

Improving the Management of Projects through Hoshin Kanri

Mejora de la gestión de proyectos a través de Hoshin Kanri

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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;

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. Pinto (Pinto and Slevin, 1988) identified 10 CSFs, including project mission, project plan, client consultation, technical tasks and communication. These CSF are quite project-centric but other proposals (Seddon et al, 2010) have promoted other factors that consider not only intra-project aspects but organizational ones. Some authors (Cicmil et al, 2006) suggest that the utilization of projects requires a new perspective in project management (PM), and some others have proposed a new model for more effective operations in project-driven organizations (Dai and Wells, 2004). In spite of the advantages of using the project approach, however, there are authors (Jessen, 1993, Shenhar et al, 2001) supporting that the temporary nature of projects will require an effective knowledge transfer, otherwise, an organization may derive little benefit from previous successes and failures.

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 and 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 (PM Solution, 2014). 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 evolution of PMO from im-mature 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 (Villalba-Díez and Ordieres-Meré, 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 and Siverbo, 2014). Certain studies (Frow et al, 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 et al, 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.

The relevant instrument to link project behavior with the organizational knowledge is the PMO, as it is responsible for the appropriate implementation of PM methods, including process and procedures but also best practices and policies. Therefore, the PMO can be seen as the natural connection between the organization's strategy and projects, coordinating the communication across projects.

Through the implementation of the monitoring processes (PMI, 2008, CAUPIN et al, 2006), it collects data from projects, consolidating them and reporting to in-ternal and external stakeholders (Nahod and Radujković, 2013).

(Desouza and 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 and 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-Diez et al, 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 et al, 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 横展開, (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-Diez and Ordieres-Meré, 2015).

The (CPD)nA can be briefly described as an inter-process communication standard that is based upon

- first (CHECK) measuring a process KPI.
- Second (PLAN1) understanding the current state of the value stream in-volved.
- Third (PLAN2) prioritizing the most important internal process variability sources.
- Fourth (PLAN3) analyzing the root-cause of the top1 priority, fifth (DO) acting upon the root-cause to eliminate it, sixth repeat steps 1st-5th.
- Finally (ACT) standardizing the value stream as best known way to per-form it.

The HKT is a Shopfloor management methodology that enables the cyclical communication between process owners based on the (CPD)nA standard. The implementation phases of HKT as described in (Villalba-Diez et al, 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 re-viewing 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.

By standardizing the PMO inter-process communica-

tion 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 re-sponsible 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 evolutionary 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.

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 [%]. This KPI measures the engagement of the PMO and the PM members in HKT and in communicating throughout the standard (CPD)nA provided. It provides hence an accurate overview of the evolutionary process that the PM and PMO teams undergo when using these methodologies.
- KPI2. PMO Average Project Schedule Delays. Measured in [%]. This KPI expresses PMO schedule performance. Alternatives such as SPI (Schedule Performance Index) could have been used as well at project level.
- KPI3. NHPM/NH Total (Number of hours Project Management/Number of hours Total). Measured in [%]. This KPI describes the involvement of the PM team in the projects.
- KPI4. Project Cost Overrun. Measured in [%]. This KPI measures the PMO cost performance. Alternatives such as CPI (Cost Performance Index) could have been used as well at project level.

