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# The Role of Project Management Offices (PMOs) in IS Project Success and Management Satisfaction

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## Article Classification: Research Paper

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## **Abstract**

**Purpose:** Organisations are increasingly using project or programme management offices (PMOs) to co-ordinate activities across information system (IS) projects. This paper explores how the presence of PMOs and their involvement in IS projects relates to project success and to senior management satisfaction with those projects.

**Design/methodology/approach:** The study uses an exploratory survey method to consider the relationship of both the presence of a PMO and the involvement of the PMO in five key practices that span the project life-cycle on project success and management satisfaction.

**Findings:** Counter-intuitively, it is found that the presence of a PMO reduces senior management satisfaction with IS projects and has no effect on the overall success rates of those projects. The study draws on ideas of escalation of commitment to explain this finding.

**Practical implications:** The findings suggest that it is more important for PMOs to be involved at the start and at the review stage of projects, rather than in the on-going monitoring, which is where much of their current focus is.

**Originality/value:** This study is the first that we are aware of, to identify a reduced level of management satisfaction associated with the presence of a PMO. It is also the first study to consider PMO involvement at the level of key project practices and hence to be able to suggest how to understand and address the reduced management satisfaction identified.

**Keywords:** project management office; PMO; IS project success; management satisfaction, escalation of commitment

## Introduction

Organisations are increasingly using projects or programmes as a means of achieving strategic change. Given the important role information systems and information technology (IS/IT) play in modern organisations many of these projects involve significant investment in new systems and technology. The combination of the multitude of projects being undertaken and the complexities of managing them has resulted in many organisations attempting to improve control, coordination and in some cases, rationalisation of these projects, by establishing project (or programme) management offices (PMOs) (Singh et al, 2009; Artto et al, 2011; Martins and Martins, 2012). According to Anderson et al (2007 p.98), a consistent theme across PMOs is to enable '*a systematic coordination and unified handling of key project-related tasks*', in order that organisations can be more successful in the projects they undertake.

Extant research has shown that the number of PMOs being formed in organisations is growing (Hobbs and Aubry, 2007; Hobbs et al, 2008; Spelta and Albertin, 2012), suggesting that organisations believe that these are effective means of addressing the challenges of the growing number and complexity of projects that they are undertaking (Aubry et al, 2008; Aubry and Hobbs, 2010). However, others are questioning the value of PMOs (Hoffman, 2003; Hurt and Thomas, 2009; O'Leary and Williams, 2008).

Whilst previous studies have identified a range of activities undertaken by PMOs (Desouza and Evaristo, 2006; Hobbs and Aubry, 2007), they have not examined the

impact of PMO participation in these activities on project success or management satisfaction. This study contributes to an understanding of the role and impact of PMOs in information systems (IS) projects, by exploring the practices they participate in and the extent to which this participation contributes towards satisfaction with those practices and overall project success and senior management satisfaction. Previous research (Stanleigh, 2006) has found that 75% of PMOs in the IS domain were shut down within three years of formation because they failed to demonstrate their value, whilst other research highlights the frequent changes to the form of PMOs (Aubry et al, 2010a; 2010b). An understanding of the impact of PMO involvement at the practice level can aid managers in identifying how they should focus the efforts of their PMO to ensure that they add value. Investigation of management satisfaction with PMOs has not previously been undertaken, but understanding management satisfaction is important if PMOs are going to survive within their organisations.

## **Literature Review**

### **Project and Programme Management Offices**

The Project Management Institute (PMI) (2008, p.11), defines a project management office as:

*An organisational body or entity assigned various responsibilities related to the centralised and coordinated management of those projects under its domain. The responsibilities of the PMO can range from providing project management support functions, to actually being responsible for the direct management of a project.*

Other terms are also used for the organisational entities described by the definition above, including programme management office and project or programme management centre of excellence (Office of Government Commerce, 2008).

A PMO may be established to support a single large project or programme or to coordinate multiple unrelated or loosely related projects. The latter may deal exclusively with one area of an organisation's projects, such as new product development or information systems and technology or may have a role that encompasses all major projects and programmes, sometimes termed 'enterprise' or 'corporate' PMOs (Aubry et al, 2008; Aubry et al, 2010a).

