffic and reducing project execution time Save expenses and most importantly monitor the entire organization, its

progress and performance. It is important to consider the type of PMO and the level of authority given to it.

➢ 4.4.1 Proposed PMO location and authority:

- Based on the organizational chart and the need for a PMO in the Public Corporation for Housing, A **Controlling PMO** is proposed as a Central PMO within the Technical Affairs Department in the Housing Corporation Center headed by the "Assistant General Manager for Technical Affairs", since "Technical Affairs" is directly responsible for all the Housing Corporation projects. This central office receives data from projects through other sub-project management offices in each branch and program within the Cooperation's branches in the governorates, and doing the same functions in each branch, as illustrated in the Figure 25, Figure 25 below.
- his Controlling PMO establishes standards for managing projects in coordination with all other concerned departments, consults on how to follow those standards, enforces the standards and improves them later.
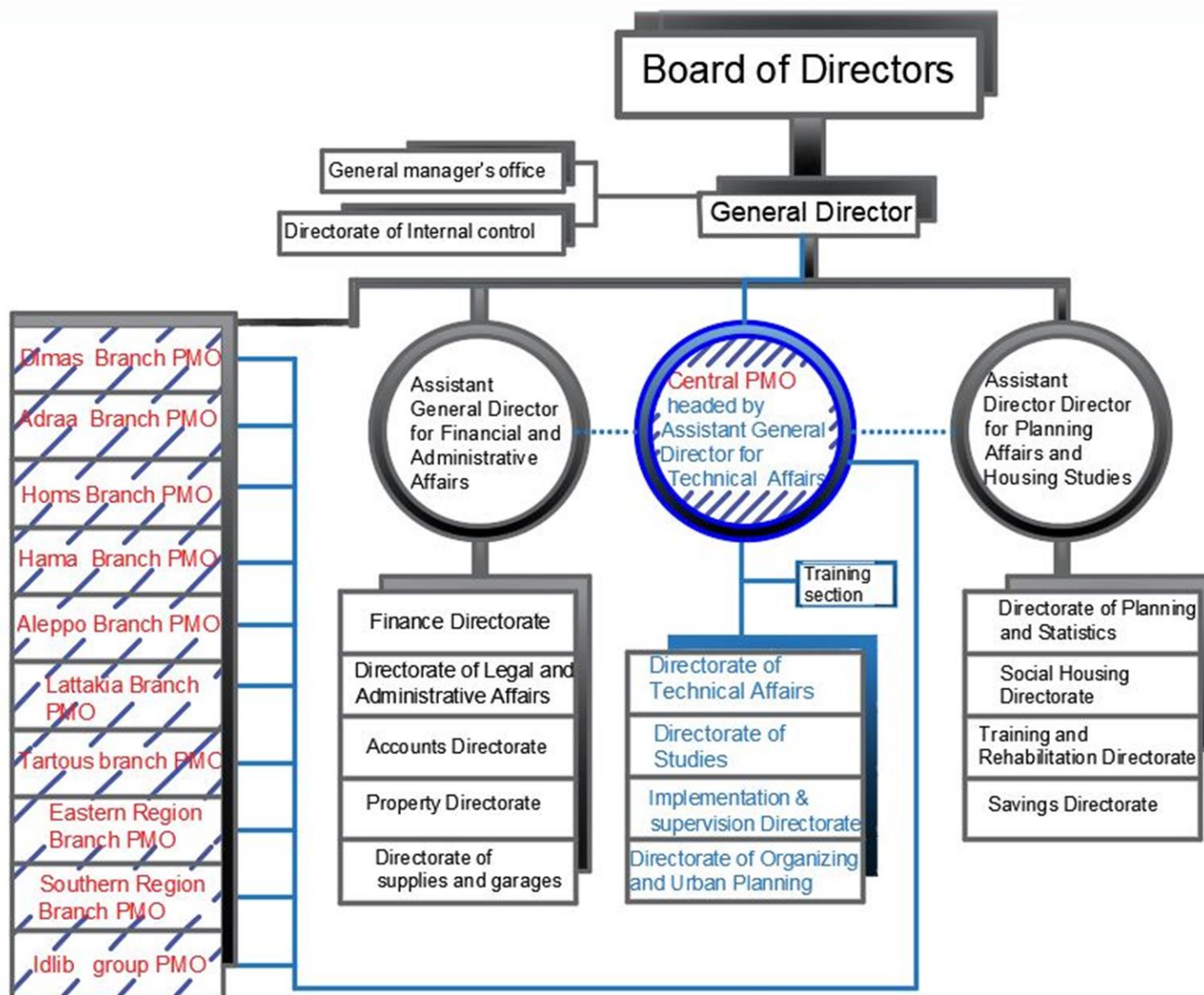
figure24: PMO in the Housing Establishment
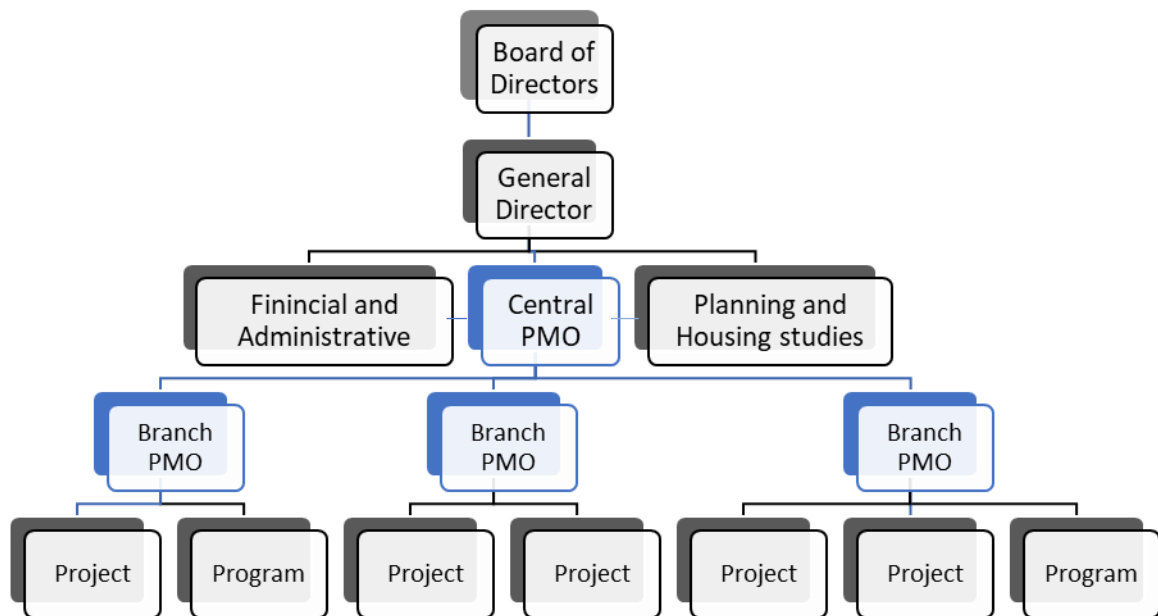
Figure 25: The proposed PMO location.

