

9th International Conference on Industrial Engineering and Industrial Management
XXI International Conference on Industrial Engineering and Operations Management
International IIE Conference 2015
Aveiro, Portugal. July 6-8, 2015

PMO standardization through Hoshin Kanri

Improving the Management of Projects by Process Management

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Abstract Project management has become more than just a supporting role for businesses. For many organizations, it is a relevant part of getting things done, and the many tasks associated with managing projects require more attention than just the scope of work of individual project management professionals (PMPs). This paper will contribute by showing how through taking standardization as the goal as well as using it internally, the Project management Offices (PMO) will contribute to the maturity level of the organization in terms of project management and increase the sustainability of their business. The core concept of this contribution is the use of Hoshin Kanri (HK) ideas to standardize communication among the process-responsible members at the PMO. Finally, application from a practical point of view is presented and its meaning discussed.

Keywords: Project Management; PMO; Communication Standardization; Maturity Models;

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1 Introduction

Projects have become important instruments for change and development in organizations. There are many approaches to studying project performance but one of the most common is investigation of critical success factors (CSFs) as predictors of performance. For example, Pinto (Pinto, Slevin 1988) identified 10 CSFs, ranging from project mission, top management support, project schedule/plan, client consultation, technical tasks and communication, to personnel recruitment/selection and training. These CSF are quite project-centric but other proposals (Seddon, Calvert & Yang 2010) have promoted other factors that consider not only intra-project aspects but organizational ones. Some authors suggest that the broader utilization of projects requires a new orientation in project management (PM) and a new model for more effective operations in project-driven organizations as presented in reference (Dai, Wells 2004). In spite of the advantages of using the project approach, however, Jessen (Jessen 1993) suggests that because of the one-time nature of projects, an organization may often derive little benefit from previous successes and failures due to a lack of effective knowledge transfer. Improvements are required in order to foster process management to help the project development style; those improvements need to address the lack of knowledge transfer. As previously mentioned, this can be done by means of increasing trust as well as standardization of activities.

Management of project knowledge is a critical factor for project success. In this sense PMO can be seen as a unit within organizations to centrally facilitate, manage and control organizational projects to improve the rate of success. The role of the PMO varies between organizations: it can play a major strategic role while in other organizations it can play a more limited supportive role. Desouza & Evaristo (2006) identify different roles for the PMO, ranging between strategic, tactical and operational. In that sense the research in this paper is focused on the PMO playing the operational role, and in some cases the tactical role, when its focus is on fostering consistent quality of products and services generated by projects.

The latest research studies illustrate that there was an increment estimated at 39% of organizations having PMOs between the years 2000 and 2014 (Research 2015). This jump can be seen as indicating that the importance of the PMO is growing over time. Due to increased interest of developing PMOs, the Project Management Maturity Model (PMM) has been proposed to help develop PMOs gradually (Spalek 2012). The PMM contributes to evolvement of PMO from immature to mature levels through addressing appropriate PM practices. Despite the importance of project knowledge, it has not been extensively investigated in project environments.

The potential is recognized for the PMO to introduce order and systematic view in the front end of innovation projects, which were understood in the past to be the most troublesome and chaotic phase of the innovation process. At the same time, the front end provides the greatest opportunities to improve the overall innovative capability of a company (Artto et al. 2011).

It is also relevant to highlight that the human resource management practices in the project context are still underdeveloped. They have been recognized as a basis for achieving competitive advantage (Yang et al. 2014).

The following areas for improvement are combined in this paper:

- Trust based on standardization of procedures.
- PMO as leader for process standardization both internally and across projects.
- Communication in the project as a key area for improvement.

A strategy for standardizing the inter-process communication at the PMO will extend the maturity of PM across the organization, as well as foster knowledge management in projects. The way of getting this standardization is not just a set of rules but it will be based on a kind of continuous improvement mechanism (Vilalba Díez, Ordieres-Mere 2015).

In an organizational business context as those where the projects grow, with numerous interdependent process owners (POs) acting simultaneously at different levels (tasks, work packages, monitoring, configuration, reporting and so on), a model of the system helps to understand the interactions. In this paper, the organization will be depicted as an oriented network of nodes (POs) connected through arcs which represent structured exchanges of information. This view is compatible with the existing theories of organizational design (Cross et al. 2010). As these environments used to be different and dynamic, such POs need to be aligned towards a common direction (HOSHIN), adding value to the sequence itself.

Furthermore, researchers have argued that not only support of empowerment management systems are necessary, but also alignment with strategic purposes, understood as “compliance with strategic plans and targets” (Cäker, Siverbo 2014). Certain studies (Frow, Marginson & Ogden 2010) show that multiple controls are needed to balance both empowerment of PO and the alignment towards strategic goals. HOSHIN KANRI (HK) (management by giving direction) (Jolayemi 2008) is a comprehensive management system that enables such alignment of complex systems.