Whilst Singh et al (2009) observe that the PMO '*has a long history dating back to the 1930s*' (p.411), doValle et al (2008) note that their uptake has become marked since 2003. A survey reported by Hobbs and Aubry (2007) showed that half of the PMOs surveyed were less than two years old, leading them to conclude that whilst the number of newly formed PMOs is growing, existing PMOs are also being shut down or reconfigured at an almost equal rate (Aubry et al, 2010a; 2010b). This disbanding or reconfiguration is confirmed by Pellegrinelli and Garagna (2009), who argue that PMOs are organisational constructs created in response to a perceived need and '*as that need is progressively addressed, the relevance and value of the PMO decreases*' (p.649). Aubry et al (2010a) suggest that internal politics and power systems may also play a part in dissatisfaction with the performance of a PMO, resulting in pressure for it to be disbanded or changed in form.

## **Activities of PMOs**

Previous studies (Desouza and Evaristo, 2006; Hobbs and Aubry, 2007; Pemsel and Wiewiora, 2012) have identified high-level activities commonly undertaken by PMOs, with particular focus on activities that span multiple projects. For example, in their empirical study, Desouza and Evaristo (2006) identify the activities shown in Table 1.

**Take in Table 1 about here.**

As noted, these previous studies emphasise activities that span multiple projects and establishing the relationship between any of the identified activities and project success and management satisfaction is hampered by the high-level and broad nature of the activities. As a result previous studies have not linked individual activities or practices with measures of success or satisfaction.

Whilst such project spanning or coordination activities are an important part of the role of PMOs, previous studies have also highlighted the role of PMOs in improving the delivery of individual projects (Stanleigh, 2006; Liu and Yetton, 2007; Unger et al, 2012). Studies have identified a number of practices that are important to achieve success from IS projects: that is achieving the benefits that justified the investment as well as delivering the project to time, quality and cost expectations (National Audit Office, 2006; Peppard et al, 2007). A number of practices which span the project life-cycle from project planning to review, were adopted for this study:

1. Identification and quantification of the investment benefits
2. Planning technology implementation

3. Planning business changes and benefit delivery
4. Post Implementation Review (PIR) of Time, Cost and Quality (TCQ)
5. Post Implementation Review (PIR) of changes and benefits

It should be recognised that there are important additional practices that fall within the five practices selected for study. For example, management of the required business changes and of the technology implementation (Ashurst et al, 2008). However, recognising the exploratory nature of the study, a balance was sought between the number of practices explored and being able to consider the entire project life-cycle.

The focus on the practice involvement of PMOs is consistent with the theoretical paradigm of management-as-practice (Orlikowski, 2002; Kostova and Roth, 2002; Whittington, 2006). The management-as-practice perspective focuses on what the members of an organisation *do* as opposed to what the organisation *has* in terms of strategy, structures or resources (see for example Johnson et al, 2003). Whittington (2006) proposes that three elements of a theory of practice may be isolated: praxis, practices and practitioners. Jarzabkowski (2005) suggests that each of these three elements comprises a different analytic choice and entry into the study of strategy as practice. Whilst the practice perspective has been considered in areas of management such as strategy and marketing, only limited use of this theoretical lens has been made in the project management domain (for example, Cooper et al, 1999 and Manning, 2010).



## **Effectiveness of PMOs**

Historically the rate of success for IS projects, in terms of delivering the benefits that justified the investment has been around 30% (McAfee, 2003; National Audit Office, 2006; Nelson, 2007). The majority of the activities of PMOs identified in Table 1 above seek to improve project performance by, at least, preventing or reducing failures. However, Singh et al (2009) identify a significant number of challenges facing organisations in establishing or sustaining a PMO, including difficulties in evaluating the effectiveness and a lack of recognition of the value of a PMO in an organisation. Aubry and Hobbs (2011) suggest the multi-dimensional competing values framework as a framework to evaluate the contribution of a PMO, whilst Desouza and Evaristo (2006) suggest that PMO contribution can be measured from a project-centric (efficiency), PMO-centric (service) or business value-centric (success) perspective. This research considers the contribution of PMOs from last of these perspectives.

