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How an Enterprise Project Management Office (EPMO) can enhance organisational performance through the right members?

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Abstract

Project-Based organisations (PBOs) need to keep up with the trends of projects and programmes in changing environments. Large PBOs require an Enterprise Project Management Office (EPMO), as a central independent office, to equip the organisations with appropriate functions and governance, to ensure effective support, and to drive organisational values. This assists them to mature and standardise their frameworks, practices, and tools to achieve more benefits in their defined projects and programmes. Despite the mission of EPMOs to contribute to enabling teams to deliver their objectives successfully and facilitate benefits realisation, they often fail to adhere to their goals and be disestablished. Although choosing the right functions and having the defined responsibilities are the main challenges of EPMOs, few studies suggest how organizations can overcome these challenges. To address this gap in existing knowledge and to provide new insight into EPMO models, this paper contributes to the literature by discussing the influence of EPMOs on organisation performance, and argue the functions and responsibilities required for an effective EPMO.

Keywords: Central Office, Enterprise Project Management Office, Organisational Performance.

Introduction

The number of Project-Based Organisations (PBOs) have increased over time in various industries (Ren et al., 2018). PBOs deliver products, services, or results through projects or programmes, aligning with their organisational strategic goals, to create benefits for stakeholders and organisations (Boh, 2007). The survival and growth of PBOs depend on the successful implementation of their projects/programmes (Backlund & Sundqvist, 2018). Projects/programmes require a temporary team (often from different units/departments in the organisation) with diverse capabilities working together for a limited time (Ajmal & Koskinen, 2008). Since traditional Enterprise, Portfolio, Programme, and Project (EP3) management practices cannot respond rapidly to dynamic environments, the need for a central independent office is significantly emerging in PBOs to adapt to organisational strategy shifts (Aubry et al., 2007; PMI, 2012). This office should support the formation of the EP3 team; provide requirements, processes, tools, and techniques to facilitate defining the right projects/programmes (Hill, 2007), and optimising EP3 management activities to deliver outputs successfully (Thiry & Deguire, 2007); integrate and share knowledge between EP3 units to prevent repeating the same mistakes, duplicating the same activities, and reinventing the wheel (Pemsel & Wiewiora, 2013); and manage performance to make sure that strategic goals are fulfilled through the implementation of EP3 management efficiently (Müller et al., 2019). This central office, under many different names (i.e. Enterprise Project Management Office, Project Portfolio Management Office, Programme Management Office, Project Management Office), has different types and structures based on their position in organisations (i.e. enterprise, portfolio, programme, project) (Patel et al., 2012), range of responsibilities and services (i.e. supportive, controlling, directive) (PMI, 2017a), and life spans (temporary and permanent) (Axelos, 2013). This office, therefore, has different structure, size, and characteristics. PBOs significantly have been setting up their bespoke central office customising methodologies and standards (Salameh, 2014).

In large PBOs, Enterprise Project Management Office (EPMO) is the central office that performs the aforementioned duties. EPMO Managers work closely with other managers (i.e. portfolio, programme, project managers) (Rad, P & Levin, 2007) and key stakeholders to ensure effective support and performance to realise benefits and drive values (Aubry, 2015). Beside capabilities and mindset of PBOs (i.e. useful processes, tools and techniques), EPMO members play an important role to increase their performance or efficiency. An EPMO can enhance delivery performance in PBOs, through the right team members. The skills, knowledge, and competencies of each functions help to have an effective EPMO (DiTullio, 2010). The Australian Institute of Project Management (AIPM) and KPMG (2018) in their survey stated that 30% of organisations disestablish their PMO during last 2 years. The rates of PMO disestablishment have been reducing but is still high and PMOs continue to fail. Thus, PBOs needs to not only choose the right structure and members with the right knowledge and skills for EPMOs, but also improve their capabilities with dynamic teams. This paper reviewing literature aims to identify the influence of EPMOs on organisation performance, and the characteristics of the right functions and responsibilities of the EPMOs. To achieve these goals, the following questions will be answered: What are types of central offices?; What can EPMOs do to improve organisational performance?; What are the characteristics and responsibilities of each functions in EPMOs?

