

Project management offices in transition

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Abstract

This paper presents empirical results from a research on Project Management Offices (PMO) in transition. While PMOs are now a prominent feature of organizational project management, the underlying logic that leads to their implementation or renewal is still not understood. This research adopted a process view of PMOs in transition. Descriptive data from 17 case studies was primarily obtained through interviews and analyzed using qualitative text analysis methods. Thirty-five factors of change have been grouped in six categories forming a typology of drivers of PMO change. In addition, three patterns of PMO change are presented. The major contribution of this research is to gain a better understanding of the dynamic evolution of PMOs. For researchers, these findings contribute to the project management theoretical development within the field of organizational change. For practitioners, it challenges the paradigm of considering the PMO change as a sign of failure.

Keywords: PMO; Transformation process; Grounded theory; Drivers of change; Change pattern

1. Introduction

Project management has come to play a central role in the management of organizations in almost all fields of human activity. Bredillet et al. (2008) report from World Bank data that 21% of the world's gross domestic product (GDP) is gross capital formation, which is tightly related to project activities. This is also reflected within organizations where a greater portion of their activities is organized by projects.

Over the last decade, many organizations have implemented one or more Project Management Offices (PMOs) as part of organizational project management attributing a variety of both operational and strategic roles to their PMOs (Dai and Wells, 2004).

While PMOs are now a prominent feature of organizational project management, the underlying logic that leads to their implementation or renewal is still not understood. The results of a survey of 500 PMOs documented the great variety and lack of consensus on the value of PMOs, the structure of PMOs and the functions included in their mandates (Hobbs and Aubry, 2007).

People responsible for establishing or managing a PMO have a great variety of options to choose from with respect to both the organizational structures to put in place and the functions to include within the mandate of the PMO.

In addition, executives ask for value from these structures and PMO managers are often hard pressed to show value for money. The current state of knowledge of PMOs and how they contribute to value creation provides PMO managers with very few resources.

The practitioner community is looking, therefore, for standards or at least guidelines to help them and their executives to be more successful in establishing and managing PMOs. On the other hand, the research project management community is looking for recognition of its theoretical base within the larger management research community. An

international effort has been made recently to formalize theoretical knowledge in the field of project management (Andersen, 2006; Bredillet, 2007; Turner, 2006).

Many consultants and some researchers have written on PMOs in recent years. The focus of the vast majority of this work has been on identifying the characteristics of PMOs and a limited number of variables that would drive the choice of configurations of new or existing PMOs.

The implicit underlying assumptions in the current literature are that there are a limited number of variations of PMOs and that PMOs are relatively stable structural entities. At least three independent surveys have shown that the average age of PMOs is approximately two years (Hobbs and Aubry, 2007; Interthink, 2002; Stanleigh, 2005).

This has not changed in recent years. The authors know of no research results that are inconsistent with these observations. PMOs are, therefore, often not stable structures but temporary arrangements with a rather short life expectancy. The 17 case studies conducted in this research illustrate the temporary nature of PMOs. This case study work also revealed that significant changes in PMOs can be associated with the organization's internal or external environment.

The case study results indicate that focusing on the organizational change process surrounding the implementation or the transformation of a PMO, rather than focusing on the characteristics of the PMO as a static organizational entity can be a fruitful approach. The pertinence of this process approach to better understand PMOs has been validated recently during executive workshops that have been held in Europe, USA, Australia and Canada.

In light of the current organizational context described above, the high level objective of this research is to understand the forces that are driving the frequent reconfigurations of PMOs. More specifically, this research intends to answer these questions:

- Why do PMOs change? What are the drivers?
- How does the change happen? Is there a dynamic change

process?

- What is changing? What are the characteristics or functions that are changing?
- Is there any pattern of change?

Results from this research should contribute to building the theoretical foundations of project management more specifically in the Governance school of thought (Bredillet, 2008). It should also provide guidance to project management practitioners and upper management in the implementation, remodeling and management of PMOs.

The article is structured as follows. The first section draws an overall portrait of the current literature in relation with the research objective.

The second section proposes a conceptual model to explore the process of PMO transformation. Methodology is presented in Section 3 followed by empirical results that are delivered in Section 4. Finally, discussion and conclusion provide insights into PMO transformations and also identify limits of this research as well as new paths for future research.

2. Literature review

The present investigation employs a rather broad definition of the PMO in order to capture the variety of form and function (Project Management Institute, 2008a, p. 435). It highlights that PMOs are organizational entities and that their mandates vary significantly from one organization to the next.

However, the present study makes a distinction between the multi-project PMO and the single-project PMO or "project office," which has responsibility for the management of one large project. The scope of the present investigation includes only PMOs with mandates that cover many projects or "multi-project PMOs." For the purposes of this investigation, it is not necessary that the organizational unity be called a PMO.

Treatment of the PMO is relatively plentiful in the professional literature (Benko and McFarlan, 2003; Bridges and Crawford, 2001; Crawford, 2002; Dinsmore, 1999; Duggal, 2001; Kendall and Rollins, 2003), but limited in the scientific literature. These texts deal principally with three themes: the justification of the PMO's existence, its roles and functions, and steps for its implementation.

The emergence of and the need for the PMO are associated with the increasing number and complexity of projects throughout the business world which led to a certain form of centralization (Marsh, 2000).

However, the reality of PMOs is highly divergent. Nearly 75 unique functions have been identified (Crawford, 2004), some traditional some innovative (Duggal, 2001). PMOs are envisioned by some authors as playing an active role in specific functions.

Huemann and Anbari (2007) pointed out that PMOs should be more involved in audit functions particularly in the learning from audits and Huemann et al. (2007) identified the PMO as a key actor in human resources management in project-oriented organizations. The descriptions of PMOs in the literature are often summarized

in typologies comprised of a small number of models.

The most common types of PMOs described in the literature proposed three or four models. The Gartner Research Group's 2000 study (cited in Kendall and Rollins, 2003) proposed one of the most influential typologies of PMOs. The Gartner Group typology is comprised of three types of PMOs: (1) project repository, (2) coach, and (3) enterprise.