Previous studies have adopted survey based approaches to determine if the existence of a PMO within an organisation is associated with improved project performance. Dai and Wells (2004) found no link between these whilst Martin et al (2007) found a weak link, with the existence of a PMO being associated with adherence to project budgets, but not to project timescales or improved project quality and Unger et al (2012, p.617) found '*a strong positive and direct effect....on single project success*'. In a qualitative study, O'Leary and Williams (2008) found the introduction of a project and programme management Centre of Excellence (CoE) did not lead to improved project outcomes when it introduced standard project methodologies in the

organisation, since adoption of these policies by business colleagues tended to be more symbolic than substantial. Rather, these authors found that project outcomes only improved when the CoE was reconfigured to include a team of *'highly skilled, experienced project managers...to intervene directly as required in problematic projects'* (p.563). These mixed findings suggest that a more nuanced exploration of success, for example at the level of involvement in practices may be insightful.

## **Research Aims**

This study explores how the involvement of a PMO is related to overall project success and management satisfaction with the projects supported and influenced by the PMOs activities. It also explores how the involvement of PMOs in specific practices is related to overall project success and management satisfaction and subsequently the extent to which PMO involvement at the individual practice level is associated with satisfaction with the practices themselves. This combination of analyses helps understand the extent to which the PMO has a direct or an indirect effect on project success and management satisfaction. The study then seeks to find explanations from extant project management literature for the associations and relationships found and to establish a basis for further research.

## **Research Design and Survey Instrument**

This study is the first to investigate the relationship between the existence of a PMO and management satisfaction with IS projects and the involvement of the PMO in specific project practices across the project life-cycle. In order to gain an overview of the areas of interest across a number of organisations, an exploratory survey approach

was adopted for the study. The findings of such initial explorations can then be used to frame increasingly detailed studies (Bryman, 2004). Whilst surveys are often associated with confirmatory studies, suitably designed surveys are also an accepted means of establishing an initial overview of a domain of interest (for example in the field of IS project management: Agarwal and Rathod, 2006).

The study considered multiple project PMOs that were primarily concerned with IS projects or projects that had a large element of IS within them. Many projects within organisations have a significant element of IS, hence such PMOs can be expected to cover a significant proportion of organisational project activity (Singh et al, 2009). The implications of the findings for PMOs in other functional areas are discussed later in the paper.

Data collection for the study was undertaken in two parts. The first data collection, which consisted of a number of other practices involved in IS investment management in addition to the role and activities of PMOs, used a web-based survey as the research instrument. Findings from this survey, but not including those related to PMOs, have been published elsewhere (*reference would identify authors – will be supplied*). The second data collection was based on a shorter version of the same questionnaire.

The two survey instruments used were tested before use. A number of practising managers (n= 4 – 6) with experience of IT projects and PMOs were asked to complete the draft instruments and to provide feedback to the researchers. This testing allowed ambiguity in the wording of certain items to be clarified.

In the final versions of the survey instruments, respondents were asked for general information about themselves and their organisations, including whether it had a PMO. The main section of the survey was based on the project practices presented in section 2.2. Respondents were asked to what extent the PMO was involved with each of these practices. Responses were collected via a 5-point Likert-scale (1 = never, 5 = always). Respondents were also asked to indicate how satisfied the organisation was with the performance of these practices. Again, responses were collected by means of a 5 point Likert-scale (1 = completely dissatisfied, 5 = completely satisfied).

Respondents were also asked about two overall measures: the overall success rate of their organisations' IS projects and their view of the organisation's senior management's overall satisfaction with the results of those projects. The measurement of success of IS projects has been recognised as a complex issue, for example, DeLone and McLean (1992) identify six distinct variables which can be used to measure IS success. Studies of the use of IS have stressed that the realisation of the benefits included in the investment business case is the main basis for the justification of the project (Peppard et al, 2007), and the achievement of the expected benefits is the prime criterion used by executive management to assess success (Nelson, 2005). Hence in this study, the realisation of benefits was used as an overall measure of project success. A self-reported measure of benefits achieved was employed since previous studies (for example, Iacovou et al, 1995) have identified that it is the perceived benefits that are critical in the adoption and continuing use of IS. Also, the majority of PMOs, including those participating in this study, are responsible for varying numbers of projects that span a range of sizes and degrees of

complexity. A self-reported, benefits-based approach allows respondents to base their judgement of success on a comparison of their perception of the benefits achieved with the expected benefits. This relative perception of success accommodates varying numbers, sizes and complexity of projects. Hence, in order to estimate overall success of the projects, respondents were asked to estimate the percentage of projects that delivered the expected business benefits. Respondents could indicate whether this was below 25%, between 25% and 50%, between 50% and 75% or over 75% of projects or that they did not know.