Central Office Types

Project-Based Organisations (PBOs) set up a central office to increase performance, reduce costs, increase team members' collaboration, facilitate sharing knowledge, and ensure projects/programmes become successful. Project/programme management helps organisations to deliver projects/programmes right (Cooke-Davies, 2004), while portfolio management is about doing the right projects/programmes (Cooke-Davies, T, 2009). Organisations set up a central office to facilitate defining and managing the right projects/programs in the right way with the right team.

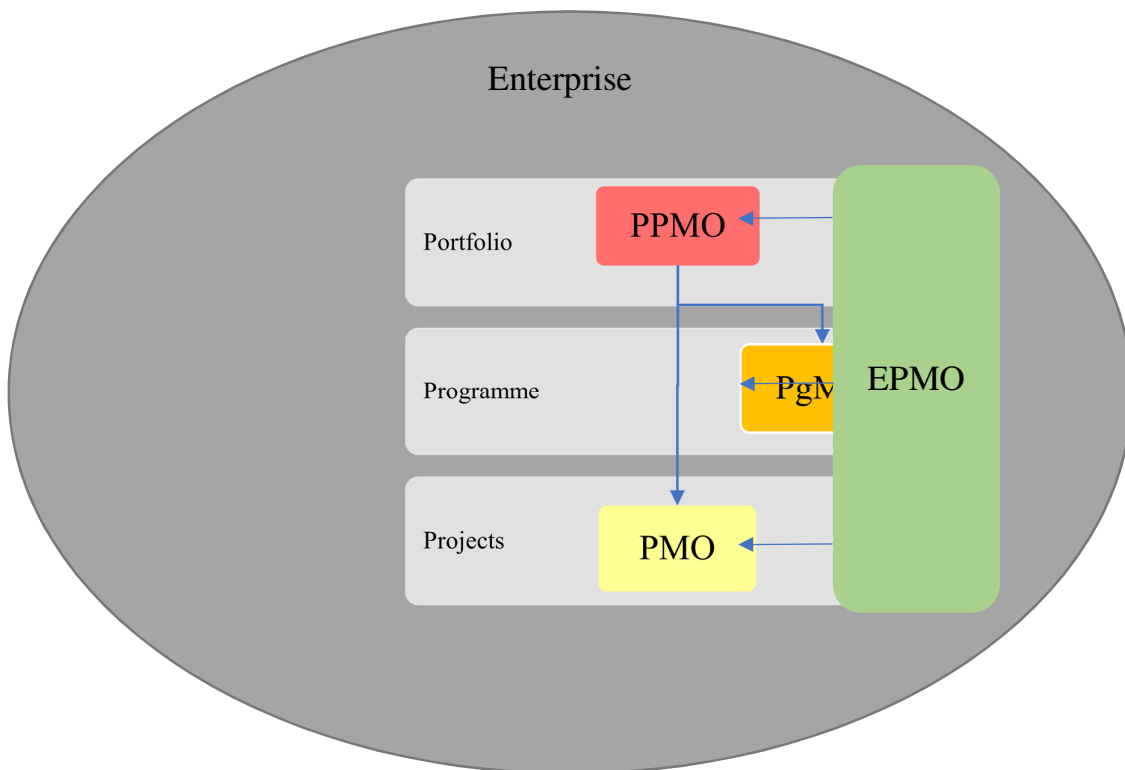**Enterprise Project Management Office (EPMO)**

Figure 1: Structure of Central Offices

Project-Based Organisations (PBOs) seek ways to enhance organisational performance, improve portfolios, programmes, and projects, facilitate information and knowledge sharing, and advance resource management (Spalek, 2013). EPMOs help organisations develop the capabilities to deliver the right projects/programmes successfully and achieve excellent organisation performance by setting standard governance and processes (Dai & Wells, 2004). EPMOs have consolidated their position in today's PBOs and have an impact on not only projects/programmes success but also portfolios management and organisational performance. EPMOs are considered at the executive and managerial level of organisational structure to reach global objectives (Rad, P & Levin, 2006a). EPMOs provide valuable services including: aligning all projects, programmes, and portfolios with strategy and policies; providing standard tools and techniques; implementing and integrating project/program management processes; assessing project/programme progresses and delivering reports; making investment decisions to achieve objectives and strategic values (Mossalam & Arafa, 2016; Salameh, 2014). There is a direct relationship between the maturity of EPMOs and the value