- This PMO will act as a central controller responsible for the project planning functions, coordinating operations starting from the early stages in the project and managing the project in accordance with the project management methodologies, movement of reports, setting templates and support, best practices, training, and data collection and evaluation. This data is the key to the ability in providing information, progress reports, and a platform for lessons learned which improve the methodology of future projects. A PMO can also help value individual initiatives.

➤ 4.4.2 Proposed responsibilities and functions of PMO:

- **The project management office can start taking on the most priority tasks at the beginning of its work and gradually develop and expand its function to carry out all the tasks assigned to it.**

This PMO can support many functions in a housing organization including:

1. <u>Planning, Control and Supervision:</u>

The Project Management Office (PMO) provides planning and central guidance to monitor the organization's projects at all stages of the project starting "from the project proposal and the economic feasibility study and also the selection of the optimal economic solution and the announcements of tenders and contracts, supervision and control.

2. <u>Setting standards and procedures:</u>

By developing the procedures followed in accordance with the correct management methodologies and setting the necessary standards and models for the successful management of projects. This ensures that the project follows best practices and is on track, unify work methods, tools, techniques and templets.

3. <u>Communications and reporting movement management:</u>

The Project Management Office (PMO) can solve communication problems by establishing effective communication channels between project managers and senior management, and reporting on the status of implemented projects in order to contribute to the successful completion. Another responsibility of the

PMO is to prepare reports on a weekly, fortnightly or monthly basis as needed and to submit them to the management after completion, and the PMO will be responsible for scheduling these meetings with senior management and all stakeholders, resolving routine issues in the movement of reports and thus reducing delays as this helps to keep everyone informed and working on the same goals and speeds up decision-making, which facilitates the progress of work on the project easily.

4. Coordination and Problem Solving:

The PMO coordinates between different parties in the project, developing solutions to problems that hinder projects or reduce progress and quality is another key function of the PMO. This ensures that the project continues on its right track and achieves its objectives, as well as following up on the disbursement of financial statements and contractors' dues.

5. Performance Evaluation:

The Project Management Office (PMO) evaluates performance in branches, groups, and projects. This helps identify areas where improvements can be made and ensures that everyone is working towards the same goals.

6. Lessons Learned and information Center:

The project management office is the reference point and is responsible for verifying the availability of the previously specified time for information, managing information, systems, as well as developing the project management program, and digital transformation. It also provides a platform for recording lessons learned for future use, so that this information serves project managers

and new employees in following up on work clearly and smoothly without confusion.

7. <u>Support, guidance and training:</u>

Since the interviewers provided low rates of support, the PMO should direct and instruct the organization's staff for the proper implementation of the above procedures and practices

It should also be responsible for planning and implementing project management training following a defined method in order to deliver the training successfully, ensuring that all those responsible for carrying out the work doing their tasks in the correct manner, through training, workshops. Supporting them, encourages their l initiatives, suggests rewards and incentives based on employees' efforts, knowing their needs and weaknesses. This helps motivate them and ensures that everyone is working toward the same goals.

