

SUCCESS FACTORS FOR CREATING A PMO ALIGNED WITH THE OBJECTIVES AND ORGANIZATIONAL STRATEGY

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Abstract— this article deals with how to implement a Project Management Office that is aligned with the objectives and organizational strategy. This study documents the experience provided by the implementation of a PMO at the Department of Technology at the Universidad Técnica Particular de Loja, which methodology for managing projects was evolved from a documented oriented version to a deliverable oriented process. This study highlights the relevant aspects for setting up a functional PMO, which adds value to the organization.

Keywords- *Portfolio Management, Project Management Office, Program Management, PMO Maturity Models, Project Management Process, PMBOK, Prince2, OPM3, P3M3, Measurements, Indicator.*

I. INTRODUCTION

The strategic alignment of IT objectives with business objectives is a topic that is largely debated by various experts on IT, as in [1] Bartolini states that in order to add value to a business it is important to establish conformity with frameworks such as COBIT¹ and SOX². However, the successful aligning of business and IT require a careful consideration of the impact of IT in both processes and results, and vice-versa.

The Project Management Office (PMO) is a key entity for guiding IT projects and obtaining the corresponding indicators. The PMI³, at [2] defines it as an entity that has been assigned various responsibilities related with the coordinated and centralized management of projects that are under its dominion; its main function is to provide support to project managers in various areas such as the managing of shared resources; identifying and developing a project management methodology; establishing best practices and standards for project management; providing consultancy work; monitoring standards, policies and processes via project audits; managing policies, processes, templates and other shared documentation, as well as managing communication for projects.

From the point of view of Enterprise Architecture (EA) the project portfolio management is one of the strategic elements of IT. In [3] Nieman considers the portfolio management necessary but limited in scope. Figure 1 shows an example of

project portfolio management within the strategic dimension of the EA model.

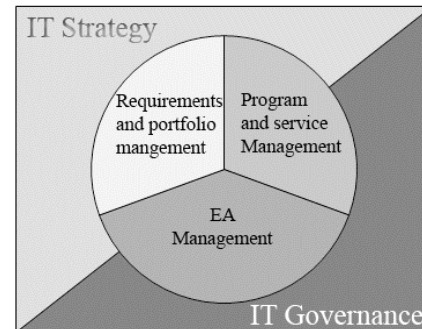


Figure 1. IT Strategy Framework⁴

II. PREVIOUS WORK

A. Business driven IT Management

The definition and the measurement of the level in which the fulfilment of IT objectives support the organizational objectives have led several researchers who was defined a research area known as Business-driven IT Management (BDIM). Bartolini [1] considers this as “the application of a set of models, practices, techniques and tools to map and to quantitatively evaluate interdependencies between business performance and IT solutions”⁵ according to these models, BDIM focuses on two fundamental aspects: an evaluation of the business impact and a prediction of the consequences of the business decisions.

B. Business Driven PMO

Perry [4] ascertains that a successful way of preventing the PMO from failing to align with business objectives and goals is to ignore the traditionally held belief concerning the mission and objectives of the PMO in terms of the PMO models, such as roles and responsibilities or maturity models. Conversely, it requires a new multi-dimensional focus that complements this traditional thought. This change provides a wider perspective, and has a practical application for different types of PMOs.

¹ www.isca.org/cobit

² http://www.deloitte.com/view/en_US/us/About/Investor-Confidence/Sarbanes-Oxley/index.htm

³ Project Management Institute, www.pmi.org

⁴ Nieman, From Enterprise Architecture to IT Governance “Elements of effective IT Management”, pp. 38

⁵ Bartolini C, PHD Thesis, 2009, pp. 11

Consequently, this enables the PMOs to be managed by businesses and geared towards objectives, and proposes a multidimensional model for project management called, MUSIC model.

