Framework for the implementation of knowledge management (KM) processes and components at various maturity levels of Project Management Offices (PMOs)

Maturity levels of PMO	PMO Functions to Encourage and Support KM Processes and Practices at different maturity levels
Level 0	**The effective roles of KM to organisational learning (OL)**
Primitive Phase **Developing/Initial** ➢ Individualised approaches to knowledge management using lesson learnt mentality – no organization interface ➢ No-PMO or effective tools to achieve practices ➢ No formal PM processes exist across the organization ➢ Organisation is aware of and has intention to manage its organisational knowledge but it might not know how to do so	➢ **Development of KM to support the development of OL:** The greater the interest in knowledge management processes, the more mature the company becomes. Knowledge management objectives can be achieved in a short time but achieving organizational learning goals needs more time. ➢ **Development of KM to support the development of OL:** The greater the interest in knowledge management processes, the more mature the company becomes. Knowledge management objectives can be achieved in a short time but achieving organizational learning goals needs more time. ➢ **Learning is based acquiring knowledge:** Knowledge management is a good factor to gain the best lessons and experiences. Learning is based on acquiring knowledge and developing appropriate processes to maximize their utilization. ➢ **Peoples' knowledge is important for OL:** Knowledge management helps to care for people and their role is effective in increasing the maturity of the company. Knowledge management through the mechanism of its work to benefit from previous experiences and knowledge gained and different information contribute to increase the level of learning and maturity in the company. ➢ **KM achievement for OL:** The constant change and stay in the competition reflect learning styles, as well as lessons learned to facilitate the implementation of future projects and meet challenges. Increased transparency, availability and accessibility of information, teamwork and continuous communication are all positive impacts that contribute to organizational education.
Level 1	**PMO group possible solutions/options for encouraging KM implementation**
Center of Excellence PMOs **Supportive PMO** **Defined/Developed** **Project/Organisation Level** ➢ Provide the organisation with methodologies, standards, and tools to enable project teams and PMs to deliver project successfully ➢ To provide training and coaching and supporting the improvement of PMs and project teams ➢ Rising serve as a project repository and lessons learned ➢ Provide project related services or to support specific purpose ➢ To provide a consultative role to projects ➢ To set up and develop PM function within the organization ➢ Provides support and assistance when needed. Provide best practices and ideas to correct defects and achieve best results ➢ A group of experts working as a support and linking between the top management and various projects ➢ To initiate and increase KM awareness's and developing basic PM practices in the PMO ➢ To define the concept of KM in practice ➢ To develop Intranet and any types of networks in organization ➢ To develop community of practices	➢ **Build organisational memory:** Storing best practices and maintain previous experiences to be used in future projects. ➢ **Developing individuals' skills:** PMO contributes to the development of skills in individuals by mixing experts with fresh graduates employees. ➢ **Increase the outcome of creativity:** Motivate employees to come up by new ideas and initiatives that can contribute for increasing business performance. ➢ **Managing KM processes:** The dissemination of useful ideas, facilitate more effective cooperative processes, ensure continued knowledge acquisition and organizational learning. ➢ **Providing training and coaching:** It is possible to activate the role of the Center of Excellence PMO in providing training courses. ➢ **Rising awareness among people:** Contributing to raising awareness among people of the importance of the existence of this concept and that if implemented effectively will lead to the acquisition of knowledge and thus reflected on the success of the system in general. ➢ **Sending employees to different workshop:** The role of PMO is noticeable in providing great support in sending administrative competencies to develop them and to attract qualified competencies. ➢ **The development of standards, regulations, and practices:** The existence of a known support center by all parties that contributes to the development of standards, regulations and practices of the company.
Level 2	**PMO department possible solutions/options for encouraging KM implementation**
PMO Department **Controlling PMO** **Managed/Monitor** **Organisational Unit PMO/Divisional PMO** **Departmental Level** ➢ Provide control for business services or units ➢ To integrate PM with the organisational goals and strategies ➢ To adopt PM framework or methodologies ➢ To apply specific templates, forms, and tools ➢ Link project management practices to trade ➢ Provides appropriate reports on the status of different projects ➢ To manage project's knowledge in the PMO and integrating KM with organizational strategy ➢ To establish a unit to take the responsibility and accountability of KM ➢ To provide systematic for supporting KM ➢ To establish and develop standard for KM ➢ To develop KM sub processes	➢ **Spread KM culture:** To maximize knowledge management and disseminate its culture and provide developmental and cultural programs to share experiences. ➢ **Relay more on human activity:** PMO's contribution is to rely on human activity to generate more knowledge than to rely on computer usage and communication links may not be effective. ➢ **Link KM to specific system:** The contribution of PMO is to develop an effective knowledge management system that not only involves the use of technology factors but also links the employees of the organization and connects them with experts in the same field. ➢ **Qualify project managers and project teams:** Prepare a plan to send employees to gain knowledge and experience. ➢ **Provide healthy working environment:** investing optimally in creating an appropriate working environment.