8. <u>Risk and change Management:</u>

The Project Management Office (PMO) will establish an appropriate change and risk management system to mitigate risks associated with projects. And in the case of changes and risks that the project management team cannot handle. The PMO must collect all the necessary information and report it to the line managers, who will decide the situation.

9. <u>Quality management and assurance:</u>

The PMO is responsible for applying quality assurance procedures, assessing the quality of the information published in the forms and verifying compliance with standards and directives. Improving the quality assurance mechanism for executing work on site by applying quality assurance procedures in projects is

critical. The responsibility of the authority lies Supervisory Responsibility for monitoring and implementing the quality program to ensure quality control of materials through samples This ensures that the project is completed to the required standard.

10. <u>Define its functional methodology and define its operating manual.</u>

4.5 PMO implementation in the Housing Establishment

- The establishment of a project management office (PMO) within any organization in the public sector may carry the solution to the problem of implementing projects within the strategic plan of the organization, and minimizing failed projects.

- Where the need to exercise greater and more efficient control arises when many projects are running simultaneously within the organization, the establishment of a project management office becomes a necessity. The PMO helps both project managers and host organizations understand and apply professional practices in managing their projects (Singh et al., 2009).

- Once the establishment of a PMO is approved, the organization must take serious care of how it will start, which should be pre-planned through these questions:

  - ✓ What functions should the project management office perform,
  - ✓ Who are the employees who will be selected to work in this office?

✓ Where will the PMO be located, as a single department or in an associated unit?

Given the complexity of the PMO functions, the host organization should follow "specific" training and development of the skills of its staff, with the aim of strengthening the PMO management to achieve project objectives that are aligned with the organization's strategy and vision.

➢ 4.5.1 Steps to establish PMO in Housing Establishment:

▪ Figure 26 below shows the detailed steps required to establish a project management office within the Public Establishment of Housing, after reviewing the frameworks set by (Salameh, 2014) , (Fayadh, 2020),and (Al-Maghraby, 2011)

Analyze the organization operation & managment status

Define PMO,mission, objectives,and strategiy

Identify PMO stakeholders

Outline PMO functions &types

Define PMO success criteria and metrics

Define PMO organizational position

Define PMO staff

Define PMO integration plans

Define PMO charter

Insure buy in and top management support

Get approval on PMO charter

Build the project management methodology and processes

Implement project information system

Perform PM training

Define PMO KPIs, Report and enhance continously

Figure 26: steps to establish PMO in housing Establishment.

1. *Analyze the organization operations &management status*: Focus first on understanding the organization's vision, strategic goals, business objectives, culture and department, Interconnections and relationships so that the PMO can set its path to implement and facilitate effective project management methodologies and align project management methodologies and processes

with strategic objectives, and ensure vital senior management support for those policies and procedures.

2. ***Define PMO mission, objectives, and strategy***: An effective PMO mission statement clearly defines the reason for the PMO's existence. The function of the PMO should be clearly described, how it will conduct its business, and who the PMO staff, customers and stakeholders are. Reviewing the data from the interviews, I suggest the PMO's mission should be: " to develop and support project management methodologies. So that supports the possibility of delivery Projects on time, on budget and within scope while meeting clients' expectations". By:

   ✓ Establishing a project management culture based on technologies appropriate to the specific needs of the enterprise,

   ✓ centralization, Monitoring and supervising projects.

   ✓ timely reporting to the upper management, produces its communication plan and will be responsible for its implementation.

   ✓ developing methodologies and best practices for project management.

   ✓ support and contribute to the needs, which arise during the life cycle of the projects.

   ✓ Regarding Compliance with procedures and practices to be followed.

   Objectives: The PMO should focus on short-term tactical goals and long-term strategic goals. At the beginning of PMO work, he should plan simple and easy objectives -to-achieve goals.

Short-term goals should be achievable within relatively short periods of time to ensure success and increase PMO support in the organization and realize its value in the future, (Salameh, 2014) Short-term goals are such as:

- ✓ preparing project dashboards and periodic project reports,

- ✓ standardizing project methodologies,

- ✓ performing training for project teams.

- ✓ meeting certain stakeholder requirements.

- ✓ preparing a detailed assessment of the status of projects.

Strategy: focuses on how to achieve the long-term goals of the PMO, the implementing of successful organizational project management practices, the reason for establishing a PMO, and the functions and services it should provide to the organization, and gaps that must be addressed.

3. *Identify PMO stakeholders*: The Housing Establishment has external stakeholders have different strategies, interests, and goals. Stakeholders such as government departments, building contractors, engineering offices, financial institutions and end users. While all managers and employees are internal stakeholders.

managing stakeholder requirements effectively must be one of the primary goals of the PMO. Identifying and understanding the influence and relationships with external and internal stakeholders is very important in planning the development of a PMO. In the previous paragraphs, the tasks required of the Proposed PMO were discussed in detail

4. ***Outline PMO functions & types***: The success of the PMO is related to the selection of the functions that the PMO must perform and their relevance to the organization's process and goals (Oliveira, Tereso, & Fernandes, 2017) as cited by (Fayadh, 2020).