Some of the typologies identify the single-project entity of "project office," which is outside the scope of the present study. Each of the typologies proposes two, three, or four multi-project PMOs, organized in an ascending hierarchy.

The progression of PMO is intended to follow an incremental path from a low level to a high level model. Some authors proposed a maturity model specific for PMO (Kendall and Rollins, 2003) where the same assumption of progression is taken for granted.

The Organizational Project Management Maturity Model (OPM3) from Project Management Institute (2008b) is also based upon this assumption. The reality from our case studies doesn't support a regular progression towards a better PMO.

From the direct participation of seven senior managers from large organizations in a PMO forum, Pellegrinelli and Garagna (2009, p.653) propose a conceptualization of PMOs through a process of emptying itself. "The process can be conceived as a transfer of value from the PMO to the rest of the organization.

"To be successful, the PMO became a change agent for the implementation of project management culture through methods, standards and tools. After this has been accomplished, the PMO could be unable to justify its survival.

At that point, project management is embedded in the organization's routines and processes.

The authors recognize the interest of this emptying process, however, the results presented here don't support it directly. Events outside the direct control of PMO managers happen, often with some element of surprise.

Tension or conflicts around the PMO get constructed and sometimes diminish the manageability of the organization. The organization and the PMO have to be realigned as time passes. The case studies show that multiple combined factors may participate in the emptying process.

3. Conceptual framework

The aim of this research bears on organizational changes. In this section we present the basic foundations used to conceptualize a PMO transformation followed by the conceptual framework used in this research.

Three complementary theories or models are presented. First of all, evolutionary theory brings in the opportunity to open up the PMO's black box by examining it as a process of change.

Then, in a more constructivist mode of change, the transformation process is presented based upon the grounded theory approach. Finally, a PMO descriptive model is presented.

3.1. Open up the PMO's black box

Organizational change mobilized great attention from scholars in economics since Schumpeter recognized organizational innovations as part of the creative destruction process (Schumpeter, 1950).

Evolutionary theory has developed within the Schumpeterian tradition to better understand technological change at the macro-level (long economic cycle), but attention has also focused on the micro level, opening the black box of routines, learning and innovation within organizations (Lévesque et al., 2001).

A basic evolutionary model envisions the organization as a collection of routines or stable bundles of activities. With time, variation occurs within these routines with the result that any given set of routines evolves, whether intentionally or not. A certain number of new routines are then adopted as temporarily permanent practices.

This simple variation–selection–retention repeats itself continuously (Miner, 1994). Within evolutionary theory, organizational change is seen as a continuous process. It is considered as the action of changing, in line with Weick (1969) who called for action verbs instead of nouns (Pettigrew et al., 2001).

Organizational trajectories are path dependency conditioned by the irreversibility of investments. Organizational context and history are importance for understanding organizational change.

The capacity of organizations to change their routines and structures has already been identified as a source of competitiveness (Pettigrew, 2003). Conversely, within evolutionary theory, inertia in large organizations has been identified as a constraint for organizations to succeed in competitive environment.

Innovation studies and evolutionary economics have widely explored the relation between organizational characteristics and changes (at the organizational level) and knowledge management and technological innovation activities (at the population level) (Massini et al., 2002, p.1134).

More recently, researchers embracing evolutionary theory linked together multiple levels of analysis to explain complex phenomenon (Hughes, 1987; Massini et al., 2002; Van de Ven and Garud, 1994). This approach allowed for the inclusion of interactions between levels of analysis taking into account multiple interacting processes across boundaries (Pettigrew et al., 2001).

The aim of this paper is to open up the PMO's *black box* when the change occurred. The focus is therefore placed at the organization level exploring the process of PMO change. Following Massini et al. (2002) “the level of analysis in evolutionary economics is normally the firm, within which tacit and explicit forms of knowledge interact and are selected on the bases of choices made by individuals, according to some utility emerging from the historical and economic context” (p. 1335).

This gives the opportunity to observe routines that are changing in relation with their context. PMO can be described as a structural entity embedding a bundle of routines using the PMO descriptive model (see section below). Social dynamics within the PMO transformation process complement the evolutionary

framework as shown in the following section.

3.2. PMO transformation process

Implementing a PMO or reconfiguring an existing PMO is an important organizational change. This change is often part of a wider organizational reconfiguration.

Methodology and an interpretive framework are needed that can capture the dynamic complexity of organizational change. The approach that has been adopted investigates the PMO embedded in its organizational context.

The approach can be related to a long tradition of contextual studies in the literature on project organizations from Midler (1994) to Pellegrinelli et al. (2007). History and context are essential to the understanding of what is observed at any one point in space and time in complex systems such as organizations (Engwall, 2003). We used in-depth interviews, where we asked the interviewees to tell us “their PMO transition story”.

These interviews took between sixty and ninety minutes. A rich data set was collected that allowed for a comprehensive understanding of the circumstances that lead to the transition, the transition itself, and the implications of these transitions. For interviews done in 2006, data were recorded, transcribed and then analyzed. In 2008, data were collected by taking notes.

The data from each case was used for the within-case analysis, done by the interviewing researchers, immediately after the interviews. This analysis step aimed at building a cohesive story of the context, the PMO and its transition.

The theoretical foundations of the social innovation system framework take into account the context in which such organizational innovations take place (Hughes, 1987). Social innovation builds also on a bi-directional relation that conceives of organizational innovations as socially-constructed and society-shaping (Bresnen et al., 2005).

Organizational innovations are produced by the interplay between actors in structures and the organization as a whole. The PMO is a socially constructed entity that in turn shapes the organization. The PMO and its host organization co-evolve.

Organizational change occurs in a political environment either inside or around the organization (Mintzberg, 1983). Changes to PMOs are both caused by political forces and shape a new political environment.

Tensions within the organization play an important role in determining the path that an organization's development will follow. In turn, each new structural arrangement realigns the power structure and creates new tensions.

The investigation of the creation or restructuring of PMOs will need to integrate the political dimension of organizational change.