Level 3	**PMO office possible solutions/options for encouraging KM implementation**
PMO Office **Directive PMO** **Optimised/ Strategic** **Regional or Centralised** **Enterprise Level** ➢ To provide directive roles to align projects and organisations units to corporate strategy and ensuring appropriate enterprise governance ➢ To lead all the activities and procedures to enable the operation of common standards of PM within all projects that undertaken by the organisation ➢ To insure all PM practices are applied across the entire organisation ➢ Effective strategies and continuous development of practices that suit the way the firm works ➢ An effective leadership role in guiding projects with unlimited powers and responsibilities ➢ To optimize the KM system in the PMO ➢ To Put control in place for all KM processes and activities ➢ To integrating the KM processes and procedures ➢ To continuously improving the KM processes and procedures	➢ **Send employees to acquire knowledge:** Employees are sent to many workshops and conferences, both internally and externally according to the needs of the work. ➢ **Provide effective programs:** Providing effective internal programs and courses offered by specialists in many fields. ➢ **Center of excellence:** Working as a learning center where the company can achieve best practices, transfer experiences and provide full support. ➢ **Support project managers:** Develop their abilities and skills and work on them to be used optimally in the management and development of the projects they are working on. ➢ **Develop strategic plan:** to increase the office's tasks and prepare it for ongoing training sessions. ➢ **Optimizing the working environment:** To find a suitable environment through which all members of the team and department managers can participate in achieving the objectives of the company ➢ **Apply new policies and roles:** To enforce the policies of the office to maintain valuable knowledge.

Source: Alqahtani, A. (2019). An appraisal of the role of Project Management Offices (PMO) in promoting Knowledge Management (KM) within KSA construction companies. University of Salford (United Kingdom).

Maturity levels of PMO	Key Factors of KM Implementation via PMO	PMO Functions to Encourage and Support KM Processes and Practices at different maturity levels			

Level 0

	Processes	Knowledge Creation	Knowledge Sharing	Knowledge Application	Knowledge Capturing
No-PMO **Primitive Phase** **Developing/Initial** ➢ Individualised approaches to knowledge management using lesson learnt mentality – no organisation interface ➢ No-PMO or effective tools to achieve practices ➢ No formal PM processes exist across the organization ➢ Organisation is aware of and has intention to manage its organisational knowledge but it might not know how to do so	**In general:** Little or no intention to formally manage organisational knowledge	❑ Organisation and its people are not aware of the need to formally manage its knowledge resources ❑ No formal processes to create, share and apply organisational knowledge ❑ No specific KM technology or infrastructure in place ❑ At this stage required preparation works are undertaken and KM processes and practices should be defined and planned ❑ PMO in this level not aware for the important of managing project knowledge			
	Initial activities and/or enablers of KM:	❑ Management is aware of the need for formal KM, therefore there is a need to prepare and plan the different processes and component of KM ❑ SWOT analysis, Feasibility study and requirements analysis need to consider the role of PMO in developing KM ❑ Knowledge indispensable for per- forming routine task is documented and the current difficulties and challenges of KM should be defined ❑ Organisations should undertake some basic practices to asses the initial response by PMs and project teams			
	Current KM Practices	▪ **Contributed to the creation of wrong decisions:** Do not take advantage of previous knowledge. ▪ **Awareness and attention are missing:** For contributing in knowledge management practices. ▪ **There is a lack of interest by people:** In the importance of transferring their experiences to others. ▪ **Weak qualification of the company:** Ineffective competitive advantage.	▪ **Personal judgement:** Much of the knowledge is published only by personal judgment or not properly conveyed to decision makers because of the lack of incentives and initiatives to transfer knowledge. ▪ **Effect the speedy and availability of knowledge:** Take a long time to find the people concerned and then transferred to the beneficiary or the transfer of knowledge is only when needed.	▪ **Lessons learnt missing:** After the completion of the projects, not all activities are documented. ▪ **The maturity of the organisation not developing:** there are not many initiatives to apply knowledge or using valuable knowledge for the change of existing policies.	▪ **Loss of valuable knowledge:** Professional knowledge from specialists in different areas not acquired correctly. Most staff from American and European countries when they left, organization encountered great difficulties and losing important knowledge. ▪ **Essay to access by competitors:** There are no specific initiatives to acquire daily knowledge and then classify it to make it difficult to imitate by competitors.