   In the design of the proposed PMO, there is no attempt to define a specific type of PMO, but the PMO will be responsible for managing the life cycle of projects and supporting their success in delivering within the specified time, budget, and expected quality.

5. ***Define PMO Success Criteria and Metrics:*** which measures the performance of the PMO. The PMO sponsor and senior executives should participate when metrics are defined, along with reporting on mechanism, tools, and iteration.

   According to the PMI Pulse of the Profession survey (2013), the majority of PMOs are measured by:

   - ✓ Project delivery within schedule and/or cost.

   - ✓ customer satisfaction ratings, Stakeholder feedback assessments, project owner feedback ratings.

   - ✓ performance against financial targets.

   - ✓ Formal assessments of project managers and PMO staff.

6. ***Define PMO organizational position:*** The project management office (PMO) organizational structure is designed to be effective in managing the project life cycle with its various stages and stakeholders.

7. ***Define PMO staff:*** The PMO employs a few people as executive staff, in addition to project managers who may be employed within and reporting to the PMO, depending on the PMO model chosen. Each of the positions that the PMO is designed to provide needs to be filled with the appropriate number of staff with the appropriate skills required.

   The number of staff in a central PMO is about 12 staff members while each branch PMO may include 2-3 staff members.

8. ***Define PMO integration plans:*** Channels of communication and interaction with internal and external stakeholders must be developed and implemented during the PMO process. To avoid resistance, PMO must offered in a collaborative format.

9. ***Define PMO charter:*** It should contain the PMO's vision, mission, goals, success criteria, scope, timeframe, budget, stakeholders, and expected challenges. This document is very important because it defines what the PMO is to be created within the organization.

   Once the PMO charter is complete, it is important to obtain clear approval and support from senior management (board members, chairman and CEO), otherwise the success of the PMO will not be guaranteed. All the literature stresses the importance of the approval and support of senior management.

10. ***Insure buy-in and top management support:*** All the literature stresses the importance of the approval and support of senior management.

11. ***Get approval on PMO charter:*** Once the PMO charter is complete, it is important to obtain clear approval and support from senior management

(board members, chairman and CEO), otherwise the success of the PMO will not be guaranteed. Once approved by stakeholders, the PMO implementation process begins.

12. ***Build the project management methodology and processes:*** Organizations should focus on establishing consistent and repeatable processes for project scheduling, project tracking, and overall project supervision and support (Brown, 2012).

<u>**Methodology**</u>: which is the process of guiding the performance of a project from concept to completion, can be accomplished by presenting a series of steps to be followed. This process should address the groups of five processes, initiating, planning, executing, controlling and closing. The introduction of project management practices is gradual, starting with those that have the greatest impact on project business success (Hill G. M., 2013).

13. ***Implement project information system:*** There are many PMIS tools available in the market, and it should be well researched in advance to determine the most suitable tool for the prospective PMO, based on several criteria such as required functionality, available budget, required level of features for team collaboration, and information systems infrastructure in the organization. Software tools are useful. There are a variety of software tools for many related purposes. For example, project and scheduling management tools, portfolio management tools, and enterprise team collaboration tools. Other things such as creating an intranet website for the PMO should also be considered.

- It is important to know that not only once the tool is deployed will the PMO be up and running and start executing the processes. The tool is a supportive aid for process automation, but all other components of the PMO must be set up so that the benefit can be realized from the tool (Al-Maghraby, 2011).

- (Daas, 2019) designed a database for the project management office in a contracting company in the implementation phase, which helps to manage a group of projects under the supervision of one department and follow up these projects effectively, and helps in collecting information through detailed reports that follow the stages of implementation of these projects through the methodology of earned value, it can be used within the project office system in the organization.

14. Perform PM training: Given that the Project Management Office (PMO) is a complex entity within a competitive environment, it is necessary to have continuous training for its staff In order to help employees become more familiar with the principles and standards of project management and prepare them for the resistance shown by the rest of the employees towards PMO, this may be through conducting workshops in which the senior management participates along with the employees who will participate in the discussions and their duties.

15. Define PMO KPIs, report and enhance continuously: Some of the key performance indicators or performance metrics for the proposed PMO are:

a. Deliver projects within the planned schedule.
b. Earned value.
c. Accurate forecasting of cash flows.

d. Timely availability of updated project information.
e. stakeholder satisfaction.
f. Turning risks into opportunities
g. End Users Feedback.

- According to its development plan, the PMO will gradually develop, to ensure continued success of PMO, it must be focused on continuous improvement and monitoring, this process offers the opportunity to build a culture Organization based on project management best practices.