A recent in-depth case study research on PMOs (Aubry, 2007) adopted the grounded theory approach as described in Strauss and Corbin (1990). In general, this approach enables

researcher to analyze data in order to understand a complex social reality through the development of a process (Langley, 1999). A process can be described using three basic components: conditions, action/interaction and consequences. This process repeats itself over time as the consequences become the conditions for the next iteration. The grounded theory approach has been used to explore the PMO as an organizational innovation (Hobbs et al., 2008). In this approach, the PMO in one period is seen as a temporary state resulting from previous conditions and generating new consequences. This sequence constitutes the PMO structuring process, which is illustrated in the conceptual framework in Fig. 1. This paper looked at one transformation at the time but the framework was built to support a dynamic continuous structuring process.

3.3. PMO descriptive model

The model proposed here describes the PMO under a set of characteristics and functions. This model has been developed using 500 descriptions of PMOs from a survey that was done in 2005 (Hobbs and Aubry, 2007). The set of characteristics are grouped into three classes: organizational context, PMO description and performance. The description of the PMO is further divided into structural characteristics and functions. Table 1 presents the PMO descriptive model.

The conceptual framework is process based and aimed at capturing the PMO transformation as it unfolds. The process is embedded in the social system. The starting point is the PMO description before the transformation using the PMO model. Then the conditions that are associated with the transformation are identified as co-evolution suggests with events from external or internal contexts. Issues, tensions or conflicts are captured as proposed in a grounded theory approach. The

transformation itself is described in terms of change management. The resulting PMO after the transformation is then described using again the PMO model. Consequences of the changes are also identified as suggested by the grounded theory approach.

4. Methodology

Mixed-method empirical research designs are often more robust (Brown and Eisenhardt, 1997). With the present project being part of a wider, mixed-method program of research projects we took a critical realist perspective within the present study (Bhaskar, 1975; Van de Ven, 2007) for the development of case based theory, following (Partington, 2000).

Two distinct methodological objectives were pursued within this study:

- a) investigating the present research question by use of a multi-case study approach, following (Partington, 2000; Eisenhardt, 1989; Yin, 2003), and
- b) developing the data capturing tool (i.e. a questionnaire) for the next research phase in the program by using a grounded theory approach, following Strauss and Corbin (1990).

The process was operationalized by using the interviews from the case studies to (a) collect data for the present study, plus (b) to refine the questionnaire by seeking feedback from the interviewees on the contents and layout of the survey. While the interviews and case studies were done for the present study, the questionnaire was mainly developed for the next phase in the research program. That approach supported the underlying critical realist epistemology by identifying underlying objective structures through a questionnaire-based study and the

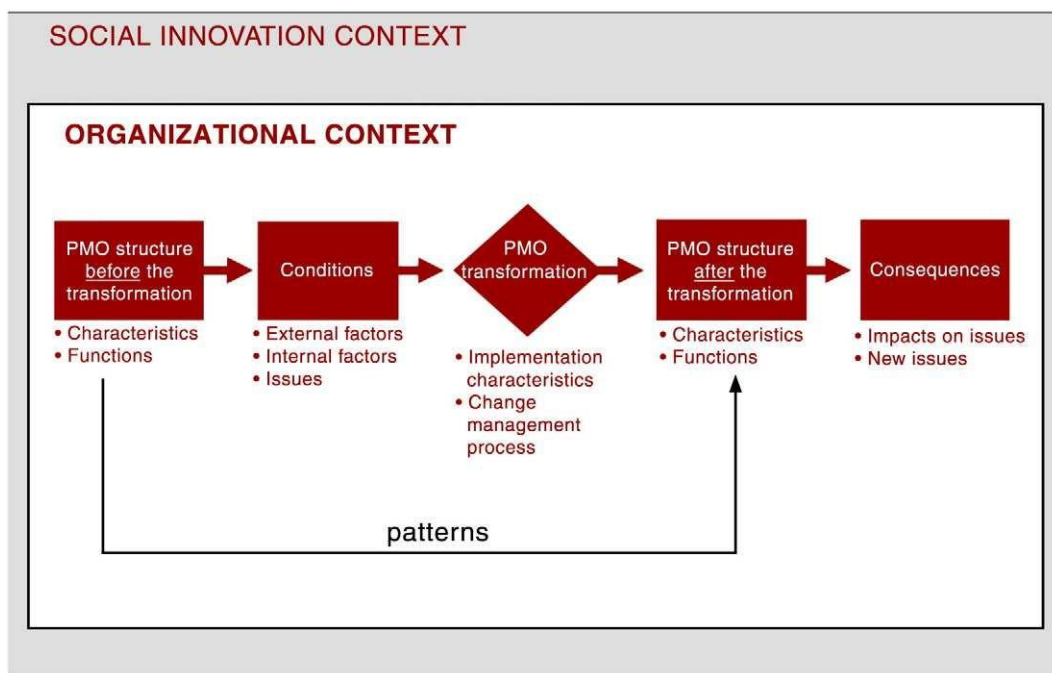


Fig. 1. Conceptual framework for PMO in transition.

Table 1
 PMO descriptive model.

	Classes of data	Element of data
PMO context	Organizational context	<ul style="list-style-type: none"> • Economic sector • Public or private • Size of organization • Percentage of resources that Report to the same management as the PMO Manager or that are matrixed throughout the organization • Internal or external project clients • Single or multiple project customers • Level of organizational project management maturity • Supportiveness of organizational culture
	Type of projects in the PMO mandate	<ul style="list-style-type: none"> • Scope expressed as the number of people working on the project • Scope in terms of duration • The type of product or service delivered* • The primary performance criteria of the PMO's projects* • The inclusion of post-delivery activities within project scope* • Involvement in outsourcing contracts*
PMO description	Structural characteristics	<ul style="list-style-type: none"> • The name used to identify the PMO • Time to implement the PMO • Location within the organizational hierarchy • Relationship(s) with other PMO(s) in the same organization • Staff of PMO (other than project/program managers) • Size expressed as the number of people working on the project. This is also a measure of the size of the PMO <ul style="list-style-type: none"> • Experience of the staff* • Professional background of the staff* • Presence of business analysts or business architects among the staff* • Age of the PMO • Percentage of projects within the mandate of the PMO • Percentage of project managers within the PMO • Decision-making authority of the PMO • The status of the project management methodology <ul style="list-style-type: none"> • Homegrown or brought in from outside* • Use is compulsory or discretionary* • Degree to which methods are actually followed* • The adequacy of funding of the PMO* • The means of funding including the billing for services*
	Roles or functions	<ol style="list-style-type: none"> 1. Monitor and control project performance 2. Develop and implement standards and competencies 3. Multi-project management 4. Strategic management 5. Organizational learning 6. Management of customer interfaces 7. Recruit, select, evaluate and determine salaries for project managers 8. Executive specialized task for project managers
Performance	Perceived performance	<ul style="list-style-type: none"> • Legitimacy, reported in response to the question, "Has the relevance or even the existence of the PMO been seriously questioned in recent years?" • Contribution to project/program performance.