The effective roles of KM to organisational learning (OL)	Perspectives	Organisational Structure and the Creation of Knowledge	Organisational Culture and the Sharing of Knowledge	Human Resource Management and the Application of Knowledge	Competitive Advantage and the Capturing of Knowledge
➢ **Development of KM to support the development of OL:** The greater the interest in knowledge management processes, the more mature the company becomes. Knowledge management objectives can be achieved in a short time but achieving organizational learning goals needs more time. ➢ **Development of KM to support the development of OL:** The greater the interest in knowledge management processes, the more mature the company becomes. Knowledge management objectives can be achieved in a short time but achieving organizational learning goals needs more time. ➢ **Learning is based acquiring knowledge:** Knowledge management is a good factor to gain the best lessons and experiences. Learning is based on acquiring knowledge and developing appropriate processes to maximize their utilization. ➢ **Peoples' knowledge is important for OL:** Knowledge management helps to care for people and their role is effective in increasing the maturity of the company. Knowledge management through the mechanism of its work to benefit from previous experiences and knowledge gained and different information contribute to increase the level of learning and maturity in the company. ➢ **KM achievement for OL:** The constant change and stay in the competition reflect learning styles, as well as lessons learned to facilitate the implementation of future projects and meet challenges. Increased transparency, availability and accessibility of information, teamwork and continuous communication are all positive impacts that contribute to organisational education.	Perspectives necessary for facilitating KM implementation	▪ **There is no specific department or group of people are responsible for managing and collecting best practices:** A responsible entity should be identified for the knowledge lifecycle, both in the projects being implemented and in the administrative work in the head office. ▪ **A clear structure to create knowledge does not exist:** The activation of the role of senior management should be defined in promoting the creation of knowledge. ▪ **The role of project manager should contribute to motivate team members:** To share their experiences, maximize knowledge and have beneficial returns for everyone.	▪ **Common language not effective:** The majority of staff in construction have different language of communication according to their nationalities and cultures. ▪ **Communication and coordination missing:** Organisation needs to have a unified methodology or effective management of communication and coordination. ▪ **Different nationalities and cultures not considered:** The majority of staff in construction come from different nationalities and their cultures, attitudes, and behaves are different than the local employees. ▪ **Not properly supported the awareness of people to share their knowledge:** Many of the employees in the project are not developing their performance and activating their role and importance in the constructive cooperation that serves the entire of the company.	▪ **Communication between projects and HR missing:** Without a clear presence of a department or group to support knowledge management, human resources management should be involved and must be able to make use of knowledge. ▪ **Knowledge not organised and supported:** The large number of responsibilities and the lack of support for human resources management limit the appropriate sharing of valuable knowledge. ▪ **Knowledge practices not documented:** Availability, empowerment, time factor, people's ability, awareness, loyalty and dedication to work are of paramount importance in defining the role of human resources management in the application and reuse of valuable knowledge, information and experiences. ▪ **There is no formal initiatives:** Organisation must ensure valuable knowledge are in place by provide training, launch initiatives and develop incentives.	▪ **Attracting competencies not effective:** The optimal acquisition of knowledge is the acquisition of competencies as the long-term survival of the employees with the company, this gave an indication that the company's environment is valid and that it remains committed to the rules of competition. ▪ **Provide training programs missing:** Organisation needs to provide training programs and support the rehabilitation of current employees. ▪ **Classify knowledge not exist:** knowledge should be classified for optimal acquisition. ▪ **Protection of knowledge:** Effective modern systems, processes and practices must be in place to help make it difficult to transport them outside the company. ▪ **Governance:** Competitive advantage is based on the presence of strong governance in the company, which enabling the organisation to know the relationships and tasks between the departments and projects and how to successfully manage internal and external operations.

Level 1

	Processes	Knowledge Creation	Knowledge Sharing	Knowledge Application	Knowledge Capturing
Center of Excellence PMOs **Supportive PMO** **Defined/Developed** **Project/Organisation Level** **Low-Level** ➢ Provide the organisation with methodologies, standards, and tools to enable project teams and PMs to deliver project successfully ➢ To provide training and coaching and supporting the improvement of PMs and project teams ➢ To serve as a project repository and lessons learned ➢ Provide project related services or to support specific purpose ➢ To provide a consultative role to projects ➢ To set up and develop PM function within the organization ➢ Provides support and assistance when needed. Provide best practices and ideas to correct defects and achieve best results ➢ A group of experts working as a support and linking between the top management and various projects ➢ To initiate and increase KM awareness's and developing basic PM practices in the PMO ➢ To define the concept of KM in practice ➢ To develop Intranet and any types of networks in organization ➢ To develop community of practices	**In general:** Adapted based on KM maturity model (Feng, 2006)	❑ Valuing knowledge creation ❑ Respecting to the originality of Knowledge ❑ Learning tool ❑ Plot assistant design ❑ Simulation Software ❑ Brain and thinking support systems	❑ Facilitating informal communication ❑ Electronic notice board ❑ Video Conference meeting ❑ Email and Chat room	❑ Developing process to reuse existing knowledge ❑ Interface design	❑ Developing K. documentation ❑ Developing repository systems ❑ Electronic notice board ❑ Document edit ❑ Database