Based on similar reasoning and consistent with previous studies of management satisfaction with practices related to project management (Cooper et al, 1999), a self-reported measure was adopted for senior management's satisfaction with the overall value delivered from the organisation's IS projects. Respondents were asked to indicate this on a 5 point Likert-scale (1 = completely dissatisfied, 5 = completely satisfied). The relevant survey items are shown in Appendix 1.

The survey did not ask when the PMO was formed, since a number of studies have emphasised that organisations frequently reconfigure their PMOs (Pellegrinelli and Garagna, 2009; Aubry et al, 2010a; 2010b). The age of the PMO could not therefore be taken as an indicator of the PMO's expected role, the activities it was likely to undertake or its affect on project success. Rather, as described above, the survey explicitly asked respondents to indicate the activities or practices that their PMO was involved in.

## **Population and Sample**

In the first data collection, approximately 1,900 managers from organisations in mainland European and 500 managers from UK organisations were invited to participate through personalized e-mails. The target candidates were selected using the corporate databases of two European business schools. Individuals who, according to their specified job role were senior managers with significant involvement in IS projects and programmes were selected. This ensured that the target candidates were sufficiently knowledgeable about IS project and programme management in their organisations, including the existence and operation of a PMO, to answer the survey instrument accurately and fully. Only one individual in an organisation was invited to participate. One hundred and two (102) completed responses were received (response rate = 4%).

In the second data collection senior managers who had attended workshops on the subject of IS management at the same business schools were invited to complete the shorter questionnaire. Again, respondents were senior managers, whose roles included significant involvement in IS projects and programmes. Of some 70 participants representing different organisations, 55 completed questionnaires were returned (response rate = 79%). In total this produced a combined sample of 157: the majority from the UK, Belgium, Luxembourg and the Netherlands, but including a number from other countries. Of these 157, 27% identified themselves as exclusively business managers, 39% as IS/IT managers and 34% had business and IS/IT responsibilities.

As noted above, both survey instruments included many items not directly relevant to this study of PMO practices. The first survey instrument was considerably longer and more complex than the second, which caused the relatively low response rate. The instrument used in the second data collection was shorter and hence led to a greater response rate.

## **Data Analysis and Findings**

Few meaningful differences were found between key characteristics of the two samples according to Chi-squared tests in terms of location, business size or sector and respondents' roles (see Appendix 2). The following analysis therefore includes the combined sample (N) of 157 organisations. Whilst it is recognised that this is not a large sample, it is sufficient to generate statistically significant results for the analyses undertaken. It is also consistent with other similar survey based studies (Angeles, 2009: N = 155; Janvrin et al, 2009: N=72; Liu and Yetton, 2007: N=90).

Rather than test an *a priori* model, relationships between the constructs of interest were elicited using statistical techniques of cross-tabulations and correlations, which are consistent with the exploratory approach of the study.

### **PMO and overall project success and management satisfaction**

Of the overall sample, 69% of the organisations had a PMO, a figure that was very similar across all sectors – manufacturing, services and the public sector. As shown in Table 2, a correlation analysis of the presence of a PMO with the expressed overall success rate of projects showed no significant relationship. This finding is consistent

with earlier studies (Dai and Wells, 2004; Martin et al, 2007), who found that having a PMO did not appear to improve the success of projects.

Table 2 also shows the results of the correlation of the existence of a PMO with senior management's satisfaction with the overall value realised from the projects, an aspect not explored in previous studies. Interestingly this shows a significant but negative relationship, suggesting management are less satisfied in organisations that have a PMO, compared to those that do not.

As might be expected, Table 2 also shows that project success and management satisfaction are positively related, suggesting that, in most cases, management are aware of the success of projects within their organisations and respond favourably to greater levels of success.

Take in Table 2 about here.

The results presented in Table 2 therefore suggest that, as others have found, having a PMO is not related to the success of projects but, perhaps unexpectedly, it is related to a reduction in management satisfaction. This may have two explanations: the PMO may be relatively new and has been set up because of management dissatisfaction with the current situation; or it may be that the management of organisations with PMOs get more information about poor project performance, leading to increased levels of dissatisfaction. We will return to this subject in the conclusion section of the paper.