Section 2 of this paper will deal with process standardization, knowledge management impact in PM and PMO impact in the PMM in more depth, as well as looking at the relevance of the communication in the PM. In section 3, the proposal of the PMO inter-process standardization of communications mechanism will

be presented and discussed against the common way of looking for maturity through a PMO. Section 4 will present a case study, and finally in section 5 a discussion of the main findings as well as the conclusions will be presented.

2 Literature Review

In the organizational environment, barriers to communication are easily detected and difficult to overcome (Sengupta 2011). The complex nature of communication arises from many factors, such as semantics, power politics, and organizational and technological issues (Easton, Gilchrist & Lenney 2012).

Project communication has been of interest to a number of scholars and practitioners and the bodies of knowledge (BoKs) establish guidelines for communication in projects. The use of BoKs, such as those from PMI and the capability maturity model from (CMM/CMMI) has increased in different projects. Furthermore, efficient performance requires intense and media-rich communication among project stakeholders.

From an organizational perspective, the PMO plays a significant role because its primary function is to develop and monitor compliance with organizational PM methodology (policies, processes, procedures and best practices). The PMO represents a bridge between the organization's strategy and projects. It also coordinates communication across projects and collects data from projects, consolidating them and reporting to internal and external stakeholders (Nahod, Radujković 2013). Desouza & Evaristo (2006) argue that tacit knowledge obtained through projects is difficult to capture. Therefore, it is important to build a bridge between PM and knowledge management, creating collaborative communities for project managers that are centralized through the PMOs.

The success of the formal communication strategy strongly depends on trust (Maurer 2010). Koskinen & Pihlanto (2007) introduce four types of trust for a project setting: deterrence-based trust, role-based trust, knowledge-based trust, and identification-based trust. When properly managed, the PMO approach will foster at least the role-based and the knowledge-based trust. Standardization of formal communication processes will help to increase the identification-based trust and this is one of the more significant aspects of using HK approach. HK as described in HOSHIN KANRI TREE (Villalba Díez, Ordieres-Mere 2015) can be understood as a KPI-driven, behavioral process management method. HK is implemented by standardizing the communication between process owners (POs) through *(CPD)nA*, thus creating an organizational structural network of autonomous agents whose actions are guided by certain strategic goals.

3. PMO inter-process standardization of communications

Standardization practices are not new in project management. They have been reported as relevant to a project's success (Fernandes, Ward & Araújo 2014). This paper will attempt to exploit an opportunity to extend the standardization of processes related to the management of the project (at least those being part of the common knowledge that the company should develop) into the project management daily activities. The goal is to gain an insight into the performance of the projects and also increase the corporate knowledge of the company.

In the rest of this paper, when referring to inter-process standardization the authors shall refer to both PMO internal processes as well as cross-functional processes such as Yokotenkai 橫展開, (Hino 2007) in its PM related version.

The authors consider the *(CPD)nA* as inter-process communication standard between PMO agents. The *(CPD)nA* application in the PMO context follows the phases as defined in Villalba Díez & Ordieres-Meré (2015).

The implementation phases of HKT as described in Villalba-Díez & Ordieres-Meré & Nuber (2015) are:

1. *Awareness*. 3G Gemba-Genjitsu-Gembutsu. The purpose of this phase is to raise awareness regarding HKT in both PMO and PM.
2. *Nemawashi*. The purpose of this phase is to prepare the foundations by understanding the PMO and PM KPI structure.
3. *Ueru Management*. Planting the HKT. The purpose of this phase is to install Shopfloor Management in both PMO and PM based upon *(CPD)nA*.
4. *Ueki-Ya Leadership Phase*. Taking care of the HKT. The purpose of this phase is for the PMO to acquire the role of Lean Leader as gardener and trust fosterer.
5. *Alignment and Executive Review*. The purpose of this phase is aligning and reviewing PMO efforts with senior management.

The *(CPD)nA* is a cyclical management process of continuous improvement behavioral patterns, which acquires in this PMO context a novel dimension as standard communication pattern between PMO members within the PMO, and between the PMO and their customers.

4 Case Study

The research site for this study is Global Equipment Manufacturer (GEM), which produces a variety of machines. In 2013, GEM reported around \$3 billion in revenue, with around 10,000 employees and 11 factories in 4 continents. The data for this study comes from GEM's headquarters' PMO regarding its structure and perceived changes in PMO performance. In this case study we present the change process from the traditional GEM's headquarters' PMO structure towards a Hoshin Kanri based PMO, and present the perceived changes in PMO performance.