	KM processes and their implementation via PMO Center of Excellence	**Internal processes:** ▪ Creating knowledge must receive the absolute support of the PMO group and can be done through internal processes such as market research and knowledge of previous experiences or by learning the experiences of others in the same field. ▪ The role of PMO team members in recruiting talent or retaining managerial competencies helps to create new knowledge and activate existing knowledge. ▪ The role of PMO contributes to the creation of a set of approved measures that can be directed to decisions, procedures and practices to increase the future success of the company. ▪ PMO group contributes to supporting knowledge management objectives and documenting individual and group activities. ▪ The role of PMO should consider previous knowledge and use it to help acquire new. ▪ Supporting the initiative with proposals and presentations and presenting views and experiences that are important in the development of the organization's environment. **External processes:** ▪ The external processes in terms of developing the competence and skill of the staff and the request of experts and specialists and the work of meetings and workshops to maximize the creation of knowledge and activate its role. ▪ PMO group seeks to provide the necessary capabilities and capabilities to activate the efficiency of knowledge.	**Increase awareness among people:** ▪ Increasing awareness among people of the importance of sharing knowledge can maximize its important and success. **Appropriate rewards and incentives:** ▪ The spread of knowledge can be through developing appropriate rewards and incentives by PMO center of excellence. **Convert tacit into explicit knowledge:** ▪ Members of the PMO team must be qualified to transfer knowledge and create practices to participate as well as develop effective systems from time to time to keep abreast of the pace of transformation in the construction sector. ▪ The role of PMO in the transfer of implicit and explicit knowledge efficiently generates an important return for the company. **Flexibility (Formal & Informal):** ▪ There should be a high speed in the transfer of knowledge, especially between projects and senior management, in order to maintain the safe transfer of knowledge. ▪ Knowledge distribution channels are either formal such as training sessions, inter-departmental communication, projects and communication between the staff. Or be informal such as initiatives, debates and periodic meetings. ▪ The role of PMO must be effective in ensuring that knowledge is provided and accessible when needed as well as to ensure that such knowledge reaches as many people as possible.	**Storing knowledge:** ▪ The role and contribution of PMO in applying some of the knowledge learned to increase the enthusiasm of staff that their expertise and information will be applied as a priority. **Best practices:** ▪ The knowledge application is increasing the validity of the PMO. If there are no absolute powers or overlap of responsibilities, there is difficulty in applying knowledge. **Knowledge access:** ▪ There is great importance in storing knowledge, using effective practices or using modern technology factors to make research and knowledge access easy. **Modern technology:** ▪ Link knowledge application with financial incentive systems and employee performance assessment. ▪ Knowledge is applied through the transformation of knowledge into operational processes.	**Internal processes:** ▪ To determine the mechanism of acquisition of knowledge and who are the people concerned to take this responsibility, the rehabilitation of practices and the identification of practices. ▪ Members of the PMO group have the authority to obtain any information about the status of the projects or to know what risks are likely to occur. ▪ PMO is a key to managing knowledge and defining the form of operations and their plan of action. ▪ Acquiring knowledge is through the PMO Group by raising awareness, providing means and clarifying the way to obtain information and knowledge. ▪ Acquire knowledge from different sources, internally such as repositories of knowledge, discussion and communication between departments and projects. ▪ PMO group should be responsible for the classification of knowledge types within the organization: for example, the knowledge of customers, the state of the market, the work carried out and then work to determine their importance to the organisation. **External processes:** ▪ PMO group should be responsible for encouraging the participation of conferences and workshops, attracting qualified staff and qualifying existing staff by providing suitable training courses and coaching sessions.

PMO Centre of Excellence possible solutions/options for encouraging KM implementation	Perspectives	Organisational Structure and the Creation of Knowledge	Organisational Culture and the Sharing of Knowledge	Human Resource Management and the Application of Knowledge	Competitive Advantage and the Capturing of Knowledge
➢ **Build organisational memory:** Storing best practices and maintain previous experiences to be used in future projects. ➢ **Developing individuals' skills:** PMO contributes to the development of skills in individuals by mixing experts with fresh graduates employees. ➢ **Increase the outcome of creativity:** Motivate employees to come up by new ideas and initiatives that can contribute for increasing business performance. ➢ **Managing KM processes:** The dissemination of useful ideas, facilitate more effective cooperative processes, ensure continued knowledge acquisition and organizational learning. ➢ **Providing training and coaching:** It is possible to activate the role of the Center of Excellence PMO in providing training courses. ➢ **Rising awareness among people:** Contributing to raising awareness among people of the importance of the existence of this concept and that if implemented effectively will lead to the acquisition of knowledge and thus reflected on the success of the system in general. ➢ **Sending employees to different workshop:** The role of PMO is noticeable in providing great support in sending administrative competencies to develop them and to attract qualified competencies. ➢ **The development of standards, regulations, and practices:** The existence of a known support center by all parties that contributes to the development of standards, regulations and practices of the company.	