> ## 4.5.2 Earned value management system:

- Through the earned value management system, the project management office follows up the performance of projects periodically in order to clarify the actual completion of the planned work within the time and the actual cost compared to the time plan and the financial plan and to know the deviation in time or cost if it occurs and the percentage of that, and this is done through questions Next: (Shaaban, 2012)

    1. What is the current status of the project in terms of time plan and budget?
    2. What is the cost required to complete the project?
    3. When will the project end if the completion continues at the same rate?
    4. What are the potential problems that need to be resolved now?
    5. What are the reasons for the delay, if any? -6
    6. How much work has been accomplished in exchange for what has been spent?

7. If spending is more than the budget allocated so far, can spending be adjusted at the end of the project?

- The earned value methodology is based on calculating the following three values, which express the extent to which project implementation differs from the plan in terms of time and money, namely:

Scheduled work in the cost budget (Planned Value PV).
Works performed as per cost budget (EV earned value).
Actual cost of work performed is called ACWP.
Actual cost of work performed BCWP.

- After knowing the values of each of (AC-EV-PV) in any time period of the life of the project, depending on the completed and planned works, it is possible to calculate the earned value equations for the project, each of which has a special significance.

➤ 4.5.3 PMO Sprint Plan:

- According to (Pietinen, 2019) the Project Management Office (PMO) should divide its path into appropriate work packages and take into account the principles of change management in general, which is a process of continuous renewal of the organization's direction, structure, and capabilities for continuous improvement to meet the needs of external and internal customers.

- Figure 27 below describes the plan for a PMO:
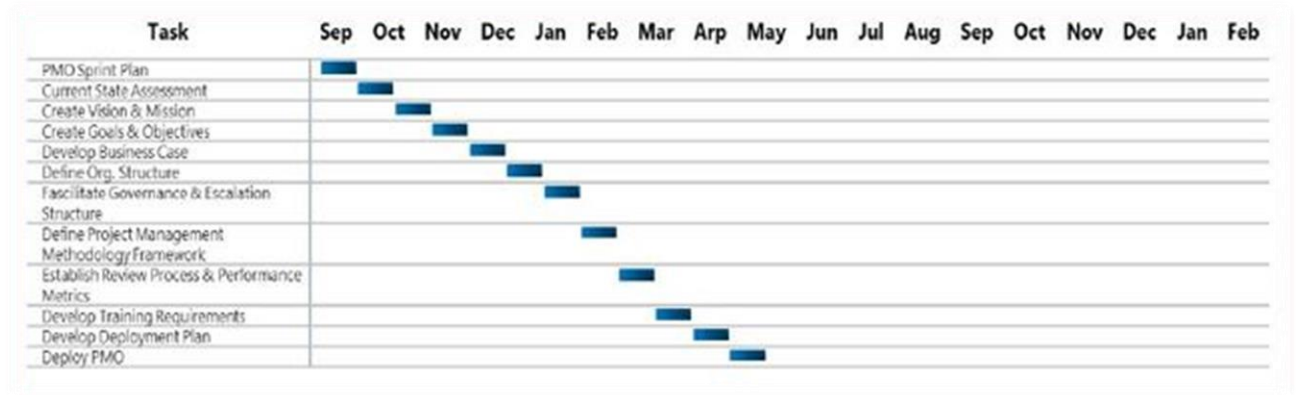
Figure 27: PMO sprint plan. Source (Pietinen, 2019)

4.6 Critical success factors for a PMO in Housing Establishment:

- Creating a PMO is a big change and like any change, there is a lot of potential for resistance. Through the last two questions of the interview, I understood that the majority of those who were questioned were positive for PMO accreditation, of course there were negative or neutral views, appropriate participation with these can help them see the benefits of this work and overcome their fears and change their view to be positive for such adoption. As mentioned earlier in our literature review, in order to create a successful PMO and defeat resistance, there are also some critical success factors that need to be taken into consideration.

- **For the Public Establishment of Housing, there are four critical success factors, based on the aforementioned literature:**

    1. Support from the top management of the organization and the organization and establishment of the project management office.

    2. The line managers shall participate and support every effort or direction of the PMO and organize meetings and workshops that clarify and confirm how to handle the new office and its purpose in order to ensure the smooth and continuous operation of the PMO.

    3. Clearly define the roles and responsibilities of the PMO in a way that all stakeholders understand.

    4. Effective implementation of methodologies and best practices for managing a PMO project.

    5. Focus on making quick wins so as to prove the PMO value.

    6. it is recommended to carry it out step by step in the establishment of the PMO and start first with the important tasks.

    7. Choose PMO staff carefully.

4.7 PMO Execution:

- After developing the methodology, the project management office must start applying this methodology through it, and conduct several workshops for project managers and teams and address the following issues:

  - ✓ Communication issue.
  - ✓ Lack of skills and knowledge in project management.
  - ✓ Effectiveness PMO Reports.
  - ✓ Improvements and Enhancements.
  - ✓ Defining regular meetings with project owners and all communication tools as follows: (face to face, Emails, phone).
  - ✓ Conduct training on project management principles and project management methodology.
  - ✓ Develop specific PMO software to improve reporting quality, enhance communication and integrate the entire PMO system together.