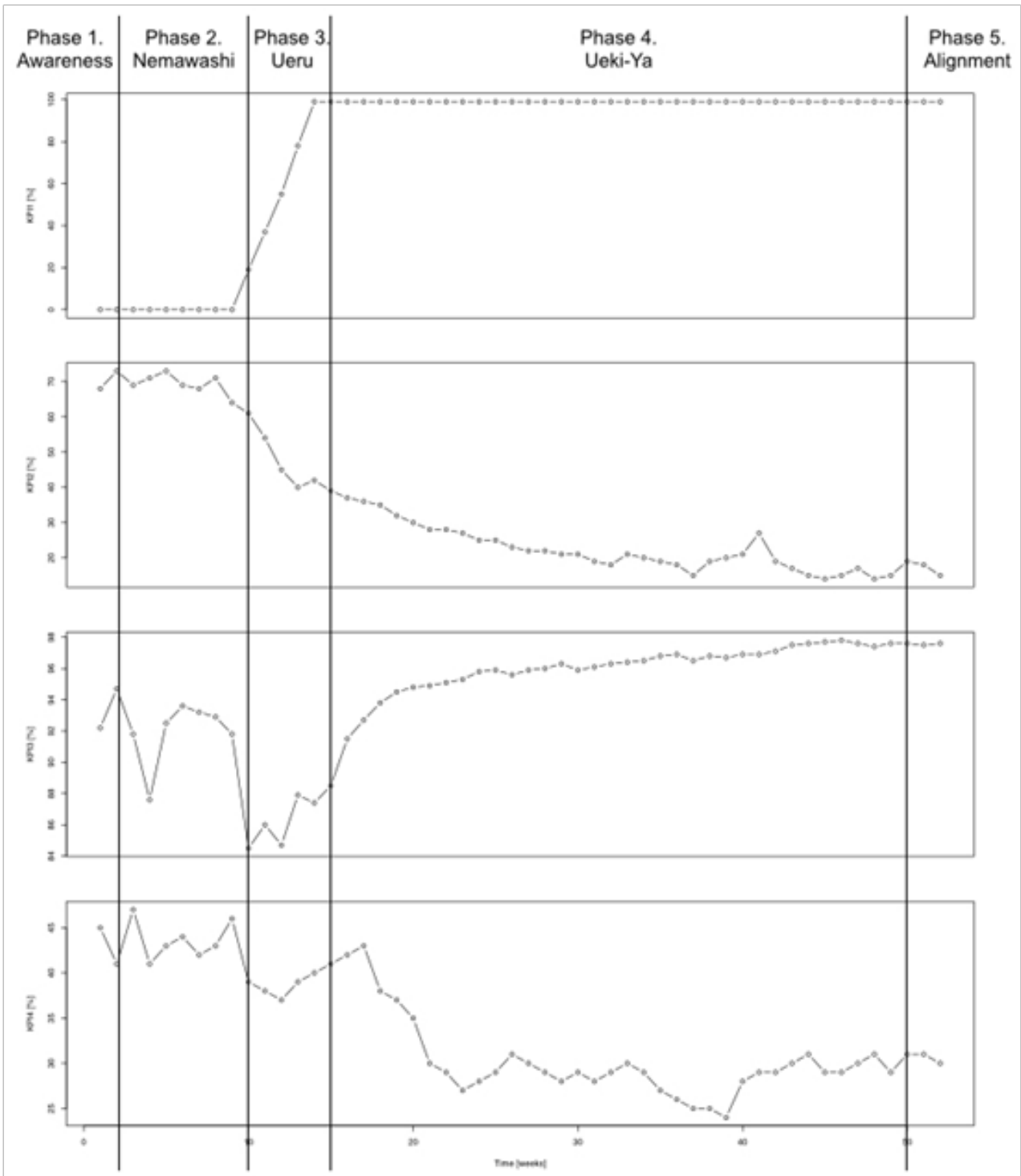


Fig. 1.- Time evolution of the four defined KPIs where the impact of the implementation of the Communication Standardization is clearly identified.

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.

The main challenge when implementing HK in a PM context is to keep balance between project goal achievement and the sustainability of these achievements. Both are criteria to measure the ultimate success of the project and its impact on the overall organizational culture. Exactly for this reason, and in order to find the proper balance and make it quantifiable through KPIs, is HKT so important throughout the implementation.

5. Discussion & Conclusion

After monitoring the implementation some observations can be made about the KPI performance.

In the Nemawashi phase, the PMO spented certain amount of time learning the (CPD)nA and HKT routines. This can be observed in KPI1 and impacts KPI3 as the NHPM/NHTotal decreases significantly. The behavior can be explained as a one-time investment made by the PMO in training the PM in (CPD)nA and HKT. This shall have a twofold impact on both KPI2 and KPI4. The impact on KPI2 can be observed immediately. For the PMO and PM start working immediately on specific project tasks throughout the (CPD)nAs, the decrease observed in the Nemawashi phase is natural. The KPI4 seemed to exhibit that the investment on (CPD)nA and HKT training in the nemawashi phase starts paying off later, after the fourth phase has started.

A light increase in the cost (see KPI4) can even be observed, probably because of the time spent PM in (CPD)nA consensus and related management aspects. However, it makes fully sense as such discussions are the key element for empowering team members and work package responsables. The empowering activities, when carried out properly will be the way of making the organization stronger, as they enable each participant to continue improving her organizational and process related knowledge.

Problems identified throughout this case study, and that may occur in some implementations of HK, and, can be summarized as follows:

1. Standardization takes time and phases 1 and 2, which raise awareness and install the system, can sometimes give the impression to the impatient PM team that "we are not moving fast enough". For this reason, strong support from senior leadership regarding the need of standardization of interprocess communication is crucial for success.
2. Keys to successful implementation of HK in PM are three: discipline, discipline and discipline. Both at an individual but also at a collective level, each PM team member needs to be made aware of the need to work in a common direction. The psychological aspects of this complex leadership task are decisive and could be matter of further study.
3. The way of working without explicit goals, but applying continuous improvements against the defined KPIs becomes many times disruptive. This is because there is an influence from the classical management practices, that need to be understood. However, this does not mean any tolerance level with such practices as HK looks for a bottom-up sustainable way of adding value, including the coach from the interested KPI receiver, which help much to the empowering of the system.

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