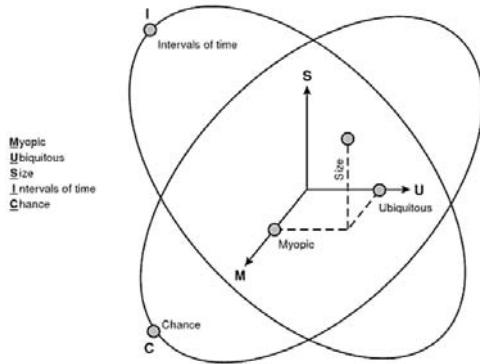


Figure 2. Project Management Music Model⁶

As shown in figure 2, the MUSIC model has three dimensions: Myopic, Ubiquitous, and Size which must be viewed by Intervals of time which is a dimension that refers to behavioural models based on time and phases, which are applicable to the PMO. Three models are presented: maturity models, business, and technology life-cycles. Another dimension considered in music model is Chance which helps us anticipate, understand and mitigate events and unplanned behaviour, which leads to significant decision making.

Another important characteristic of business driven PMOs, is that they should be managed by processes instead of methodologies. According to Perry [4], the main characteristics of a process managed PMO are: results oriented this is the only way of achievement business goals and also the results must be evaluated after the project ends and the purposes for which the project was created are achieved; the focus of the PMO is getting the product, so do not use an excessive number of templates; and finally it is focused on an agile methodology that is continuously renewed, Neville Turbit [5] considers that an agile methodology is not a series of templates, he states that it's a process that needs to be adapted to each situation; the use of tools integrated to process, which enables flexibility, continual renewal and allows the owners of the processes to add value

III. SUCCESS FACTORS FOR CREATING THE PMO

To establish a business driven PMO, it is important to avoid it becomes a simple repository on existing projects, whose members are responsible for promoting templates and documentation. In this way, they are completed by project managers who are responsible for obtaining status indicators. The focus of the project manager, is gathering the project results using a well-managed process, which, in turn, creates indicators that help to respond to questions with clarity, namely

those which are of interest to managers such as: "How much progress have the projects made?" "How much work is left?" "How much money have we spent?" "How much will it cost to complete the project?" The answers to such questions are difficult to obtain if we do not have the correct indicators

As in [6] the PMI defines a deliverable as "any unique and verifiable product, result or capability to perform a service that is produced to complete a process, phase or project"⁷. Estimates of time and resources to complete the work required can be carried out from these deliverables and finally the answers to the pre-set questions tend to be more objective as a result.

The key factors for setting up a business driven PMO described below.

A. Creation of a PMO managed by business objectives

Based on what has already been discussed, the creation of a PMO managed by business objectives should meet certain criteria. These make it dynamic and results-oriented. For this reason, we have developed a 7- step model based on the following actions: See figure 3.

1) Establish the role of the PMO

The implementation of the vertiginous changes at which the businesses are exposed today makes it is necessary the implementation of projects. Moreover, since there are several of them it is important to have a methodology or standard that establishes the business strategy

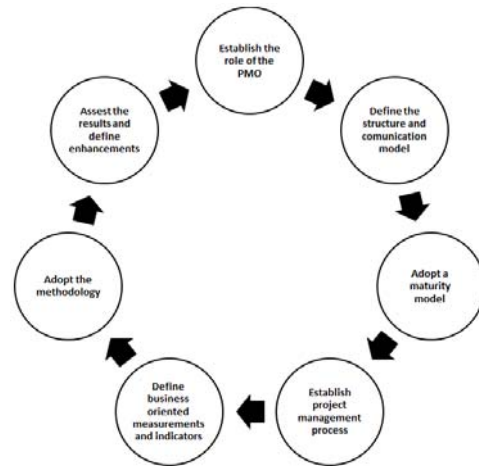


Figure 3. Process for creating and implementing a PMO

At its initial stage, the attempts to establish an office for projects led to the formulation of the documentation. Emphasis was placed on the correct usage of the templates and in obtaining the progress indicators of the projects. However, this practice results in the team moving from an informal model to a formal model with documentation.