provided for PBOs. Their maturity is achieved by standardising, measuring, controlling, and improving processes continuously (Crawford, JK, 2014). EPMOs focus on standardising processes, improving reporting systems, and setting up managerial dashboard tools (Hill, 2004). EPMOs have direct responsibility for other lower-level of central offices (PPMO, PgMO, PMO) as demonstrated in Figure 1.

Project Portfolio Management Office (PPMO):

PPMOs are responsible for selecting, assessing, prioritising, and monitoring portfolios of projects and programmes (Patanakul, 2015). They manage resources based on their availabilities and projects' priorities. Organisations utilise PPMOs to manage portfolios of projects and programmes simultaneously and improve their return of investment (Martinsuo, 2013). PPMOs are responsible for: decision making based on resources; prioritising and selecting projects and programmes based on business objectives and requirements; planning of strategic portfolios; managing risks; providing progress reports; analysing and improving project portfolio performance; offering project portfolio management methodologies, tools and techniques (Unger et al., 2012).

Programme Management Office (PgMO):

PgMOs focus on benefits management and overall programmes success but PMOs just focus on individual projects' success (Letavec, 2006). The PgMOs protect programmes against failures and put them on the right way based on internal and external clients' needs (Aubry & Hobbs, 2010). PgMOs duties include: defining principles and responsibilities; managing communication and making collaboration between related projects and programmes; tailoring processes, tools and techniques; managing programme deliverables to reach objectives; planning and monitoring, and realising programme's benefits; setting key performance measurement methods to assess performance; and managing risks and issues (Mosavi, 2014; Tjahjana et al., 2009).

Project Management Office (PMO):

PMOs based on organisation maturity provides or tailor governance, methodologies, processes, tools and techniques for projects/programmes (Axelos, 2013; Paton & Andrew, 2019). Some important responsibilities of a PMO include: expert mentoring and project management training; defining key performance indicators and key results indicators to measure the performance and analyse projects efficiency; supporting communication; supporting projects based on best practices; providing information to facilitate decision-making; providing quality assurance; collecting and controlling documents and lessons learned; controlling project progresses; and supporting project delivery (Hill, 2007; Lacruz et al., 2019; Sandhu et al., 2019).

The influence of EPMOs on organisation performance

Effective EPMOs boost organisational performance by minimising the likelihood of project/programme failures (Dai & Wells, 2004). They provide support for EP3 units to make sure that strategic objectives are reached and benefits are realised (Ameri & Awad, 2016; Ramani, 2016).

To reach this goal, PBOs need to concern about both short term and long term EPMOs strategy (Spalek, 2013).

EPMOs support all project, programme, portfolio, strategic activities by providing a common approach and governance frameworks, processes, workflows, and form templates (Gurtu, 2010). They introduce associate tools and share lessons learned with team members. Effective EPMOs specify performance standards and KPIs (Rad, P & Levin, 2006a). They coach and monitor EP3 performance and provide performance reports to define improvement points (Anantatmula & Rad, 2013).

They support information management and coordinate communications across all organisation members to speed up knowledge and information exchanges. Building an Information System (IS) helps EPMOs archive and share documents and information and develop and manage data and reports simply (Koh & Crawford, 2012) and effectively. EPMOs use IS to manage changes during project/programme life cycles. IS assist all team members to be aware of performance status in any time they wish (Senior & Copley, 2008). EPMOs monitor EP3 performance and try to do preventive action instead of corrective action. They hold several meetings throughout the life of projects/programmes to get sure that team members are following plans and having high performance (Van Der Linde & Steyn, 2016).

EPMOs set up an effective infrastructure and environment by developing required policies and establishing mechanisms to reach organisational competency and high performance (Williams & Parr, 2004). They facilitate stakeholder management to become sure that all requirements are defined and balanced where there is a conflict (Rad, P & Levin, 2007; Ramani, 2016).