The asterisk refers to the number of respondents to the survey. For elements without an asterisk, n=502; for elements with an asterisk, n=123.

subjective interpretation of these structures by using interviews. For the purpose of this research that bears on PMO transformation, first implementations of PMOs have been excluded from the study. A first implementation may be a specific context leading to non-generalization of findings. Even if the first implementation is worthwhile research, the present study focuses on existing PMOs.

5. The case studies

Data was collected at two different points in time. A first set of seven cases was done in 2006 in the context of a doctoral thesis with a total of 44 interviews. The second set of 10 cases

was done in 2008 with 29 interviews. Cases were selected on the basis of maximizing breadth of industries represented. The 17 case studies spread over 10 different industries in two different countries. Twelve of the cases were in Canada and five in Sweden. Details on country, industry, number of interviews, and interviewee role are shown in Table 2. In total, we interviewed eleven executive managers, 15 PMO directors, two portfolio manager, four program managers, 13 project managers, 12 managers within PMOs, 10 PMO employees and six managers elsewhere in the organization. Except for one case, sampling was done by interviewing multiple roles for each case. This approach allowed for collection of a wide spectrum of perspectives and avoided mono-source bias. Mono-method bias was minimized

Table 2
 Cases and interviewees.

Transformation cases	Country	Industry	Interviews	
			Number of interviews	Position
1	Canada	Telecom	2	Executive, Project manager
2	Canada	Telecom	3	Executive, Project manager, Manager in PMO
3	Canada	Telecom	11	Executive (2), Project manager (3), Manager in PMO (3), PMO director, Finances Manager, HR Manager
4	Canada	Banking	3	PMO director, Program Manager, PMO employee
5	Canada	Banking	11	Executive, PMO director, Portfolio manager, Program Manager, Manager in PMO, PMO employee (3), Project manager (2), Finances Manager
6	Canada	Home entertainment	2	PMO director, Manager in PMO
7	Canada	Home entertainment	12	PMO director, Manager in PMO, Project manager, Finances manager, HR manager, Manager, PMO employee (6)
8	Sweden	Telecom	3	Program Manager, Portfolio manager, PMO Director
9	Sweden	Manufacturing	3	PMO Director, Executive, Manager in PMO
10	Sweden	Defense	1	Program Manager
11	Sweden	Health Care	3	PMO Director, Manager in PMO (consultant), Executive
12	Sweden	Insurance	3	PMO Director, Project manager, Project manager
13	Canada	Retail	3	PMO Director, Executive (CIO), Manager in PMO (consultant)
14	Canada	Banking	3	PMO Director, Manager in PMO, Project manager
15	Canada	Telecom -operator	3	PMO Director, Project manager, Manager in PMO
16	Canada	Utility	3	Executive, PMO director, Executive (Marketing unit)
17	Canada	Engineering	4	PMO Director (central), PMO director (on client site), Project manager, Executive (regional unit)

through the mixed-method approach in both the 17 case studies and the overall research program. In line with Yin (2003), validity was pursued through careful screening and selection of possible interviewees, often involving major efforts to identify the ‘best’ source of information. Reliability was pursued through a multi-case approach across a larger number of industries (Yin, 2003).

We used in-depth interviews, where we asked the interviewees to tell us “their PMO transition story”. These interviews took between sixty and ninety minutes. A rich data set was collected that allowed for a comprehensive understanding of the circumstances that lead to the transition, the transition itself, and the implications of these transitions. For interviews done in 2006, data were recorded, transcribed and then analyzed. In 2008, data were collected by taking notes.

The data from each case was used for the within-case analysis, done by the interviewing researchers, immediately after the interviews. This analysis step aimed at building a cohesive story of the context, the PMO and its transition. Evidence beyond the interview data was taken from reports, the questionnaire, and other materials given to the team during the interview. The data collected was mainly qualitative. The results were written-up in case reports. These reports and interview notes were used later for the cross-case analysis, after all interviews for all cases were finished.

The questionnaire played a major role within the ten interviews conducted in 2008:

Prior to each interview, the latest version of the questionnaire was sent to the interviewee for preparation of the interview. This preparation took the form of completing the question- naire. Approximately 80% of the interviewees

did that.

During the second part of the interview (after interviewees had a chance to tell “their PMO transition story”), we talked through the questionnaire step by step, question-by-question to a) better understand their answers, and b) to seek interviewee feedback on how to refine the questionnaire

- After the interview we analyzed the answers, refined the questionnaire and with it the questions for the next interview. The analysis results led to an immediate update of the questionnaire.

Three versions of the questionnaire were developed and tested. The first version was tested in Sweden and the second in Canada. The third version was used for the next phase of the research, that is, a global validation of the results from the case studies.

The cross-case analysis focused on the identification of demographic, external, internal, procedural, and performance factors. This was done jointly by all four researchers, through a constant comparison approach, following Strauss and Corbin (1990). For that we compared the within-case analyses and the associated interview notes to derive 35 cross-case factors that describe the context, scope and nature of the transition of the PMOs. Then we defined these 35 factors in detail by use of the interview notes, questionnaire responses and a variety of published academic sources. From the results we develop a set of hypotheses, which are to be tested in the next phase of the research program.