⁶ Perry, Business driven PMO setup (2009), pp. 3

⁷ PMI, Practice standard for work breakdown structure(2006) pp. 4

In this sense, the structure and the roles of the PMO should be established based on the characteristics of the organization and that which is expected from human resources. Table 1 show some of the roles that the PMO may undertake based on requirements.

TABLE I. PMO ROLES AND SUPPORT THAT IS OFFERED

Role	Support
Monitoring and control	Control of scope. Follow-up of: chronogram, costs, risks, quality.
Methodology and resources control	Provide processes, templates and tools. Support project managers. Manage resources and guarantee the equal provision of agreements with the organizational priorities
Mentoring and training	Train the project managers in project management practices. Provide training in project management and methodology.
IT governance support and strategic aligning	Validate the aligning of the projects with the business strategy Provide status indicators and use of resources
Value added / benefits	Generate indicators geared toward results obtained-based on business value Ensure that the project results are meaningful and in accordance with the established scope
Manage relations	Multiple Level Communications Center.

2) Establish the structure and communications model.

Now we need to determine a structure that is capable of supporting the established functions. For this reason, it is important to work in three areas: the first area is the team structure of the project. The second factor relates to a project committee, namely the person whom one should report to and the individuals who are responsible for taking decisions with respect to the aligning of projects with business objectives. The third factor refers to the structure of the PMO.

Figure 4 shows a team structure model for working collaboratively in projects. In this sense, each project team has its own participants, manager and program manager.

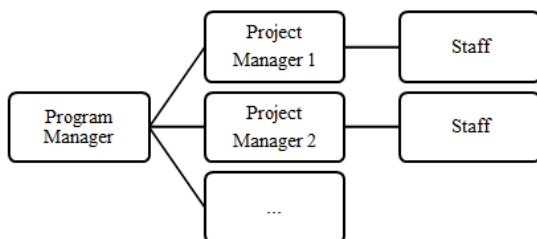


Figure 4. Structure model of the PMO

a) Model and structure of teams

The structure of the teams should consider some important roles supporting the PMO, these are: A Program Manager which acts as a leader who is responsible for supporting one or more business objectives so that he is in charge of various

projects. His main function is prioritizing, creating and accepting projects that support the business goals.

The Project Participants are the people that execute the project. They develop the activities that generate the results. Moreover, they report their progress and risks, as well as document their experiences (case studies) and important events. The information generated by the project participants is evaluated by the project manager and serves as a basis for the development of its activities in the different project management processes that have been adopted.

b) Project Committee

This group is mainly comprised of managers/leaders and officials who are responsible for taking business decisions. Their aim is to guide the work of the PMO and benefit from the information that has been generated by the decision making process. The PMO Manager also forms part of this committee.

c) PMO Team

Based on the assigned roles, the PMO may be comprised of several professionals. Their roles are shown in table II. For the process managed PMO, each function or role is responsible for specific processes, for this reason, the person(s) responsible for these processes have to ensure that the processes are constantly updated.

TABLE II. ROLS & RESPONSIBILITIES OF THE PMO TEAM⁸

Roles	Responsibilities
PMO COORDINATION	Administration of the PMO. Presentation of Progress Reports Coordination of the PMO team Project Committee Member
Tool Management	EPM ⁹ Tool Manager and document repository . Develop and improve tools. Follow up tools and submission of Project reports
Resource Management	Resource Management Allocation of resources and follow-up ¹⁰ . Follow-up of activities and time frames of results - to obtain Project results.
Follow-up Management	Metrics Management to measure the progress and the health of the projects. Follow up of global risks. Follow-up of Global Problems. Budget follow-up. Writing up of Progress Report for Project
Mentoring Management	Socialization of project management process. Creation of policies and processes for projects. Training and Teaching plan in the management of project plans and templates. Improvement of the established plans and organizational templates. Implementation of new plans with the aim of increasing Project management maturity.