EPMOs provide teambuilding support and facilitate acquiring team by developing procedures helping to form an EPMO team. EPMOs manage the competency and performance of human resources by supporting acquiring and managing EP3 managers and team members (Ramani, 2016). EPMOs should work closely with relevant EP3 members to advise them, make sure that developed processes and tools are used correctly, and provide needs and requirements to achieve organisational goals (Cuthbert, 2012). EPMOs conduct routine reviewing and auditing human resource performance to plan and coordinate trainings as needed (Crawford, J, 2011) and meet Key Performance Indicators (KPIs) (Yeong & Lim, 2011). These trainings enhance team member abilities and upskill them to make the best use of technology to help their organisations achieve their goals, and enhance their performance (Ramani, 2016). They can use motivation and reward systems to encourage team members to enhance day to day effectiveness, collaboration, and performance (Williams & Parr, 2004).

The characteristics of an effective EPMO functions and members

When organisations are implementing an EPMO, there is always a question of functions and capabilities which are required to set up the EPMO successfully (Anantatmula & Rad, 2013). Structuring effective functions and defining the boundaries of EPMOs is key to undertake in the beginning of setting up EPMOs to manage expectations. The structure and function of EPMOs can vary from organisation to organisation and it is based on the expectations and maturity of the organisations. The advanced functions of EPMOs can be Strategic Management; Portfolio Management; Business governance and process analyst; Benefits and value management; Communication and stakeholder management; Information and knowledge management;

Performance management; Finance management; Change management; Resource management; Risk management (Crawford, J, 2011; Gurtu, 2010; Philbin, 2016; PMI, 2013). Table 1 shows effectively and concisely the responsibilities for an effective EPMOs.

Besides designing the right structure and function, a high-performing team (HPT) is essential for successful EPMOs. This HPT is a group of employees with high skills and abilities to interchange their roles. They have clear processes and responsibilities to help members work at their highest standard, make decisions and solve conflicts quickly. HPTs have high level of collaboration, are aligned with a common objective, and clearly understand their contribution to objectives (Bojeun, 2013). HPTs are shaped when EPMO leaders and top managers collect talented people as team members. For EPMOs, they need to recruit talented team members with key skills. Furthermore, members perform in a safe and collaborative environment where they feel secure to express their ideas and share their knowledge with other members (Anantatmula & Rad, 2013). Members can trust their mangers to express their feeling and share opposed views. In EPMOs, team members know how to work together and collaboration is based on quick and fast communication (Metuge, 2015). Everyone in a team has strong collaboration with other members and share their experience with others (Nousala et al., 2009). An effective team distributes information transparently and all members be aware of the latest updates. All members are on the same page and know clearly their responsibilities and goals. A HPT performs their responsibilities to meet stakeholder expectations and needs (Adusumilli, 2011).

One of the main challenges seen by EPMOs is developing qualified members and improving their competency skills. Like other positions in organisations, EPMO team members need to have some special internal personal skills: ability to interact with different organisational levels; build relationships; negotiation; communications; problem solving; presentation; facilitation; flexibility; consultancy; leadership; analytical skills (Ginger Levin & PMP, 2010; Rad, PF & Levin, 2006b). EPMOs identify knowledge and skills and try to hire professional and optimise staffing (McLaren, 2009). Effective EPMOs need to rely on skilled staff to make sure that they can deliver organisational goals. EPMOs support, mentor, and train members to add value to organisations. They assist in identifying proper resources and proper knowledge and skills requirements for team members. EPMOs should be staffed with experienced and skilled people to have reliability and efficiency (Kendall & Rollins, 2003). Sometime they cannot find enough skilled resources and they should train inadequately skilled people. EPMOs with appropriate coaching activities help members to do their best. They facilitate learning and provide training to ensure EPMO objectives are achieved (Salameh, 2014). They concentrate on improving required skills and related software within organisations. EPMOs define and run training plans covering the knowledge of portfolio/programme/project management, the use of tools and processes, and internal personal skills (Kaleshovska, 2014). They work closely with team members to provide ongoing guidance, point out potential problems, and provide continuous improvement (McLaren, 2009). These mentoring and training plans standardise the level of knowledge and skills to enhance performance which results in increasing probability of success.