The next step in data analysis was to identify the weight of each of the 35 factors as drivers of the transition. We used contents analysis in form of the relative frequency of mentions of the different factors to identify their importance (Denzin and Lincoln, 2000). Of the 35 factors, 15 were mentioned more

frequently than the average of 6.9 mentions, 3 were at the level of average, and 16 were below the average.

In the final step the factors mentioned most often (that is, above average) were clustered by their logical relationships, in order to identify the main clusters of factors in PMO transitions. Details of the analysis results are reported in the next section of this paper.

6. Empirical results

The empirical study aims at obtaining data that will then enable a process analysis. In this view, PMOs are changing through a process of transformation. The empirical study should provide data on such transformations. When looking at the process side, the focus is no longer on the description of each individual PMO, but rather on the transformation from one PMO to the next. Therefore, the unit of analysis is the organizational transformation around a reconfiguration of a PMO. The sample is made up of 17 “organizational transformations” of existing PMOs.

Results from the analysis of empirical data on PMO transformations are presented in two parts. The first part concentrates on the drivers of a PMO transformation. A typology of drivers that lead to the transformations is proposed. The second part proposes three patterns of change, which bear on the whole transformation process from the prevailing conditions, the resulting PMO and the consequences of the change.

6.1. Typology of drivers

So far, we have presented the conceptual framework for capturing the PMO transformation process based on a continuous cycle of conditions, structure and consequences. Conditions act as drivers for a PMO transformation which in turn contains within itself tensions that may be the ingredients for the next transformation. An analysis of the 17 transformations revealed 35 different categories of drivers, which we clustered under six groups of drivers. The six groups and the 35 drivers with their definitions are listed in the Appendix. Fig. 2 presents the typology of these drivers.

When looking in more detail at the conditions as drivers of change, not all of them have the same degree of importance. In each case study, significant conditions for a PMO change have been codified in a grounded theory approach, letting categories emerge from what people said. Table 3 presents the most frequent drivers grouped in the six categories under two integrative types: external and internal environments. Altogether, internal factors and issues are part of the internal context specific at each organization.

Results show evidence of the prevalence of internal drivers. Three factors may have led to an underestimation of the importance of external drivers. First, we have selected events from the external environment that had an impact on the PMO. The numbers reflect only a partial view of the global external environmental analysis. Second, we observed that interviewees in higher management positions often linked external events to

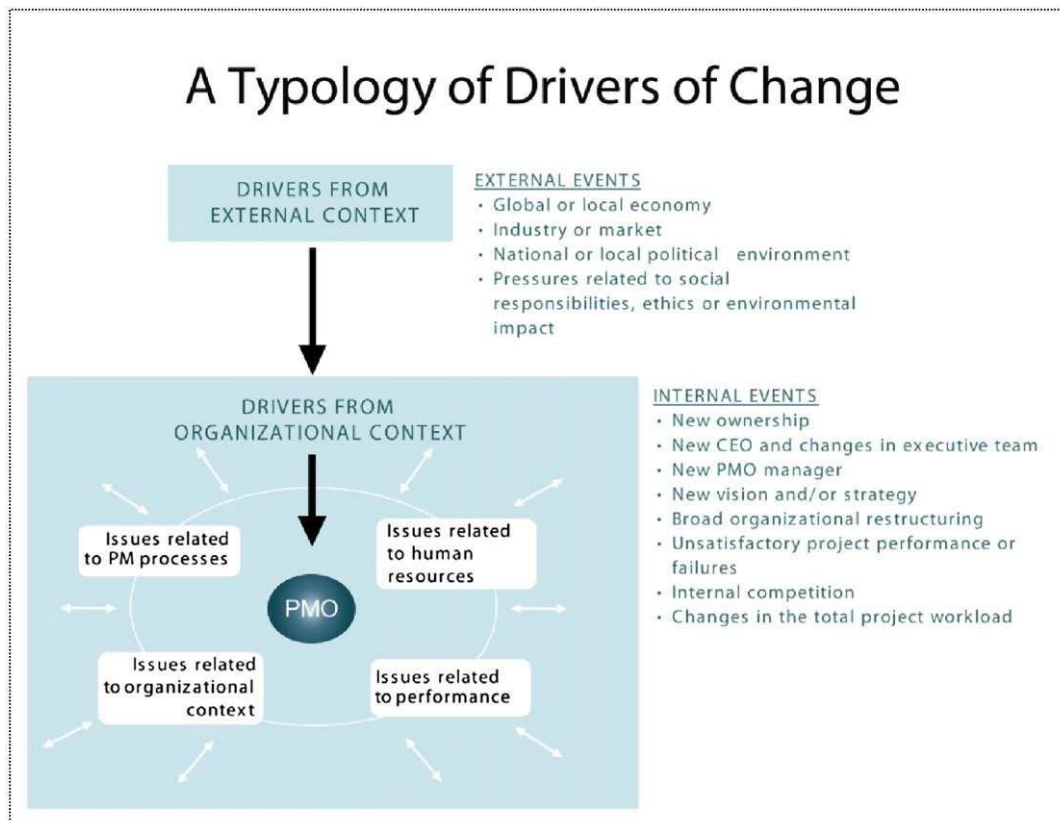


Fig. 2. A typology of drivers of PMO transformations.

Table 3
 Most frequent drivers from case studies.

EXTERNAL			INTERNAL		
1 External factors	2 Internal Factors	3 Organizational context issues	4 Project management process issues	5 Human relations issues	6 Performance issues
Industrial/market factors (13)	Reorganization (11) New CEO (11) New PMO Manager (10)	Client and stakeholder relations (11) New strategy (11) Accountability for projects (10)	Control of project portfolios (12) Standardized project management processes (11)	PM Skills development (13)	Project performance (11)

a PMO transformation. For example, project managers generally focused on their project and were unaware of the global external environment. Third, an external event can have numerous impacts on the internal context of an organization over a long period of time. Despite these qualifying remarks, it is clear that most people interviewed attributed the changes in PMOs to conditions that are internal to the organization.