⁸ PMO structure version 1 set up at the Technology Dept. at UTPL

⁹ Enterprise Project Management, are integrated tools for portfolio project management.

¹⁰ Depends on whether the authority given to the PMO makes this possible. It may carry out this activity. But it may also provide suggestions thanks to the information t it has access to.

3) Adopt a maturity model

The maturity models are important because they enable the PMO to evolve towards more efficient models with high levels of standardization and continual improvement. One of the most common maturity models is that which is proposed by the CMMI. This model is known for its 5 maturity levels; level 1 refers to the total absence of project management processes. Level 2 is the “planned level” and reflects the application of a non-standard methodology. Level 3 reflects the processes that are promoted by the entire organization, which are supported by formal documentation. Level 4 includes a complete methodology with management metrics and indicators. Level 5 basically refers to the continual improvement process. Fahrenkrog in [7] believes that organizational strategies often fail because they have not been able to demonstrate the ability to implement strategies on a tactical level.

According to OCG¹¹ “The maturity models have become essential tools to evaluate the current ability of the organization. What’s more, they help implement changes and improvements in a structured manner”¹².

OCG proposes an organizational maturity model referred to as P3M3 [8] (Portfolio, Program and Project Management Maturity Model). This model operates in three areas (portfolios, programs and projects) and is focused on 7 business processes: Management Control, Management of Benefits, Financial Management, Stakeholder Engagement, Risk Management, Organizational Governance, and Resource Management (See figure 5).

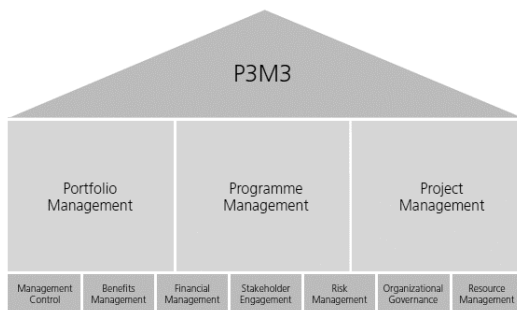


Figure 5. Structure model of the P3M3¹³

In a similar way to CMMI, this model proposes 5 maturity levels that are applicable to the 3 dimensions. These are: 1. Process Knowledge, 2. Repeated Process, 3. Defined Process, 4. Managed process, and, 5. Optimal process.

Another important characteristic of P3M3 is that it operates independently in each model. Therefore, it is possible to find each dimension at the different maturity levels. Moreover, each organization may establish a maturity level that enables it to maximize its financial benefits. It is not always necessary to reach the maximum level of maturity.

¹¹ Office of Government Commerce, UK.

¹² OCG, Introduction and Guide to P3M3, pp. 6

¹³ OCG, Introduction and Guide to P3M3, pp. 9

Another important maturity model is the PMIs OPM3 [9], which can be applied to the entire organization or specific business units. This is comprised of three elements: knowledge, consultancy and improvement. These three elements help to focus on the relationships between the projects and the business strategy.

The OPM3 process model consists of four maturity levels: Standardization, Measurement, Control and Continual Improvement and enables users to evaluate gaps in relation to standards. Based on this information, it can be determined whether it is feasible or not to carry out the improvement plan. This can be done in 6 steps. It starts with the evaluation of the best practices of the organization and terminates when a continual improvement process has been reached.

4) Establish a project management process

In order to set up a PMO, it is important to remember that there are various types of methodologies available. These are applicable to different types of projects. For instance, there are specific methodologies that can be used in fields such as software development. Some common examples are RUP, SCRUM, and XP.

With regard to the generic methodologies that are applicable to various types of projects, we can mention two of that: PRINCE2¹⁴ and PMBOK¹⁵. Both of these methodologies provide time phases and processes for the development of projects. In figure 6, a series of processes for PMBOK is shown. The main characteristic of this model is developing areas of knowledge that are applicable during the different phases of the project.