Perspectives necessary for facilitating KM implementation via PMO Center of Excellence	**Approval or rejection with appropriate recommendation:** ▪ The concept of PMO works to turn the life of the demand from one hand to another and then resubmit the application with approval or rejection with the appropriate recommendations. A large number of knowledges are created and organisation needs to have a mechanism or a detailed structure of knowledge rotation. **Linking different projects and departments:** ▪ The PMO group should have a detailed structure for the performance of the work of the knowledge management process and who are the people concerned and what means will be used and what is the importance of managing this knowledge to the people and the interest of the company as an entity. **Knowledge rotation:** ▪ PMO's role is to create an organizational structure that promotes knowledge exchange among different units and that knowledge is not created in places and is blocked elsewhere. ▪ PMO Group in the structure of the company are supportive and advisory, which working to restructure the company in line with the information and knowledge of the internal and external activities.	**Regulatory framework:** ▪ The role of PMO helps to spread a single regulatory framework, which reduces the resort to always more severe measures. **Standards and policies:** ▪ The role of PMO should consider 3 fundamentals in achieving organisational culture: values - standards - practices. **Teamwork and collaboration:** ▪ PMO team members and project managers should be aware of their role in promoting knowledge transfer. ▪ Understand the importance of the role of PMO team members in supporting best practices and promoting teamwork and collaboration. ▪ Understand the importance of knowledge sharing and how it helps to develop the maturity of the company and how it is reflected in ensuring individuals for their jobs and the possibility to develop their skills and achieve their goals.	**Guide HR to select the right training:** ▪ The PMO team should support human resources management and guide them on the quality of training programs that the company really needs. **Linking staff with firms' strategies:** ▪ The PMO's role is to educate, motivate and equip employees to take advantage of technology in acquired knowledge or through a good knowledge of practices. **Recommendation:** ▪ Informing leading employees to maximize the role of knowledge and loyalty of employees in the development of company strategies. ▪ PMO's role in prioritizing the company in acquiring business that meets the stakeholders' orientations. **Clarify duplication and overlapping of powers:** ▪ There is a direct relationship to the role of human resources and PMO, but the responsibilities of each party must be determined so that there is no duplication or overlapping of powers. ▪ Clarify what processes and practices should be changed or developed according to the market situation.	**Lessons learnt:** ▪ PMO should act quickly to acquire knowledge from current staff and knowledge from competitors in the field. ▪ Speed in doing business by taking advantage of previous experiences and knowledge. **Protection of knowledge:** ▪ To monitor business on a continuous basis and not to allow competitors to benefit from hiring employees and transfer their valuable knowledge. **Balancing resources:** ▪ The provision of appropriate means and the distribution of resources based on good knowledge in terms of the need for different organisation's projects.

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Maturity levels of PMO	Key Factors of KM Implementation via PMO	PMO Functions to Encourage and Support KM Processes and Practices at different maturity levels			
Level 2	**Processes**	**Knowledge Creation**	**Knowledge Sharing**	**Knowledge Application**	**Knowledge Capturing**
PMO Department **Controlling PMO** **Managed/Monitor** **Organisational Unit PMO/Divisional PMO** **Departmental Level** **Moderate-Level** ➤ Provide control for business services or units ➤ To integrate PM with the organisational goals and strategies ➤ To adopt PM framework or methodologies ➤ To apply specific templates, forms, and tools ➤ Link project management practices to trade ➤ Provides appropriate reports on the status of different projects ➤ To manage project's knowledge in the PMO and integrating KM with organizational strategy ➤ To establish a unit to take the responsibility and accountability of KM ➤ To provide systematic for supporting KM ➤ To establish and develop standard for KM ➤ To develop KM sub processes	**In general:** Adapted based on KM maturity model (Feng, 2006)	☐ Developing knowledge creation strategies ☐ Establishing formal knowledge creation ☐ Data mining ☐ Documentation Search ☐ Knowledge detection tools ☐ Idea implement assistant tools ☐ Case-based reasoning systems ☐ Pattern simulation	☐ Establishing and developing formal channels for sharing knowledge ☐ Education and Training ☐ Enhancing the security of knowledge sharing ☐ Search engine ☐ Knowledge list ☐ Knowledge map ☐ Content-based original Search ☐ Online learning systems Expert yellow page ☐ Expert training systems ☐ Seminar and workshops	☐ Developing systems to support knowledge application ☐ Dividing the work areas to related functions ☐ Expert systems ☐ Work process systems ☐ Online prompt analysis ☐ Decision support systems	☐ Developing processes for refining knowledge ☐ Knowledge conformity check ☐ Storing knowledge in suitable place ☐ Data Repository ☐ Data storage ☐ File management systems ☐ Case-based reasoning systems ☐ FAQ ☐ Work process systems ☐ Expert systems
	KM processes and their implementation via PMO Department	**Externalisation:** • Creating knowledge can be gained through the department's role in stimulating research and development, learning lessons and creative thinking. • This process focuses on linking implicit and explicit knowledge. The creation of knowledge takes place through the extraterritorial realization of implicit knowledge to become collective knowledge. • External factors such as interaction with customers, suppliers and stakeholders. **Internalisation:** • The department also develops performance standards to evaluate and document all knowledge processes. **Nonaks' model:** • Knowledge creation initiatives have been designed through the implementation of the SEC1 concept, which reflects processes and practices within and outside the company, as well as assessment of teamwork and knowledge of community coordination and outreach. **Socialisation:** • The role of PMO must be effective in achieving the necessary support. Knowledge creation is built on innovation, invention, initiative and loyalty by employees to create new knowledge that helps develop the system. • The PMO should focus on creating knowledge through practice, teamwork, communication and education. The role of PMO must work to achieve these goals. • Knowledge is created through the use of certain practices such as business monitoring, discussion of activities, analysis of results. **Transformation:** • Knowledge creation is done by transforming knowledge into practices and activities that can be used to maximize the spread of knowledge.	