From Table 3 it can be seen that some drivers are more frequent than others. In the first column, under the external context, only the industrial/market factor has been mentioned often. In 13 cases out of 17, this factor played a role in the PMO transition. Most of the time, looking internally to understand a PMO transition does not suffice. Some external change in the industrial or market environment may have contributed to the PMO change decision. An example of this is found in one of our cases from a telecommunication organization after the dotcom bubble burst. The PMO was centralized with a strong control mandate over projects.

In the second column, there are three factors under the internal factors. Global reorganization, new CEO and new PMO manager altogether are the most important category of internal drivers. They often happen together. When such events occur, there is no reason why the PMO might be stable particularly when the rest of the organization is going through a global reorganization. This is an important result from our case studies that calls into question the stability paradigm for PMOs.

Looking at the third column, issues within the organizational context show that relationships with clients and other stakeholders may lead to a PMO change. This factor refers to the organizational politics in which the PMO is embedded. A PMO from one of our case studies was almost completely forbidden to maintain relationship with the project clients. After a while, this PMO was disconnected from the client reality and lost its legitimacy in the face of business unit managers. A new business strategy could also be a factor contributing to a PMO change. As projects are means to implement a business strategy (Morris and Jamieson, 2004), so are the structure such as PMOs (Pettigrew, 2003). The last factor frequently mentioned is the accountability for projects. PMOs might change to give more or less accountability to certain stakeholders. One example is given in a banking organization when project managers were moved from the central PMO to business unit PMOs in order to give the business unit managers full accountability for project outcomes. Looking now at issues related to project management process in the fourth column, we find that the

control over the project portfolio is the most frequently mentioned as an issue leading to PMO change. The issues mentioned in our case studies refer specifically to the lack of legitimacy for a PMO to make the selection of projects to be included in the portfolio. Other factors could be identified as potential issues such as the allocation of resources between projects. But they haven't been mentioned in our case studies. The second issue in this category refers to the standardization or project management processes. This issue could go in two directions: not enough standardization or too much. In either case, it plays a role in PMO change. This point is taken into account in one of the PMO patterns of change described below.

In the fifth column, we can observe that the human side of the PMO is of great importance in the transition when considering the category of human resources issues. Project manager skill development is a frequent factor in our case studies. The lack of these skills could lead to a change in the PMO. In our case studies, many interviewees highlight the major importance of interrelationship management skills particularly when projects are done more and more in an international context. Finally, in the last column, the project performance issue was mentioned often as a factor for PMO change. Quite often, a PMO change is initiated after major project failures or problems.

It should be noted that there are usually multiple interwoven forces at play at the same time. One condition may be more powerful, but alone, it may not lead to a PMO transformation. Less visible drivers may play an important role, in certain circumstances.

Several executive workshops have been held using this interpretation of PMO changes in Canada, USA, Australia and Europe. The feedback from participants confirmed not only the way the PMO transformation process has been modeled but the relative importance of the drivers as well. Nevertheless, some executives expressed some reserve regarding the word "transformation". They argue for an evolution instead of a transformation. The drivers may stay the same, but it is acknowledged in the organization that the PMO will evolve and it is managed that way. In such organizations, the change process is seen as an evolution. It is difficult to know whether the organizational realities being described are different or whether the organization or national culture may not accept that

there are transformations in the same way that some cultures do not recognize the existence of conflicts. The 17 qualitative case studies were all recognized as transformations. However, there are certainly variations in the degree of change; they may vary from evolutionary to radical and disruptive. The questionnaire currently in use captures variations in the degree of change.

7. Patterns of change

The expression “patterns of PMO change” refers to the direction of the movement from an initial to a new state. The PMO state can be described using its characteristics and functions. Comparing two states of a PMO allows the assessment of movement of a set of characteristics and functions expressed as “more of” or “less of”. This notion of pattern would be useful in identifying a limited number of PMO transformations and then being able to relate them to changes in the external or internal environment or to specific issues. A pattern is defined basically as a model that is proposed for imitation; it can also fall under a complementary definition using the metaphor of the path of a plane or a football (Merriam- Webster, 2007, p. 909). So the PMO patterns are models of transformation paths.

Three patterns of PMO transformation have been identified within the 17 case studies. The intention here is to identify high level patterns showing the internal organizational logic that governs some PMO transformations. The results in the following paragraphs don't focus on giving the detailed PMO characteristics. Each pattern is presented individually, but they often occur simultaneously.

7.1. *Pattern 1. Transition based upon the level of project management standardization*

This pattern refers to project management standardization and is associated more specifically with the PMO function to Develop and implement standard methodologies, processes and tools. From our case studies, eight PMO transformations followed this pattern, which makes it the most prevalent. It could be described as a double transformation going from an over standardization of “one size fits all” project management approach to a flexible approach adapted to the project needs. The first transformation emerges from the acknowledgement of a lack in project management standardization; multiple ways of managing projects coexist within the organization. Usually, projects are under the responsibility of multiple business or functional units. Each of these units has its own processes, methodologies and tools. The impetus for more project management standardization comes from two sources. First, there is the cost of duplication for reinventing the wheel within each unit. Second, the global portfolio management requires common ways of managing projects on specific items such as the phases of the project life cycle or the definition of different types of costs in projects.

The resulting PMO mandate is to implement such project management processes, methodologies and tools throughout all the units of the organization. From our case studies, the strategy

to implement this standardization approach was often done without any change management. Yet, these PMOs gain the support of upper management to make standards compulsory for every single project. In our case studies, there was a real desire to follow project management standards after they have been put in place. But, dissatisfaction grew when experiencing the application of these standards within real projects. Not all projects fit within this rather rigid approach. More than that, the PMO was seen as a bureaucratic entity having project managers completing forms instead of leading their projects. As time went by, the issue, tension and sometimes conflict emerge from this situation. This situation leads to a PMO transformation including a change in the standardization approach. The intensity of the issue, tension or conflict and the period of time between the changes in the orientation vary from one organization to another. In one of our cases, project managers were encouraged to be delinquent.

The modified role of the PMO aims at implementing flexible standards depending on the type, complexity or risk of projects. This is often made possible with a more granular categorization of projects within the organization. Processes, methodologies and tools are revised in order to be simpler and adapted to different realities. Some PMOs from our case studies make this standard renewal very participative. They invite stakeholders to participate in the elaboration of the new standards. This involvement makes the change management easier and the adoption of standards desirable.