This counter-intuitive finding suggests a need to explore the role of the PMO in more depth: the practices performed by PMOs and how these may be related to overall project success and management satisfaction.

### **PMO involvement in the project practices and overall project success and management satisfaction**

A correlation of PMO involvement in the five project and benefit realisation practices presented in section 2.2 and overall project success and management satisfaction is shown in Table 3.

(Note: Table 2 includes the whole sample (N=157), whilst Table 3 includes only organisations with a PMO (N=109). This is because Table 2 shows the relationship between the presence of a PMO, or not, and overall success and management satisfaction and hence includes the entire sample. In contrast, Table 3 considers the relationship between specific practices carried out by PMOs and these overall variables and hence is limited to organisations with a PMO)

Table 3 shows that PMO involvement in two of the five practices investigated is positively and significantly correlated to both project success and overall management satisfaction (shaded cells) - identifying and quantifying the benefits and the post implementation review of changes and benefits. It would seem therefore that success and management satisfaction is dependent on the PMO involvement at either end of the project life-cycle, in both identifying the benefits at the start of projects and evaluating whether they have been achieved at the end.

Interestingly the involvement of the PMO in post-implementation TCQ reviews is not directly related to project success or management satisfaction, although the role of many PMOs specifically includes project performance monitoring and evaluation. Also the involvement of PMOs in planning both technology and business changes and benefit delivery appears to have no direct effect on the success rate of projects or management satisfaction.

As shown in Table 3, each of the individual practices has its own relationship with the two overall success and satisfaction variables. However other factors in addition to the involvement in the individual practices may contribute to overall project success and management satisfaction, such as the involvement in the other practices. Hence in order to relate satisfaction more closely with the PMO involvement in the practices, an analysis of how PMO involvement is related to satisfaction with those practices was undertaken.

Take in Table 3 about here.

### **PMO involvement in practices and satisfaction with those practices**

Table 4 shows a correlation of involvement in the five project practices listed above and the respondents' expressed levels of satisfaction with how well those practices are performed in their organisations.

This analysis shows that greater PMO involvement in the planning of business changes and benefits delivery is positively and significantly related to satisfaction

with identifying and quantifying the benefits (single shaded cell). This would suggest that PMO involvement in defining how benefits will be delivered through business changes gives increased confidence in and hence satisfaction with the benefits that have been identified. However, and perhaps surprisingly, given the relationship between involvement of the PMO in identifying and quantifying the benefits and overall project success and satisfaction (shown in Table 3), its involvement in the practice of identifying benefits is not related to higher levels of satisfaction with that practice itself. Taken together with the point about PMO involvement in planning business changes and benefits delivery, this suggests that managers within organisations view the identification of benefits expected from projects as a business responsibility, even if the PMO is involved, but do value the involvement of the PMO in identifying how those benefits will be realised.

Take in Table 4 about here.

Table 4 also shows that greater PMO involvement in the post implementation review of benefits and changes is positively and significantly related to satisfaction with all five practices considered (linked shaded cells). Hence it would appear that satisfaction in earlier stages in the project life-cycle is dependent on PMO involvement at the later stages. This would suggest that the PMO contribution to practice satisfaction is largely indirect rather than direct, as will be discussed further in the next section.

## **Discussion of Findings**

When comparing organisations with and without PMOs there were no significant differences in the levels of project success described by the respondents, but there was a significant negative correlation between the presence of a PMO and management satisfaction. This lack of management satisfaction can be understood from a consideration of the theory of de-escalation of projects. Amongst other factors, de-escalation is associated with reduced tolerance for failure and more awareness of problems with projects arising from greater clarity in success criteria, more regular evaluations and more outcome orientated evaluations (Keil and Robey, 1999; Montealegre and Keil, 2000). He and Mittal (2007) also highlight the link between the amount and nature of information about a project de-escalation and studies by Pan et al (2006) and Unger et al (2012) both associate escalation with poor project evaluation and lack of information. This suggests that good project evaluation and full information, which can be provided by a PMO, is likely to be associated with de-escalation or lack of satisfaction. Provision of project information, more awareness of problems and more thorough evaluation are all normally included in the activities of a PMO, which could produce the higher level of management dissatisfaction identified in this study. The identified lack of management satisfaction also accords with Aubry and Hobb's (2011) finding that of a range of types of staff, executives assigned a low importance to the contribution of PMO's to organisational performance.