No	Responsibility	Description	Reference
1	Strategic Management	• Develop strategic plan and tactical master plan • Ensure that portfolios, programmes, and projects are aligned with strategic objectives.	(Crawford, J, 2011; Philbin, 2016; PMI, 2013)
2	Portfolio Management	• Define initiatives and facilitate and support project and programme selection and prioritisation based on strategic plan.	(Crawford, J, 2011; Gurtu, 2010; Philbin, 2016; PMI, 2013)
3	Business governance and process analyst	• Define and implement portfolio, program, and project management governance vertically and horizontally.	(Crawford, J, 2011; Philbin, 2016; PMI, 2013)
4	Benefits and value management	• Ensure that benefits realisation are applied throughout portfolios, programmes, and projects and values are optimised.	(Crawford, J, 2011)
5	Communication and stakeholder management	• Ensure that stakeholder engagement and analysis is undertaken regularly, and communication plan is prepared and implemented.	(PMI, 2013)
6	Information and knowledge management	• Provide collaborative work place and networks of people to share their experiences. • Gather and share all data, information, documents related to portfolios, programmes, and projects. • Record and analyse lessons learned from different levels of organisations to make governance and processes improvements.	(Crawford, J, 2011; Philbin, 2016; PMI, 2013)
7	Performance management	• Increase organisation performance by providing consultancy to improve and maintain processes. • Define and control KPIs to ensure that organisations reach targets. • Provide data and generate reports for different kinds of audiences in different managerial levels.	(Philbin, 2016; PMI, 2013)
8	Finance management	• Establish a professional finance system for portfolios, programmes, and projects to ensure an appropriate funding and effective financial control.	(PMI, 2013)
9	Change management	• Make integrated change control to guarantee the effectiveness of the identifying, monitoring, and delivering	(Philbin, 2016)

		changes process aligned with information system.	
10	Resource management	• Provide the proper skill requirements • Recruit adequate project staff with right skills based on project plan as efficiently as possible. • Conduct performance evaluations. • Training and mentoring. • Conduct motivation and reward system • Managing team conflict	(Crawford, J, 2011; Philbin, 2016; PMI, 2013)
11	Risk management	• Have access to the last updated and reliable information and have appropriate control and response to deal with risks.	(Crawford, J, 2011; Philbin, 2016; PMI, 2013)

Table 1: EPMO Functions and Responsibilities

Conclusion

EPMOs have been setting up in PBOs with different types to advance organisational capabilities in achieving their goals and benefits by building enterprise, portfolio, programme and project level management offices. EPMOs improve organisational performance by developing governance, processes and tools to increase the chance of project/programme successes, and providing support for EP3 units to make sure that strategic objectives are reached and benefits are realised. To reach these goals and enhance organisation performance, EPMOs require to acquire the right teams and support them by providing training to enhance knowledge, skills, and competencies of the team members. Advanced EPMOs responsible for strategic management, portfolio management, business governance and process analyst, benefits and value management, communication and stakeholder management, information and knowledge management, performance management, finance management, change management, resource management, and risk management.

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References

Adusumilli, S. (2011). *IT Strategy & Governance Explained*: IT Strategy.

Ajmal, M. M., & Koskinen, K. U. (2008). Knowledge transfer in project-based organizations: an organizational culture perspective. *Project Management Journal, 39*(1), 7-15.

Ameri, A., &Awad, T. Z. (2016). The Roles of the Project Management Office In The Execution of the Organizations Strategic Plan. Retrieved from https://scholarworks.uaeu.ac.ae/all_dissertations/56

Anantatmula, V., & Rad, P. (2013). *Linkages among project management maturity, PMO, and project success.* Paper presented at the 2013 International Conference on Engineering, Technology and Innovation (ICE) & IEEE International Technology Management Conference.