**Communications channels:** • The presence of such knowledge when needed or in future uses determines the role and importance of the PMO's performance in the company. • Effective communication between departments and easy access to knowledge has a positive impact in knowledge transfer. • PMO presence is an important factor in increasing the growth and maximization of knowledge by sharing, communication, exchange of ideas, skills and experiences. **Knowledge content:** • Transferring knowledge can be done by one of the components of knowledge - people, technology or process. • Knowledge transfer can be done informally about the way people interact daily in work environments. • The Department's work on the transfer of knowledge in a timely manner at the appropriate place helps to spread knowledge and increase its importance. **Rewards programs:** • Making knowledge formal, training and continuous development, using effective systems, stimulating the role of consulting, creating opportunities and linking them with bonuses and rewards. **Transformation of knowledge types:** • Overcoming the obstacles that limit the transfer of knowledge, especially in the enterprise environment, the competition is greater and therefore there is difficulty in transferring knowledge. • The role of PMO in the control of administrative regulations and projects can transfers important knowledge to stakeholders and senior management.	**Availability of knowledge:** • The readiness and ease of use of knowledge is what determines the success of knowledge management. • The role of PMO in applying knowledge should be concerned with these processes: 1. Optimal use. 2. Reuse when needed or in new project. 3. Maximize the use of content. **Life-cycle of knowledge:** • PMO must stimulate good knowledge implementation, linking the knowledge management strategy with the corporate strategy as a whole. • PMO department should be the main reference for applying the knowledge and confirming its role and then documenting it • The knowledge map should be started and ends at the PMO department. **Quality of knowledge:** • Urgent solutions to enterprise problems as well as low reliance on experts in the implementation of business, and easy access to accurate information and increase the contribution of people to know the importance of knowledge gives good impressions on the optimal use of knowledge. • Knowledge that cannot be applied or used to solve problems or that do not help to grow and adapt factors is costly and redundant knowledge • PMO's knowledge of the company's corporate objectives, strategies and outlook and its knowledge of current business performance and strengths and weaknesses in the company, through which it can identify what knowledge can be reused and what knowledge is not needed in their application.	**Feedback:** • Setting up a suggestions box, listening to views, stifling the role of people, developing good motivators. **Knowledge classification:** 1- Knowledge of trade: procurement and sales, resource management and strategic plan. 2- Knowledge of techniques: the importance of bringing tools and devices and processes that increase productivity and reduce the effort, time and cost. 3- Product knowledge: product quality, customer satisfaction and price competition. 4- Project management knowledge: Key processes in project management, time management, costs and resources. 5- Knowledge of administrative organizations: the role of communication, coordination and cooperation in the acquisition of knowledge. **Knowledge identification:** • A good background on the company's strategies and the extent to which projects are completed, which can help to choose and identify the appropriate knowledge and how to share them with owners. **Knowledge selection:** • The role of PMO in increasing knowledge readiness for each time and place helps to optimize acquisition of knowledge.
PMO department possible solutions/options for encouraging KM implementation	**Perspectives**	**Organisational Structure and the Creation of Knowledge**	**Organisational Culture and the Sharing of Knowledge**	**Human Resource Management and the Application of Knowledge**	**Competitive Advantage and the Capturing of Knowledge**
➤ **Spread KM culture:** To maximize knowledge management and disseminate its culture and provide developmental and cultural programs to share experiences. ➤ **Relay more on human activity:** PMO's contribution is to rely on human activity to generate more knowledge than to rely on computer usage and communication links may not be effective. ➤ **Link KM to specific system:** The contribution of PMO is to develop an effective knowledge management system that not only involves the use of technology factors but also links the employees of the organization and connects them with experts in the same field. ➤ **Qualify project managers and project teams:** Prepare a plan to send employees to gain knowledge and experience. ➤ **Provide healthy working environment:** investing optimally in creating an appropriate working environment.	**Perspectives necessary for facilitating KM implementation via PMO Department**	**Distribution of responsibility:** • PMO's role is to create a coordination structure that improves the relationship of different organizations units and projects and links them together to achieve company's strategies. **Delegation of authority:** • Organizational structure is the backbone of the organisation and reflects its success from its failure. **Scope of supervision:** • The PMO Division falls under the Senior Management structure as a supporting section.	**Integrated organizational culture:** • A deep understanding by all departments and projects of the culture of the organisation and markets has a good reflection in the transfer of knowledge. **Reward system:** • PMO should increase awareness and educate the staff on the importance of sharing knowledge and link it to reward programs. • The PMO can take on the role of senior management in promoting teamwork to share valuable knowledge. **Staff awareness:** • Before attempting to disseminate a culture of knowledge management and its importance, focus on ensuring that the culture of the PMO concept is well known. Because the role of the PMO department cannot be done if we neglect to spread the culture and importance of this concept. **Exchange of experience:** • The role of the department is now positive in supporting the work as one system working according to specific plans.	☐ Human resources management is not involved in knowledge management with the presence of PMO group in the company	**Categorizing the knowledge:** • Categorizing the knowledge correctly by PMO and determining its type can increase the company position in the market. **The ease, speed, and relevance of knowledge:** • The ease, speed, and relevance of different knowledge to the right people can be used as a competitive advantage.