- Once PMO is in place and executed, it must track, monitor, report and improve.

- PMO failure status begins when the value of the PMO is questioned due to the presence of incomplete projects that have not been delivered

  Within specified budget, time and output targets. To avoid failure, PMO managers must implement number of evaluations over time to provide insights into whether project management processes are in progress Successfully integrated into the organization.

- one of the main functions expected of the PMO is to provide joint aggregated reporting on the status of all projects and portfolios of the organization.

It is important to ensure that all relevant stakeholders and senior managers are aware and up-to-date on PMO status, progress, and obstacles.

Performance reports can be done weekly, monthly, or quarterly, depending on the type of PMO and stakeholders. In the Establishment of Housing the proposed central PMO may report on performance against financial targets quarterly, while the branch PMOs may report on project delivery against schedule on a weekly basis. Table 3 illustrates the proposed main documents required in all projects in Housing Establishment.

Table 3: Project Documents list.

Project Documents list		
1-PROJECT CHARTER	Initiating	A project charter must be filled up and approved. It includes all the relevant information about the project and the agreements made between the parties.
2-PROJECT SCHEDUL	Planning	The estimation about times will happen here and the milestones will be defined in order to provide the keys to have an

		appropriate follow up during the evolution of the project.
3-PROJECT TRACKING	Executing/ Monitoring and controlling	managing the project activities in a daily basis; it is focused on the team and the detail about the execution part of the project.
4- POJECT CHANGE REQUEST	Monitoring and controlling	Need to be used to when changes are requested by the client, it gathers the relevant information that allows evaluating the change and inform about the impacts.
5- PROJECT STATUS REPORT	Monitoring and controlling	Once a week basis. Is a visual and complete way to show management about the status of a project including current situation and opened issues.
6-CLOSURE REPORT	Closing	Once the project is completed, this template must be filled up and approved.

4.8 Proposed PMO challenges:

- While the benefits of having a PMO are great, there may also be drawbacks that need to be considered. include:

    ✓ Increased overhead costs as additional resources and personnel are required.

    ✓ Resistance to change from employees and project managers who are not used to a centralized approach to project management.

    ✓ Inactive PMO can create bureaucracy and slow down the decision-making process if which can lead to delays in project implementation.

    ✓ Inflexibility A PMO may create a rigid approach to project management, which may not be appropriate for all types of projects.

5. Recommendations & conclusion

- As a master student in the Building Information Modeling program (BIMM) at the Syrian Virtual University, and upon my great belief in the value of BIM and its importance in the development of the construction industry in Syria in particular, and the world in general, and since this research discussed the important of Project Management Office (PMO), It was necessary to address the relationship between PMO & BIM and the benefit of each to the other.

- Future studies can study the possibility of applying these two concepts in an integrated manner in Syrian companies.

5.1 Relation between PMO and BIM:

- PMO (Project Management Office) & BIM (Building Information Modeling) are two different concepts but serve the same orientation.
  The PMO is responsible for managing and supervising projects from inception to completion ensuring they are delivered on time, within budget and meet the required quality standards.
  While BIM is the digital representation of the physical and functional characteristics of a building, which is used in all phases of construction, from design to construction and maintenance.
  The relationship between the two concepts is complementary, as Building Information Modeling (BIM) can be used to improve project management

efficiency by providing accurate data about building design, construction progress and maintenance needs. Working in a BIM environment allows accurate cost and time estimates to be calculated even at the design stage. Also, BIM can help PMO identify expected risks before they occur by simulating different scenarios and analyzing the impact of changes in real time.

On the other hand, the presence of an effective project management office "PMO" facilitates and supports a smooth transition in the organization in applying BIM effectively.

Briefly, PMO and BIM can work together increasing the efficiency of project management by providing accurate data about building design, construction progress, and maintenance needs, and support each other.

I suggest that the project management office, which was proposed in the Housing Corporation, and after a period of its launch, start applying BIM to new projects, at least in the planning and design phase, and setting standards for the entity that conducts the study through the special conditions in the contract by providing a three-dimensional model and requiring a conflict detection procedure between different disciplines.

5.2 Recommendations:

- This proposal can be of great benefit to the organization and may be used by it in the future in setting up a PMO.

  1. It is recommended to establish a project management office that is appropriate to the needs of the Public Establishment of Housing.
  2. One of the most important recommendations is defining the authority and responsibilities of the office accurately and clearly and defining the role and limits of responsibility of each one of the office team.
  3. Due to the fact that the establishment of a very mature PMO will require a period of time, it is highly recommended to carry it out step by step in the establishment of the PMO and start with the important tasks.
  4. The project management office should be in direct contact with the highest authority in the organization, so can provide them with a supervisory role and support them with information and data that support accurate decision-making processes.
  5. The results and effects of the Project Management Office do not appear immediately, but in the long term. Therefore, the Project Management Office must be given time and resources to build its capabilities and resources, and the results will begin to appear after 3 to 5 years.