Aubry, M. (2015). Project Management Office Transformations: Direct and Moderating Effects That Enhance Performance and Maturity. *Project Management Journal, 46*(5), 19-45. doi:10.1002/pmj.21522

Aubry, M., & Hobbs, B. (2010). *Project Management Office (PMO): A Quest for Understanding*.

Aubry, M., Hobbs, B., & Thuillier, D. (2007). A new framework for understanding organisational project management through the PMO. *International Journal of Project Management, 25*(4), 328-336.

Axelos. (2013). *Portfolio, Programme and Project Offices (P3O)*.

Backlund, F., & Sundqvist, E. .(2018)Continuous improvement: challenges for the project-based organization. *International Journal of Quality Reliability Management, 35*(7), 1306-1320.

Boh, W. F. (2007). Mechanisms for sharing knowledge in project-based organizations. *Information organization, 17*(1), 27-58.

Bojeun, M. C. (2013). *Program management leadership: Creating successful team dynamics*: Auerbach Publications.

Cooke-Davies. (2004). *Consistently doing the right projects and doing them right–What metrics do you need*. Paper presented at the PMI Global Congress Proceedings, Prague, Czech Republic. .

Cooke-Davies, T. (2009). Front-end alignment of projects—Doing the right project. In *Making essential choices with scant information* (pp. 106-124): Springer.

Crawford, J. (2011). *The Enterprise PMO as Strategy Execution Office.* Paper presented at the PMI Global Congress, Washington DC, USA.

Crawford, J. K. (2014). *Project management maturity model*: Auerbach Publications.

Cuthbert, A. (2012). The role of the project management office. *PM World Journal, 1*(4).

Dai, C. X., & Wells, W. G. (2004). An exploration of project management office features and their relationship to project performance. *International Journal of Project Management, 22*(7), 523-532.

DiTullio, L. (2010). *Project Team Dynamics: Enhamcing Performance, Improving Results*: Berrett-Koehler Publishers.

Ginger Levin, D., & PMP, P. (2010). *Interpersonal skills for portfolio, program, and project managers*: Berrett-Koehler Publishers.

Gurtu, A. (2010). *Enterprise Project Management*.

Hill, G. M. (2004). Evolving the project management office: a competency continuum. *Information Systems Management, 21*(4), 45-51.

Hill, G. M. (2007). *The complete project management office handbook*: Auerbach Publications.

Kaleshovska, N. (2014). Adopting project management offices to exploit the true benefits of project management. *Економски Развој-Economic Development, 16*(1-2), 151-165.

Kendall, G. I., & Rollins, S. C. (2003). *Advanced project portfolio management and the PMO: multiplying ROI at warp speed*: J. Ross Publishing.

Koh, A., & Crawford, L. (2012). Portfolio management: the Australian experience. *Project Management Journal, 43*(6), 33-42.

KPMG, A. a. (2018). *The state of play in project management*. Retrieved from https://www.aipm.com.au/images/news/report.aspx

Lacruz, A. J., Cunha, E. A., de Moura, R. L., & de Oliveira, M. P. (2019). Project Management Office in the Nongovernmental Organization as a Driver of Sustainable Competitive Advantage: A Dynamic Capabilities Approach. In *Knowledge, Innovation and Sustainable Development in Organizations* (pp. 23-37): Springer.

Letavec, C. J. (2006). *The program management office: establishing, managing and growing the value of a PMO*: J. Ross Publishing.

Martinsuo, M. (2013). Project portfolio management in practice and in context. *International Journal of Project Management, 31*(6), 794-803.

McLaren, S. (2009). *EPMO: A strategic enabler*. Retrieved from

Metuge, E. (2015). *Implementation and Operation of a Enterprise Project Management Office (EPMO* :(*Case study: General Electricity Company of Libya (GECOL)*: GRIN Verlag.

Mosavi, A. (2014). Exploring the roles of portfolio steering committees in project portfolio governance. *International Journal of Project Management, 32*(3), 388-399.

Mossalam, A., &Arafa, M. (2016). The role of project manager in benefits realization management as a project constraint/driver. *HBRC Journal, 12*(3), 305-315.