Level 3	**Processes**	**Knowledge Creation**	**Knowledge Sharing**	**Knowledge Application**	**Knowledge Capturing**
PMO Office **Directive PMO** **Optimised/ Strategic** **Regional or Centralised** **Enterprise Level** **Advanced-Level** ➤ To provide directive roles to align projects and organisations units to corporate strategy and ensuring appropriate enterprise governance ➤ To lead all the activities and procedures to enable the operation of common standards of PM within all projects that undertaken by the organisation ➤ To insure all PM practices are applied across the entire organisation ➤ Effective strategies and continuous development of practices that suit the way the firm works ➤ An effective leadership role in guiding projects with unlimited powers and responsibilities ➤ To optimize the KM system in the PMO ➤ To Put control in place for all KM processes and activities ➤ To integrating the KM processes and procedures ➤ To continuously improving the KM processes and procedures	**In general:** Adapted based on KM maturity model (Feng, 2006)	☐ Developing the knowledge creating sub-processes ☐ Measuring the knowledge creating success	☐ Developing the knowledge sharing sub-processes ☐ Measuring the knowledge sharing success	☐ Developing knowledge app. sub-processes ☐ Measuring the knowledge application success	☐ Developing the K. storage sub-processes ☐ Measuring the K. storage success
	KM processes and their implementation via PMO Office	**Collective processes:** • PMO office by documenting periodic meetings of the work and paying attention to the application of best practices are important factors for creating a suitable environment for knowledge. **External processes:** • The provision of training programs, workshops and the introduction of experts have a positive impact on knowledge creation. • Knowledge about subcontractors is important for the reputation of the organisation, which can be adopted by the PMO office by knowing and evaluating the market situation. **Internal processes:** • The work of permanent research, testing and examination of services are all practices that help to create knowledge as well as create new knowledge by drawing on current knowledge. • PMO should work to document the usefulness of the end of the work, as well as try to reflect these experiences on the creation of new information to be applied in future work. **Social process:** • Official and informal events, recording the experiences and practices of competitors in the same field lead to the emergence of new knowledge. • Periodic initiatives being launched, all aimed at creating the right knowledge at the right time and place.	**Dissemination and sharing of knowledge:** • This can be done through a comprehensive map of knowledge and the dissemination of its culture and its importance among all departments of management and projects. **Organising and coordinating knowledge:** • The role of the Office should not only be to encourage the dissemination and transfer of knowledge but also to identify appropriate processes in organizing and coordinating knowledge priorities. • There is a huge amount of information, many of which can be classified as valuable knowledge or excessive knowledge of the need of the organisation. **Transfer and submission of knowledge:** • This is through the creation of channels of direct and indirect communication between projects. Identify a list of important knowledge. It is also possible for the office to register some public meetings or courses and then publish them using modern means of communication. • The Office's initiative to make periodic meetings could be a good support for knowledge transfer. As well as through daily / weekly / monthly or annual reporting. **Transformation of knowledge types:** • Transformation of explicit and implicit knowledge into knowledge that the company benefits in a simplified and clear way. • The explicit knowledge: the Office shall transfer to individuals. For example, knowing the methods of administrative regulations, the Office is familiar with the new staff, or it is possible for the staff member to correspond to the departments of the office and to ask the question and wait for the response of the Office. • The implicit knowledge: the office must be transferred from individuals or the team to the company's system, for example, technical skills and effective solutions and constructive ideas. The Office records evaluates their applicability and dissemination to meet business needs.	**Adoption and support of knowledge:** • This is done through the management of documents such as periodic reports. • PMO should always tried to apply best practices, whether in project management or knowledge, and to encourage its use in accordance with business needs. **Application and activation of knowledge:** • Through the development of effective systems to control and disseminate knowledge. **Documenting and building databases:** • Documenting and building a database through the office and a static reference helps to increase the success of this process. **Identification of people, tools, and knowledge map:** • The oversight, coordination and operational role of the PMO Office is a key factor in managing the application and reuse of knowledge. Identifying persons responsible for collecting knowledge and information, identifying appropriate tools and systems to ensure the implementation of initiatives, identifying an operational knowledge map that details the details, processes and types of knowledge accurately. **Integration and classification of knowledge:** • This is through the development of a comprehensive map of knowledge and identify similarities and differences through the classification of knowledge by type and use.	