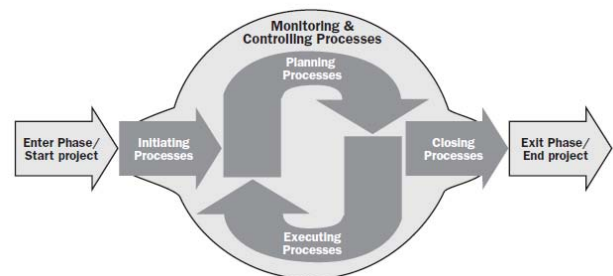


Figure 6. Project Management Process Groups¹⁶

Charvat [10] mentions that the methodological guidelines should not be applied in exactly same way as the other projects. On the contrary, the methodology can be fine-tuned so that it can be adapted to specific situations.

When selecting a methodology, one should take into consideration the size and the complexity of project that is going to be developed. Based on this information, one may opt for a more generic methodology (fewer complexes) that is applicable to small to medium sized projects. Conversely, the

¹⁴ OCG, http://www.ogc.gov.uk/methods_prince_2.asp

¹⁵ Best practices for Project management developed by the Project Management Institute www.pmi.org

¹⁶ PMI, Project management body of knowledge (2008), pp. 40

more complex and developed methodologies can be applied to weightier projects.

When a new methodology is adopted, one runs the risk of focusing on documentation that is, simply filling out lots of templates, thus ignoring the results of the project. Instead of gearing the work towards documentation, it should focus on deliverables and apply the principles of the “agile manifesto”¹⁷. By applying the principles of a less complex methodology i.e. the focus is less on processes and tools, and more on interacting with people. Instead of concentrating on documentation, one should focus on results that work and one’s collaboration with the client. Furthermore, instead of issuing contracts and responding to change prematurely, there should be a plan that is adhered to. This type of focus together with some of the tools and indicators that are normally used in formal methodologies, have enabled us to successfully apply a “methodology oriented towards deliverables” on which the following elements are considered important:

This document establishes the initial scope or parameters of the project, and provides the signatures of approval, namely the IT manager’s and the sponsor’s signatures.

*a) Work Breakdown Structure*¹⁸

This is applied according to the PMI standard for WBS [6]. This process provides a breakdown of the project in terms of deliverables and enables the planning of related activities.

b) Chronogram

Provides details of the activities for the development of the project; it consists of cost estimates and the details of the resources.

c) Resource Plan

Establishes the work units that will be assigned to each resource and the hourly cost.

d) Communications Plan

Defines the interested parties¹⁹ and the level of influence they have on the project. Also, it establishes mechanisms to inform those individuals who are involved in the project.

e) Budget

Establishes the lines of business in terms of financial investment, and states in monetary terms how they are allocated over a specific time frame using an expense plan.

f) Risk Management Plan:

Based on the premise that the project managers work with regard to risks is “to identify and eliminate as many threats as possible and later reduce the negative impacts of the remaining threats in the projects.”²⁰, it is necessary to implement a matrix that provides the evaluation of the

quantitative and qualitative risks and that establishes mitigation and contingency plans.

g) Project Closing Documents

These documents provide the formal closing of the project. It is based on achieving the planned deliverables that is, documenting real figures for costs and time and contrasting these with planned costs.

h) Documenting Lessons Learned

Enables the gathering of information during the execution of the project and its storage in a central repository, which is accessible for future projects.

i) Control of changes

When risks become a reality, or when there are situations that create changes in project scope, costs, time or quality, a process to control change is required. This process should enable adequate decisions to be taken. Moreover, the people involved in the process should also be informed of these changes.

Adopting a project management process proposal of this kind implies the use of practical organizational templates that include both the core aspects of the project and the key results. Moreover, the corresponding follow-up activities should likewise be made clear. Business project management tools are very useful in this sense as they reduce the need for the team players and the members of the PMO to perform operational tasks.