In contrast, analysis of PMO involvement in specific practices in the project life-cycle revealed that PMOs can contribute to both success and satisfaction. Those practices where PMO involvement is positively associated with both overall project success and management satisfaction are at the two ends of the project life-cycle. That is, identifying and quantifying benefits at the start of a project and then review of the

changes and benefits achieved once the project has been implemented (Table 3). The former of these is consistent with the findings of Arrto et al (2011), who emphasise the role of PMOs at the 'front end of innovation'.

Additionally involvement in the later stages of the project life-cycle appears to positively influence satisfaction with practices at the earlier stages of projects (Table 4). There are two possible mechanisms for this, both of which could be present at the same time. Firstly, the expectation of external and expert review of a project, in the form of PMO involvement, may well be expected to lead to greater effort in the earlier stages of the project, leading to greater satisfaction with these earlier stages. Equally PMO involvement in planning the benefits and changes can ensure the benefits claimed in the business case are more realistic, thereby improving the likelihood they will be achieved. These effectively are 'within' or 'intra-project' effects. Also, PMO involvement in benefits and change planning and reviews can provide learning that can be used to improve the benefit identification and realisation in subsequent projects, which is effectively an 'across' or 'inter-project' effect. This is consistent with Liu and Yetton's (2007) finding that PMOs involvement in project reviews facilitates cross project learning and Pemsel and Wiewiora's (2012) characterisation of PMOs as organisational knowledge brokers.

The lack of significant relationships between PMO involvement in technology and business change planning with overall project success and management satisfaction (Table 3), despite these activities being identified in previous studies as important, may simply reflect that our small sample did not evidence such a relationship. However, it may suggest that these activities are best led by other groups in the

organisation. That is, IS/IT experts would lead technology planning and business managers would be the most able to identify the changes in the business necessary to realise the benefits from the project. Similarly the lack of significant relationship between PMO involvement in post implementation TCQ reviews and project success and management satisfaction may again be due to lack of statistical power. However, it supports previous studies that suggest TCQ reviews are not linked to a benefits view of project success (Tallon et al, 2000; Ashurst et al, 2008) and management satisfaction is primarily determined by benefits delivery (Nelson, 2005).

Our analysis of the involvement of PMOs in these project life-cycle practices and the consequent satisfaction with the performance of those practices, suggests how the lack of management satisfaction identified in this study can be addressed. When the PMO is involved in activities to inform management of the final outcome of investments, through post-implementation review of business changes and benefits realised, management satisfaction increases. Our data suggests that this, in conjunction with PMO involvement in identifying and quantifying benefits earlier in the project improves the success rate of IS projects. It is reasonable to assume that involvement in benefit reviews increases the PMO's knowledge of both the benefits that are possible and how they can be achieved.

## **Conclusions and Research Contribution**

Although the PMO, or variations of the concept have existed for many years the rapid increase in the number of PMOs established in recent years suggests that organisations envisage they can contribute to the achievement of their strategies by

improving the success rate of IS projects. In the last few years PMOs have also been the subject of an increasing number of research studies (e.g. doValle et al, 2008; Pellegrinelli and Garagna, 2009; Singh et al, 2009). However, to date there have been few studies exploring whether or how PMOs actually contribute to the levels of project success and management satisfaction, even though the inability to evaluate a PMO's contribution can affect its continued existence (Singh et al, 2009).

We used a form of business value-centric (Desouza and Evaristo, 2006) assessment to explore how the practices and activities that PMOs are involved in affect the level of satisfaction with those practices and also the overall levels of project success and senior management satisfaction. In turn, this provides insights into how a PMO can contribute to the achievement of those aspects of organisational strategies that depend on delivering projects successfully.

The study identified a negative link between the presence of a PMO and management satisfaction and draws on escalation of commitment literature to explain this counter-intuitive finding. The study suggests that this negative association can be avoided by PMOs being involved in individual project practices at both the start and end of projects, with involvement in review of changes and benefits at the end of projects being particularly important at improving project success, which in turn improves management satisfaction.