In this pattern we focus on PMO transformation regarding project management standardization. This type of change may be part of a more global change. The philosophy of management could also change. For example, the transformation from a compulsory application of standards to a service offering standards involves a profound change in the relation between the PMO and their customers, from a controller to an adviser.

7.2. *Pattern 2. PMO playing between growth and contraction*

Organizations participating in this research were in a growth situation with the exception of two of them. This might translate the global economic situation of growth at the time of the investigation for countries participating in this research. The interest of this pattern is to illustrate PMO transformation in a context of economic change in an industry or a company. The first case happens in telecommunication where the IT bubble burst in 2001 brings almost all companies in this industry into a difficult period, making their survival risky. The second company is a manufacturer who was facing major changes in their product to serve new markets in China and India. Two major projects failed to deliver outcomes. In both of these organizations, the initial situation was the existence of multiple PMOs, basically one in each business unit. Each one was autonomous in their project management standards. When the bad situation was acknowledged at the executive level both transformations were done for project management centralization into one single PMO. Both were then involved in cost control management, to a much greater extent than before. In the first example, the transformation was

due to an external event while an internal event gave the impetus for a PMO change in the second example.

This pattern makes sense by itself and is common for the whole organization. The duplication of efforts is not scrutinized within an organization experiencing strong growth, and money is of lesser concern. More than that, it could rather be encouraged in order to stimulate innovation as in overlapping organization (Nonaka, 1990). But when it comes to survival, cost control becomes a priority. This result is aligned with Pettigrew (2003) where structuring goes along with strategizing. In this sense, the present economic downturn could have possible impacts on business strategy and the number of projects undertaken by organizations and consequently, on project management structures such as PMOs.

7.3. Pattern 3. PMO going agile

This third pattern for PMO change relates to global market competition. It addresses two specific features of the project management, the flexibility of project management processes and methodology and time to market. Here we can observe from our case studies that firms are threatened by their competitors to reduce lead time in the delivery of new features. Project management processes can be implemented to support a sequential or waterfall approach, which could lead organizations to deliver outcomes only after the whole project is completely finished. Pressures from competitors push for shorter delivery. We observe in our case studies a tendency for more experienced PMOs to adopt some new methods borrowed from agile methodology as described in Williams (2005). Projects are split into several marketable pieces. These pieces are tested independently and can be offered on the market in order to bring quick benefits. In one specific case study, the PMO manager was asked to reduce the lead time from more than 12 months to less than 2 months. To do that, the PMO had to change most of its project management processes. It had to abandon the traditional stage gate process with which the PMO felt comfortable. An agile approach was then taken with a process view of short term deliveries with clear customer benefits. Even the role of the project managers changed. Instead of managing a single major project, the project managers were transformed into program managers leading multiple mini-projects. This fragmentation of projects into multiple pieces also calls for solid integration management before and after the development of the project. Before, it is essential that the splitting of the whole project into pieces makes sense under the global product architecture. After, the test of each piece doesn't guarantee the quality of the whole. So, integration of all pieces into a unique product needs specific tests before delivery of a whole product.

8. Discussion

From empirical results, seeing PMO transformations as a process brings new insights in our understanding of this phenomenon. Our methodological approach was to capture the transformation as it unfolds in the organization and not as it is thought or planned. The great variety of PMOs found

in organizations at the present time and the frequent creation and restructuring of PMOs can be interpreted in different ways.

8.1. The evolution or PMO as an organizational innovation

The prevalence of PMOs is an important and relatively recent phenomenon. The great variety and lack of any obvious pattern can easily be interpreted as illustrating the era of ferment. The selection process may have already begun but it is not yet clearly visible. Ad hoc conversations with many different people reveal that a considerable amount of mimicry is taking place. The PMO has become a very widespread and well known organizational phenomenon. In many organizations, people are being given the mandate to implement a PMO without a clear image of what this might entail. The difficulty stems from the great variety of PMOs presently in place and the lack of consensus as to their value. In order for one organization to mimic another, there must be a relatively clear perception of the phenomenon to be reproduced (DiMaggio and Powell, 1983). This is often lacking with PMOs. Therefore, mimicry may partially explain the initial drive to set up a PMO, but it does not provide an adequate explanation of the structure that is implemented. In addition, it cannot explain the instability observed among the population of PMOs.

8.2. PMO life cycle

Life cycle is one of the possible patterns. PMO patterns differentiate from the notion of cycle of life defined as "an interval of time during which a sequence of a recurring succession of events or phenomena is completed" (Merriam-Webster, 2007, p. 310). The best known cycle in the project management field is the project life cycle (Project Management Institute, 2008a). From our case studies, no purposeful evolution has been found in the evolution of PMOs. We rather observe a dynamic movement that brings PMO to fit the global organization logic, which is not necessarily the PMO logic for better project management maturity. One of our case studies shows a loss in project management maturity after a PMO change. From our case studies, we also observed that there is a wish from PMO directors or individuals who recognize the legitimacy of PMOs to envision the future of PMOs as becoming more powerful, working on more projects with a wider mandate.

The evolution of a PMO is not always under the control of individuals who believe in PMOs. It is often just the contrary. From our observations, the PMO is submitted to events from external or internal environment as well as issues, as is the whole organization. Altogether events and issues seem to prevent PMOs from following a clear life cycle pattern. If it does from a higher point of view, many deviations punctuate this path.