6. The qualification of the PMO team is the main pillar in the implementation of the PMO s work, also a careful recruitment study of PMO staff must be conducted to avoid over-hiring in the future.

7. Appropriate awareness and understanding of the roles of the Project Management Office, especially the senior management.

8. Integration focus on short term and long-term success through proper planning.

9. Involve all departments in the work as PMO is a new entity and will face some internal resistance especially in the initial stages of incorporation.

10. Manage the expectations of leadership and all stakeholders to avoid negatively impacting PMO.

For Future Research:

- The following research studies are recommended for researchers who will conduct similar studies:

✓ Research that includes a study of a number of project management offices located within organizations and the roles played by these offices. This will help this research provide a deeper understanding, realistic experience and valid figures on the current roles that the PMO frequently performs within Syria and neighboring countries.

- ✓ A study is also recommended to cover the current level of awareness about PMO and its roles to help make plans to promote it within organizations and companies.

- ✓ It is also recommended a study to determine the impact of the establishment of the Project Management Office on the performance of the Public Housing Corporation after 3-5 years of its establishment, so that the study compares the current situation in the institution and the future situation in order to evaluate the advantages and disadvantages of its establishment.

5.3 Conclusion:

- As organizations continue to grow and implement more projects, the need for a PMO will become more important. In a country like Syria that still waking up from the burden of crises and the economic problems resulting from it, and suffers from a lack of implementation of project management methodologies, studying the methods that enable the implementation of PMO should start as soon as possible.

- In conclusion, I believe that the most appropriate solution for the organization is the establishment of a project management office. Based on a review of the literature and the results of the interviews suggested above the mission, objectives, responsibilities and location of the PMO. Critical success factors

are outlined. It is my belief that if the organization will follow these recommendations, it will successfully establish and implement the PMO.

- Of course, the PMO is not a "magic wand" that will solve all the problems associated with project management in the General Establishment for Housing and Syrian companies in general, "but it will provide a unified methodology (at the level of the organization) according to" the opinion of many authors, and this will greatly facilitate and improve project management and create a competitive advantage for its organizations.

➢ Limitations:

- The main limitation in this study was the number of interviews conducted. The sample was not big and the processing of the collected data was simple. Of course, it would have been better if the number of interviews had been more, but with the time to conduct the study, this was not possible, and I was also unable to interview people at higher administrative positions due to the difficulty of that and also the limited time available to complete this study.

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Appendix A:

The questions for interviews

General questions:
1) What is your job, age, tasks assigned to you?
2) What are the number of years of your job experience in general and within the Public Housing Corporation in particular?
3) What is your educational attainment?
4) Do you have any certificates in project management or have you followed training courses in this field?

Questions related to assessing the need for a PMO?
5) Are there project management frameworks or methodologies used in the organization?
6) Is there a need to standardize processes and procedures within the organization?
7) Are there any financial constraints or budgetary concerns for the establishment 's projects?
8) How are project risks identified and managed in the organization?
9) Are there any dependencies or interdependencies between projects in the public establishment for Housing?

10) Is there a need for better allocation and use of resources in the organization's projects?
11) Are there any problems with prioritizing projects or aligning with business objectives?
12) Are there any problems in communicating with the project parties and stakeholders and between the project teams, and is this communication sufficient?
13) How are project changes managed in the organization؟
14) What are the methods of resolving disputes between management and contractors or design offices?
15) How, when and to whom are the follow-up and achievement reports submitted?
16) Are there training courses for project managers and engineers in the field of project management?
17) What are the software and technologies used in managing projects in the Public Corporation for Housing?
18) What are the key performance indicators used to measure project success (KPIs) in the organization?
19) How do you evaluate the success of projects in the Public Corporation for Housing?
20) What are the main challenges facing the General Establishment of Housing In the field of (Land acquisition, studies and design, supervision)?
21) Do you think that the establishment of a project management office will benefit the organization and its projects?

22) What are your expectations of the PMO, and how do you think it will help you in your role within the organization?
23) What challenges do you think might face the establishment of a project management office within the Public Corporation for Housing?

Table 4: Most important interviewees

Question	1	2	3	4	5	6
Age	33	35	51	45	38	30
1)Job title	Supervising engineer	project manager	group manager	project manager	Technical department manager	An engineer in the technical department
Educational attainment	Civil engineer	Civil engineer	architect	Civil engineer	Civil engineer	architect
Years of Experience	9	10	28	22	15	6
Years of Experience in public Establishment	5	8	15	20	15	6
4) Do you have Certificates or courses in project management?	Yes, PMP course	Yes, PMP course	No	No	Yes, PMP course	Yes, PMP course
5) Are there project management frameworks or methodologies?	NO	NO	NO	NO	NO	NO