We aim to study the effect of the implementation of HKT upon the temporal variation of performance at GEM's PMO in terms of several KPIs.

The PMO's performance is measured on a weekly basis, based upon following KPIs:

- KPI1. Number of PM Members in HKT/Number of Total PM Members. Measured in [%].
- KPI2. PMO Average Project Schedule Delays. Measured in [%]
- KPI3. NHPM/NH Total. Measured in [%].
- KPI4. Project Cost Overrun. Measured in [%].

All data was gathered in an ongoing research effort which spanned 12 months from January to December 2014. The observations of the implementation degree of HKT technology were measured on a weekly basis given by the % of PMO POs and PMO clients involved in the HKT as depicted in Figure 1, where the phase durations have been highlighted.

5 Discussion & Conclusion

By standardizing the PMO inter-process communication through $(CPD)nA$, the PMO adopts the shape of an organizational structural network in which the nodes are the PMO agents and the edges are the KPIs as described in the $(CPD)nA$.

This approach presents several advantages:

1. The PMO benefits from this standardization because it can foster a common language between all PMO activities.

2. The PMO is likely to increase its performance because each PMO agent is responsible for a certain KPI and reports this KPI within the PMO organization, as well as optimizing its value.
3. By standardizing inter-process communication through *(CPD)nA*, organizations will bridge the gap between PMO and knowledge management because all PMO related activities will be recorded throughout the Phase Act. These jointly developed standards serve as common ground by helping identify common platforms for future development.
4. Identification based trust within the PMO and between PMO and the organization is likely to increase because of inter-process communication standardization due to the increased transparency upon expectations.
5. An example of this system is provided by HKT. If HKT technology is implemented, the PMO management can run PMO wide shop floor management, thus deploying strategic and operational goals throughout PMO organization.
6. The PMO benefits from the *(CPD)nA* standard also in the role of PM due to the evolutional nature of the *(CPD)nA* process management approach. In fact, because the standard in the Phase Act has evolved in closed relationship with the operational process owner, the project can benefit from the standardization.
7. To conclude, we can establish that by creating a structural organizational network within the PMO and by linking this network with the rest of the organization through the PM, the PMO will be empowered towards new levels of influence in the organization. The PMO becomes an even more important player in the strategic task of process standardization because each of its activities (internal and PM-related) happen via an inter-process communication standard such as *(CPD)nA*.

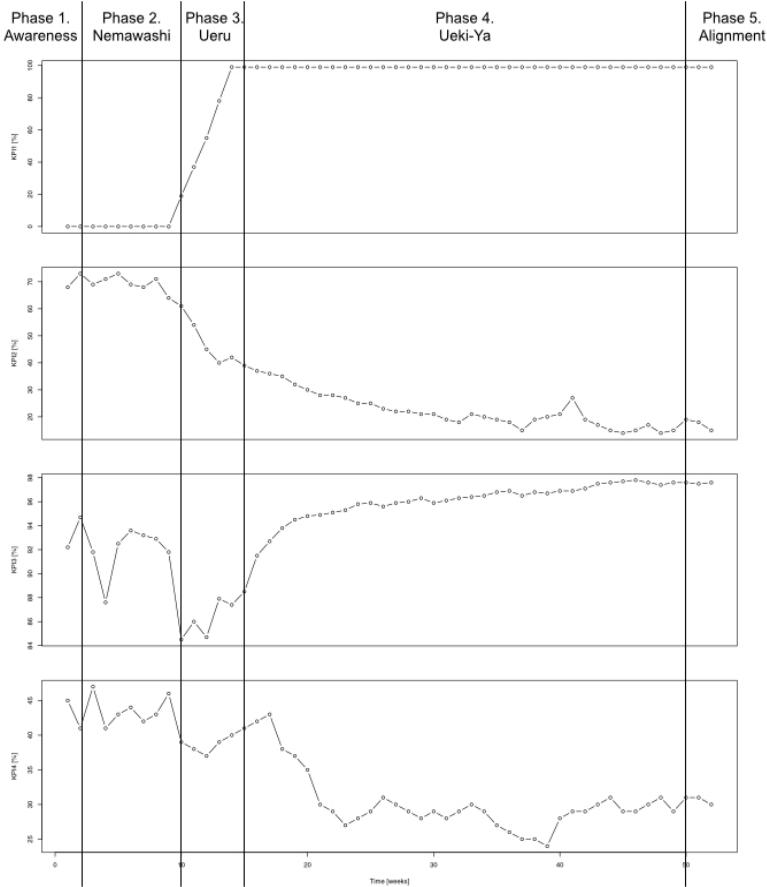


Fig. 1.- Time evolution of the four defined KPIs where the impact of the implementation of the Communication Standardization is clearly identified.