**Classification of knowledge:** • By specifying the file management system from the identification of the sender and recipient and the type of knowledge . • The acquisition of knowledge must be built on both internal and external factors to achieve maximum benefit. • The classification of what suits and fits the direction of the company gives a positive impact to the acquisition of knowledge. **Identification of knowledge:** • By identifying experts and giving them the necessary powers. As well as ways of identifying tools and the optimal use of information technology. • There must be specific procedures through which the knowledge is secretly identified and to best acquire the knowledge of qualified personnel before leaving the company walls. **Storage of knowledge:** • By defining the system of controlling and arranging documents through official or informal events, as well as building an integrated database and reference through the Office. • The company must always have effective processes, policies and procedures to stored acquired knowledge and help prevent it and make it more difficult to be transferred to competitors. **Selection of knowledge:** • By defining the system of querying knowledge and repeating questions. • The role of PMO office is should focus on trying to bring or acquire foreign knowledge from other companies in the same field or by taking advantage of the company's current knowledge and turn it into an added value through which the company can increase the success rates.
PMO office possible solutions/options for encouraging KM implementation	**Perspectives**	**Organisational Structure and the Creation of Knowledge**	**Organisational Culture and the Sharing of Knowledge**	**Human Resource Management and the Application of Knowledge**	**Competitive Advantage and the Capturing of Knowledge**
➤ **Send employees to acquire knowledge:** Employees are sent to many workshops and conferences, both internally and externally according to the needs of the work. ➤ **Provide effective programs:** Providing effective internal programs and courses offered by specialists in many fields. ➤ **Center of excellence:** Working as a learning center where the company can achieve best practices, transfer experiences and provide full support. ➤ **Support project managers:** Develop their abilities and skills and work on them to be used optimally in the management and development of the projects they are working on. ➤ **Develop strategic plan:** to increase the office's tasks and prepare it for ongoing training sessions. ➤ **Optimizing the working environment:** To find a suitable environment through which all members of the team and department managers can participate in achieving the objectives of the company ➤ **Apply new policies and roles:** To enforce the policies of the office to maintain valuable knowledge.	**Perspectives necessary for facilitating KM implementation via PMO Office**	**Employees are knowledgeable about their tasks:** • The project-teams are completely aware of their assignments, which given to them in details by the PMO office. **Standardizing reports system:** • Creating the knowledge can be done by receiving periodic or monthly reports from project managers or by sending the assignees by the office to provide the necessary support. **Increase the awareness's of people:** • People by knowing and understanding the value of knowledge for achieving their needs and improving business performance can then participate in its achievement. **Linking PMO structure with different projects:** • The organizational structure of the project is independent but the PMO structure is tied to all the company's projects. **Collective decisions making process:** • Since PMO does not rely on one person or a specific department to implement and manage tasks. The nature of the work of the office depends in its style that the process of making a particular decision must be taken by more than one person and here can create a lot of important knowledge.	**Link projects together:** • The whole enterprise must function as one system bound to specific objectives. Projects should not operate independently of PMO's office or independent of other projects under the umbrella of the company. **Standardization of policies and practices:** • The role of the work of the Office is an alternative to the concept of senior management in a more professional and effective and its focuses on the standardization of polices and various practices. **Increasing the awareness's of project managers:** • PMO Office is the one who communicates directly with project managers on a permanent and continuous basis. The incentives and rewards of knowledge transfer should be introduced in the company's culture via the PMO.	**Developing the HR system:** • Contribution of knowledge in the development of human resources management work system, both within the PMO office or through its presence in the enterprise environment. • The PMO office can help to develop and expand the Human Resources Department, such as the creation of a training and development unit that is concerned with assessing the need for staff to develop their skills and capabilities. **Developing the skills, expertise, and capabilities:** • Contribution of knowledge in developing the skills, expertise and capabilities of the members of the working group. • The PMO concept not only relies on human resources management in knowledge management but relies on all other management departments as well as the knowledge gained from implementing different projects.	**Increase product differentiations:** • The work of the Office mainly to find and apply best practices in project management, create an organized work environment and benefit from investment in knowledge is a key component in achieving competitive advantage. **Evaluate marketing opportunities:** • The role of the office is to evaluate and develop the marketing efficiency of the company or to increase competitive advantages and to create knowledge that will contribute to reduce costs and increase product differentiation, shorten the time factor and distribute the facility effectively. **Provide unique system:** • The company must also work through the Office to have a modern knowledge management system and more complicated to the competition companies to imitate.