Question						
6) Is there a need to standardize methodologies?	Yes	Yes	Yes	No	Yes	Yes
7) Are there any financial constraints or budgetary concerns?	Yes	Yes	Yes	Yes	Yes	Yes
8) How are project risks identified and managed?	No risk management	No risk management	No risk management	No risk management	No risk management	No risk management
9) Are there any dependencies or interdependencies between projects...	Yes	Yes	Yes	Yes	Yes	Yes
10) Is there a need for better allocation and use of resources...	Yes	Yes	Yes	Yes	Yes	Yes
11) Are there any problems with prioritizing projects	Yes	Yes	Yes	Yes	Yes	Yes
12) Are there any problems in communicating with the project parties and stakeholders	Routine and slow communication	There are some communication problems	Slow communication with departments slows down the speed of decision-making	Routine and slow communication	Slow Communication and network outages	Slow Communication and network outages

13) How are project changes managed in the organization ….	No change managem ent, Slow reaction to change orders	No change managem nt, Slow reaction to change orders	No change managem nt, Slow reaction to change orders	No change managem nt, Slow reaction to change orders	No change managem nt, Slow reaction to change orders	No change managem ent, Slow reaction to change orders
14) What are the methods of resolving disputes.	Often friendly	Often friendly	Often friendly	Often friendly	Often friendly	Often friendly
15) How, when and to whom are the follow-up and achievement reports submitted?	A monthly official reporter to the Technical and Impleme ntation Departm ent	A monthly official report to the Technical and Implement ation Departme nt	A monthly official letter to the Technical and Implement ation Departmen t	A monthly official letter to the Technical and Implement ation Departmen t	A monthly official letter but not all reports arrive in time	A monthly official report
16) Are there training courses for project managers and engineers… …	few	Rare	Mostly central and not found in branches	Mostly central and not found in branches	Sometimes	Sometime s
17) What are the software and technologies used in managing projects…….	AutoCAD Excel word	AutoCAD Excel word	AutoCAD Excel word	AutoCAD Excel word	AutoCAD Excel word	AutoCAD Excel word
18) What are the key performance indicators used to measure project success	No KPIs	No KPIs	No KPIs	No KPIs	No KPIs	No KPIs

19)How do you evaluate the success of projects in the Public Corporation	Achieving the best results with the available capabilities	Financial continuity without delay in payments	Deliver the project within the specified time, budget and possible quality	Deliver the project within the specified time, budget and possible quality	Deliver the project without delay, at a reasonable cost and with appropriate quality	The citizen's satisfaction in receiving his apartment in a reasonable time ,cost, quality
21) Do you think that the establishment of a PMO will benefit the organization and its projects	Sure	Maybe	Yes, of course	Not sure	Yes	Not sure
22)What are your expectations of the PMO?........	If implemented well, it reduces time and cost and increases quality	A good application will increase the quality of implementation and explain the best implementation methods	Manage communications, increases transparency and appreciates initiatives	Better communications, Employee support, initiatives and rewards	Improves communication, reduces costs, manages time	Employee support, Appreciation of skills and efforts, rewards for right persons
23) What challenges do you think might face the establishment of a PMO within the Public Corporation for Housing?	Routine, intolerance	Resistance to change and fear of its implementation	Departments not adopting it, Not understanding officials	claim not to be needed	Needs support from management and a lot of training and new procedures	Resistance to change

	20) What are the main challenges facing the General Establishment of Housing In the field of (Land acquisition, studies and design, supervision)?
1	1) In supervision: the lack of previous experience benefiting new engineers. 2) Most of the officials were technical observers, not engineers. 3) The schedule is not adhered to and projects are delayed. 4) The break in the relationship between the supervisor and the study body.
2	1) There is no unified methodology in project management. 2) Routine and bureaucracy. 3) Poor project management. 4) Lack of cooperation between different disciplines, which may result in re-scheduling. 5) The break in the relationship between the supervisor and the study body.
3	1) difficulty in land acquisition procedures, lack of facilities from other public authorities, and other problems such as the presence of land occupants that impede the speedy completion of expropriation. 2) Spreads are a big problem 3) Weakness in some departments and fear of competition. 4) Routine and correspondence hierarchy hinders the speed of achievement. 5) Issuance of statements and change orders takes a long time and causes delays in projects. 6) Lack of staff and lack of follow-up. 7) Job neglect. 8) Initiatives are not met with enthusiasm or encouragement.
4	1) Routine and correspondence hierarchy. 2) There is no job support to motivate employees. 3) Initiatives are not met with enthusiasm or encouragement. 4) The break in the relationship between the supervisor and the study body.

5	1) Non-compliance with the time plan and no project management software.
	2) Lack of qualified cadres, competencies and specializations.
	3) Price differences and material shortages.
	4) Issuance of statements and change orders takes a long time and causes delays in projects.
	5) Despite the availability of an electronic messaging system, the lack of network and fuel hinders communication
	6) The supervision team is responsible for a large number of projects, which reduces the quality of work
6	1) Shortage of competencies, competencies and employees.
	2) One person performs several job tasks together
	3) Restriction in procedures