5) Define business oriented measurements and indicators.

The usage of metrics and indicators is essential in determining the performance of projects, programs and also the portfolio. The use of traditional project indicators may show results that do not facilitate decision making. For example, the risk percentages by state in the project portfolio. However, it does not provide answers to certain questions such as: When will there no more risk? How much will it cost? How will the costs impact the project? In this sense, it is better to carry out a quantitative analysis of risks, i.e. whose results can be used to obtain costs and time frames.

Another important example is the percentage of progress and slow activity. Although this is represented by a numerical figure, it does not help to answer questions related to costs and time. Conversely, in a process oriented towards deliverables, the indicators should show how much of the project has been completed, what is lacking, if time and the resources have been used effectively, etc. In table 3, an example of the indicators is shown, which, in accordance with the earned value management theory [11], and enables us to establish the CPI²¹ and SPI²² indexes.

The CPI shows what we have earned financially for each dollar invested in the project until now. In the case of project 501, it shows that we have earned 0.3 dollars for each dollar that was invested. The optimal level is to have 1 or more for the CPI.

¹⁷ <http://www.agilemanifesto.org>, [may 15, 2010]

¹⁸ WBS- Work Breakdown Structure

¹⁹ In the terminology of the project , this refers to Stakeholders

²⁰ Mulcahy, Rita. PM Crash Course for IT Professionals, 2009, pp. 397

²¹ Cost performance index

²² Schedule performance index

TABLE III. PROJECT PORTFOLIO STATUS ACCORDING TO EARNED VALUE MANAGEMENT

ID	CPI	SPI	P. Name	TRIMESTER 01			
				Work Package		Values	
				Planned	Real	Planned (PV)\$	Real (AC)\$
501	0,3	0,6	P. A	5	3	20.000,00	40.000,00
502	1,0	1,0	P. B	20	20	50.000,00	50.000,00
503	0,8	0,8	P. C	5	5	10.000,00	10.000,00

The SPI, on the other hand, enables us to establish a similar figure with regard to time. In the case of project 502, the results are similar in terms of costs and time.

6) Adoption of the methodology

In order to adopt a methodology, it is important to establish real factors that are in accordance with the characteristics of the key players of the project. As an example of the success factors for a satisfactory methodology we can consider: getting an agile methodology which must be applied to any project, using a EPM tool that helps to automatize tasks like reporting and gathering information for project status, work with program managers or intermediate leaders whose are responsible of tracking the project status and provide training for the project participants.

7) Evaluation of results.

The implementation of a methodology is a process that takes time, and it is therefore important to follow closely the process of adoption. Once a specific time frame has been completed, it is possible to evaluate the results and establish which aspects have added value to the business; this evaluation may produce concrete results through the work done by the team players.

B. Definition of a Roadmap.

Another valuable aspect is the sketching out of a roadmap that enables elements to be added on an incremental basis, i.e. to make the PMO more effective. Kendall [13] proposes a plan for the incremental deployment of a PMO, which is based on the PMI model process. As seen on figure 7. It promotes six aspects to PMO which helps us in getting a fully functional PMO.

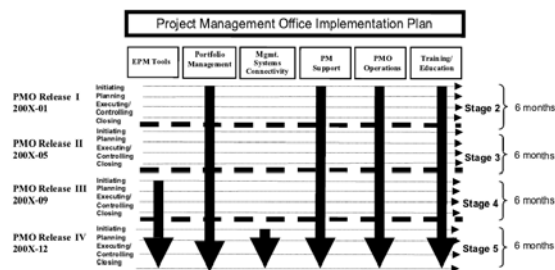


Figure 7. Plan for incremental deployment of a PMO²³

C. Implement a continual improvement process

A continual improvement process based on both the evaluation of results and the improvement opportunities obtained from new experiences or training will enable the PMO to remain feasible over time. For this reason, it is important that it is always aligned with the objectives and organizational strategy.

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²³ Kendall [12] pp. 386