3 References

- Artto, K., Kulvik, I., Poskela, J. and Turkulainen, V. (2011), "The integrative role of the project management office in the front end of innovation", *International Journal of Project Management*, Vol. 29, No. 4, pp. 408.
- Cäker, M. and Siverbo, S. (2014), "Strategic alignment in decentralized organizations – The case of Svenska Handelsbanken", *Scandinavian Journal of Management*, Vol. 30, No. 2, pp. 149.
- Cross, R.L., Singer, J., Colella, S., Thomas, R.J. and Silverstone, Y. (2010), *The organizational network fieldbook: Best practices, techniques and exercises to drive organizational innovation and performance* translated by Anonymous John Wiley & Sons.

- Dai, C.X. and Wells, W.G. (2004), "An exploration of project management office features and their relationship to project performance", *International Journal of Project Management*, Vol. 22, No. 7, pp. 523.
- Desouza, K.C. and Evaristo, J.R. (2006), "Project Management Offices: A Case of Knowledge-based Archetypes", *Int.J.Inf.Manag.*, Vol. 26, No. 5, pp. 414-423.
- Easton, G., Gilchrist, A. and Lenney, P. (2012), "The Co-constitutiveness Nature of Organizations and Industrial Networks: A Critical Realist Approach", "The Co-constitutiveness Nature of Organizations and Industrial Networks: A Critical Realist Approach", *28th IMP Conference*.
- Fernandes, G., Ward, S. and Araújo, M. (2014), "Developing a Framework for Embedding Useful Project Management Improvement Initiatives in Organizations", *Project Management Journal*, Vol. 45, No. 4, pp. 81-108.
- Frow, N., Marginson, D. and Ogden, S. (2010), "“Continuous” budgeting: Reconciling budget flexibility with budgetary control", *Accounting, Organizations and Society*, Vol. 35, No. 4, pp. 444.
- Hino (2007), "トヨタ経営システムの真髄 (The essence of the Toyota management system)", "トヨタ経営システムの真髄 (The essence of the Toyota management system)", , University of Hiroshima, pp. 35.
- Jessen, S.A. (1993), *The nature of project leadership* translated by Anonymous Oxford University Press.
- Jolayemi, J.K. (2008), "Hoshin kanri and hoshin process: A review and literature survey", *Total Quality Management & Business Excellence*, Vol. 19, No. 3, pp. 295-320.
- Koskinen, K.U. and Pihlanto, P. (2007), "Trust in a knowledge related project work environment", *International Journal of Management and Decision Making*, Vol. 8, No. 1, pp. 75-88.
- Maurer, I. (2010), "How to build trust in inter-organizational projects: The impact of project staffing and project rewards on the formation of trust, knowledge acquisition and product innovation", *International Journal of Project Management*, Vol. 28, No. 7, pp. 629.
- Nahod, M. and Radujković, M.V.M. (2013), "The Impact of ICB\ 3.0 Competences on Project Management Success", *Procedia - Social and Behavioral Sciences*, Vol. 74, No. 0, pp. 244.
- Pinto, J.K. and Slevin, D.P. (1988), "Project success: definitions and measurement techniques", *Project Management Journal*, Vol. 1988/2, No. 19, pp. 67-72.
- Research, P.S. (2015), "The State of the Project Management Office (PMO) 2014"Vol. 1, pp. 1-12.
- Seddon, P.B., Calvert, C. and Yang, S. (2010), "A Multi-project Model of Key Factors Affecting Organizational Benefits from Enterprise Systems", *MIS Q.*, Vol. 34, No. 2, pp. 305-328.
- Sengupta, S. (2011), *Business and Managerial Communication* translated by Anonymous PHI Learning Pvt. Ltd.
- Spalek, S. (2012), "The role of project management office in the multi-project environment", *International Journal of Management and Enterprise Development*, Vol. 12, No. 2, pp. 172-188.
- Villalba Díez, J. and Ordieres-Mere, J. (2015), "Improving manufacturing operational performance by standardizing process management.", *Transactions on Engineering Management*, Vol. submitted.
- Villalba-Diez, J., Ordieres-Meré, J. and Nuber, G. (2015), "The HOSHIN KANRI TREE. Cross-Plant Lean Shopfloor Management", "The HOSHIN KANRI TREE. Cross-Plant Lean Shopfloor Management", *The 5th Conference on Learning Factories 2015*, Elsevier, Bochum.
- Yang, L., Chen, J., Wu, K., Huang, D. and Cheng, C. (2014), "A framework for evaluating relationship among HRM practices, project success and organizational benefit", *Quality & Quantity*, , pp. 1-23.