Müller, R., Drouin, N., & Sankaran, S. (2019). Modeling Organizational Project Management. *Project Management Journal*, 8756972819847876.

Nousala, S., Miles, A., Kilpatrick, B., & Hall, W. P. (2009). Building knowledge sharing communities using team expertise access maps. *International Journal of Business Systems Research, 3*(3), 279-296.

Patanakul, P. (2015). Key attributes of effectiveness in managing project portfolio. *International Journal of Project Management, 33*(5), 1084-1097.

Patel, A., Patel, D., & Patel, D. (2012). Implementation plan of PMO (Project Management Office) over EPMO (Enterprise Project Management Office) for beneficiaries success in todays organizations. *International Journal of Research in Management, 2*(6), 540-549.

Paton, S., & Andrew, B. (2019). The role of the Project Management Office (PMO) in product lifecycle management: A case study in the defence industry. *International Journal of Production Economics, 208*, 43-52.

Pemsel, S., & Wiewiora, A. (2013). Project management office a knowledge broker in project-based organisations. *International Journal of Project Management, 31*(1), 31 ₋42-

Philbin, S. P. (2016). *Exploring the Project Management Office (PMO)–Role, Structure and Processes.* Paper presented at the Proceedings of the International Annual Conference of the American Society for Engineering Management.

PMI. (2012). *The Project Management Office: In Sync with Strategy*

PMI. (2013). *PMO Frameworks*. Retrieved from https://www.pmi.org/-/media/pmi/documents/public/pdf/learning/thought-leadership/pulse/pmo-frameworks.pdf?v=0e51511c-12d6-4afa-bb0d-967c1e82ce71&sc_lang_temp=en

PMI. (2017a). *PMBOK® Guide* (Sixth Edition ed.).

Rad, P., & Levin, G. (2006a). Project management maturity assessment. *AACE International Transactions*, PM61.

Rad, P., & Levin, G. (2007). Project Management Sophistication and EPMO. *AACE International Transactions*, PM81-PM83.

Rad, P. F., & Levin, G. (2006b). *Project portfolio management tools and techniques*: www. iil. com/publishing.

Ramani, S. (2016). *Improving business performance : a project portfolio management approach*. Boca Raton: Boca Raton : CRC Press.

Ren, X., Deng, X., & Liang, L. (2018). Knowledge transfer between projects within project-based organizations: the project nature perspective. *Journal of Knowledge Management, 22*(5), 1082-1103.

Salameh, H. (2014). A framework to establish a project management office. *European Journal of Business Management Decision, 6*(9), 19-26.

Sandhu, M. A., Al Ameri, T. Z., & Wikström, K. (2019). Benchmarking the strategic roles of the project management office (PMO) when developing business ecosystems. *Benchmarking: An International Journal, 26*(2), 452-469.

Senior, A., & Copley, R. (2008). Deploying a new system for recording and managing information during an emergency to aid decision making. *Journal of business continuity emergency planning, 2*(3), 267-280.

Spalek ,S. (2013). Improving industrial engineering performance through a successful project management office. *Inzinerine Ekonomika-Engineering Economics, 24*(2), 88-98.

Thiry, M., & Deguire, M. (2007). Recent developments in project-based organisations. *International Journal of Project Management, 25*(7), 649-658.

Tjahjana, L., PMP, P. D., & Habib, M. (2009). *The program management office advantage: a powerful and centralized way for organizations to manage projects*: AMACOM Div American Mgmt Assn.

Unger, B. N ,.Gemünden, H. G., & Aubry, M. (2012). The three roles of a project portfolio management office: Their impact on portfolio management execution and success. *International Journal of Project Management, 30*(5), 608-620.

Van Der Linde, J., & Steyn, H. (201 ·(6The effect of a Project Management Office on project and organisational performance: A case study. *South African Journal of Industrial Engineering, 27*(1), 151-161.

Williams, D., & Parr, T. (2004). The enterprise programme management office. In *Enterprise Programme Management* (pp. 220-239): Springer.

Yeong, A., & Lim, T. T. (2011). Integrating knowledge management with project management for project success. *Journal of Project, Program & Portfolio Management, 1*(2), 8-19.

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