8.3. PMOs as manifestations of organizational instability

PMO structures alternate between periods of tension and period of a relative stability. This alternating can be interpreted as "waves of rationality". Hatchuel (1995) depict the history of modern organizations as a cyclical effort to rationalize. In their

perspective, rationalization is a myth, a figure of progress; each new managerial technique bringing a concrete portrait of rational management that is valid for a limited time. Scientific management, operational research, total quality management, business process re-engineering and expert systems are all archetypes of a rational wave. Their typical life cycle begins with a blend of enthusiasm and reluctance that is fed with confused images describing progress or calamities resulting from them. After a few years, first passions are followed by caution and often disillusion. Elements of the new managerial technique survive but are used much more selectively. These authors interpret the history of changes in organizations through the myth of rationality where actors play a central role, the philosophy espoused by senior management playing a central role in shaping the evolution of the organization. The cases examined in the present study provide many illustrations of the role played by the philosophy of management in regulating organizational behavior. From this perspective, implementing a PMO can be seen as a rational effort to implement new managerial techniques. The seventeen examples of the structuring of PMOs examined during this study can be interpreted as waves of rationality or attempts to introduce rationality in the management of projects. Tensions emerging from each new structure slowly erode the rationale upon which the change was based leading to a new wave of rationality implemented through a new organizational arrangement including a new structure for the PMO.

Hatchuel (1995) considers organizations as fundamentally irrational. It is not necessary to adopt this point of view in order to conceive of organizations as constantly restructuring. Pettigrew (2003) has proposed a conceptualization of organizations as continuously going through processes of strategizing and structuring. The constant change is being driven in part by the internal political dynamics of the organizations. It is also being driven by the need to adapt to dynamic environments (Brown and Eisenhardt, 1997). The cases examined in this study provide many illustrations of constantly shifting structures driven both by organizational politics and by adaptation to contextual changes.

Many of the organizations that participated in this study are very mature in project management. It is reasonable to think that the processes of selection and retention of “better” PMO structures would be more visible in organizations that have considerable expertise in project management. One of the organizations has had four different PMOs over a twelve year period. Two others have had three PMOs over eight and ten year periods. Yet no discernable pattern was found. This may be because the sample is small or because the processes of selection and retention require more time. This may also illustrate the unstable nature of organizational structures.

In all, no one and unique theory of organizational change can apply in all circumstances. Our results tend to show that constructivist mode of change is prevalent over the prescribed change.

9. Conclusion

that the PMO is deeply embedded in its host organization, and that the two actively take part in the transforming process. This result is in line with the research on the value of project management where a “fit” should exist with the organizational context (Thomas and Mullaly, 2008). The study also shows that internal events and tensions are among the primary drivers behind the reconfiguration of PMOs. The playing out of these drivers brings into focus the importance of organizational politics. The analysis shows that PMOs and more generally the structures put in place to manage multiple projects are part of a political system that plays an important role in organizations (Morgan, 1989). In the project management literature, power and politics are often treated with an instrumental approach through risk management and stakeholder management (Magenau and Pinto, 2004). The analysis here shows that power and politics should be examined at the organizational level and integrated into organizational project management.

Theories that seem to be most relevant to explain PMO transformations are associated with the constructive mode of change rather than prescriptive. The PMO could be considered as an organizational innovation in the sense that it is a recent and important phenomenon. But if it is an innovation, it is unstable and still evolving both in individual organizations and in the population of organizations as a whole. If the institutionalization process is at work, the results are not yet visible. Seeing the PMO transformation as a life cycle didn't fit with what has been observed in our case studies as the changes unfold. PMO transformations happen rather as an answer to drivers coming from external and internal contexts. Only three patterns have been identified in their dynamics of evolution. These patterns do not identify the specific configuration of each PMO involved in the change.

Results from these 17 case studies face the limits associated with generalization to a larger population. For this reason, a second phase of this research is going on based upon survey data. It is also suggested that other research be undertaken to solidify the theory foundation of the project management governance school of thought.

Appendix A

Categories of factors.

<u>Main category</u>	<u>Category</u>	<u>Definition</u>
Demographics	Researchers assessment of maturity level	The researcher's evaluation of the overall project management maturity of the organization. Measured from 1 to 5, with 1 being very low and 5 being very high
	Overall approach to PMO	Describes the overall PMO strategy, such as tactical or strategic, as well as the level of enterprise wide or local PMO.
External factors	Economic	Above average changes in production, exchange, distribution, and consumption of goods or services on a national or international basis.

Appendix A (continued)

Main category	Category	Definition
Internal factors	Political	Change in government policies or appearance of international laws or standards, such as Basel II or Sarbanes-Oxley.
	Social responsibilities	Ethical or ideological factors external to the corporation.
	Customer	Factors stemming from a company's customers or clients.
	Growth in projects	A significant increase in the number or size of projects within an organization.
	New owner or merger	A change in corporate ownership, such as a take-over of merger.
	New strategy	A recent change in strategy (both corporate or business unit level)
	Reorganization	A recent reorganization affecting the PMO
	New CEO	A recent change in the Chief Executive Officer (CEO) or head of the corporation
	New member of Executive Board	A change or joining of a new member of the board of directors of the corporation
	New PMO Manager	Changes or appointment of a new PMO manager
Context issues	Project failure	Change or constantly high failure rate in projects
	Complexity in projects	Change in complexity levels of projects
	Internal competition	Factors related to inter-organizational rivalry, competition or other forms of out-performing other parts of the organization
	Political issues	Factors of organizational political nature
	Organizational commitment for project management	Factors of organizational commitment for project management as a discipline
	Client and stakeholder relations	Factors related to the relationship with customers, clients or other stakeholders of the firm
	Project management collaboration with line organization	Factors related to the way line and matrix management work together and interact
	Accountability for projects	Factors related to new accountabilities for projects and their results
	Synergy among project managers	Factors related to changes in or intentions to achieve synergies among and across PMOs
	Process-issues	Innovativeness
PMO costs		Factors related to changes in real costs or evaluation thereof
Agility		Factors related to the use of Agile/Scrum or other new methodologies
Standardized project management process		Factors related to the application of standardized processes and compliance with it
Control of project portfolio		Factors related to the change in control of the project portfolio
Skill allocation		Factors related to the change in assigning skills to projects
Maturity in project management		Factors related to the organizational maturity in project management

Appendix A (continued)

Main category	Category	Definition
Outcome (performance)-issues	Project alignment with strategy	Factors related to the alignment of projects with the organization's strategy
	Project performance	Factors related to project deliveries and results
	Business performance	Factors related to the business performance of the organization
	HR perspective	Factors related to human resources and their management
	PM skills development	Factors related to the development of project management skills within the organization.

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