The results provide support for earlier studies that have found PMOs carry out different combinations of activities and have differing degrees of influence within the organisation (e.g. Hobbs and Aubry, 2007). However, it extends these earlier studies

as it links involvement in specific practices with satisfaction with those practices and in turn with their impact on overall project success and management satisfaction.

### **Implications for Managers**

For managers considering establishing a PMO, or already managing a PMO, the findings of this study indicate that they should be aware that formation of a PMO is likely to be associated with a greater degree of scrutiny and less tolerance by senior management, as they become aware of problems with projects. Formation and operation of a PMO may therefore feel uncomfortable to those in the PMO and those involved in projects.

The findings of the study also indicate that, to improve project success and management satisfaction, the PMO should focus on those practices at the start and end of the project life-cycle, with particular emphasis on the review of benefits and changes at the end, since this has been shown to positively influence satisfaction with all other stages in the life-cycle. As stated previously, many PMOs focus their efforts on monitoring progress during execution of the project, rather than being involved in the practices at the start and end of the project life-cycle.

### **Research Limitations and Directions for Further Research**

The research has a number of limitations and also raises opportunities for further research.



We did not make an a priori assumption about the relationship of PMO involvement and project success or management satisfaction, nor was the design of the study based upon the notion of escalation of commitment from the outset. Consistent with our exploratory design, we adopted an inductive approach and then sought theory that could explain the findings of the study (Bryman, 2004). Building on those findings, others could use escalation of commitment concepts to frame further studies of the role of PMOs.

More in-depth study of a range of types of PMOs in different organisational contexts, through both retrospective and longitudinal case studies, would provide more insights and practical guidance on how to create, organise and sustain a PMO that makes a significant contribution to value realisation from IS investments. The PMOs in this survey were specifically involved in supporting the implementation of IS projects and programmes in their organisations, although some may have had a broader remit to cover other projects and programmes. IS projects are increasingly frequently described as 'IT-enabled change projects', since they usually involve both technology and business changes. The findings from this research are therefore likely to apply to PMOs supporting other types of change projects which are aimed at achieving explicit organisational benefits. The findings apply less well to PMOs supporting, for example, a range of new product development projects, where uncertainties are greater, timescales are less predictable and the criteria for assessing success are less explicit. Equally the findings are, at least in part, less applicable to PMOs in consultancy organisations whose primary role is carrying out projects on behalf of others, since the client may be responsible for some key aspects of the life cycle, especially those associated with the benefits.

As observed in extant studies, there are a number of different types of PMOs, established for different purposes. For example, Hobbs and Aubry (2008) argue for establishing a typology of PMOs that reflects their variability in purpose and characteristics. Recognition of this variation in structure and role should be incorporated in future studies in order to help align their activities to the organisational context in which they operate and enable their performance and contribution to be assessed more rigorously.

It may be expected that the impacts of a PMO may lag behind its formation. Although O’Leary and Williams (2008) show that this the lag may be relatively short (6 months or less), given that other studies identify the frequent reconfiguration of PMOs (Hobbs and Aubry, 2007; Pellegrinelli and Garagna, 2009), further studies could identify how the changes in PMO formation influence their role and their impact on project success and senior management satisfaction.

## References

- Andersen, B., Henriksen B., & Aarseh, W. (2007). Benchmarking of project management office establishment: extracting best practice. *Journal of Management in Engineering*, Vol. 23, No. 2, pp. 97-104.
- Angeles, R. (2009). Anticipated IT infrastructure and supply chain integration capabilities for RFID and their associated deployment outcomes. *International Journal of Information Management*, Vol 29, No. 3, pp. 219-231.
- Agarwal, N., & Rathod, U. (2006). Defining ‘success’ for software projects: an exploratory reevaluation. *International Journal of Project Management*, Vol 24, No. 4, pp. 358-370.
- Artto, K., Kulvik, I., Poskela, J. & 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. 408-421.

- Ashurst, C., Doherty, N.F. & Peppard, J. (2008). Improving the impact of IT development projects: the benefits realization capability model. *European Journal of Information Systems*, Vol 17, No. 4, pp. 352–370.
- Aubry, M. and Hobbs, B. (2011). A fresh look at the contribution of project management to organizational performance. *Project Management Journal*, Vol 42, No. 1, pp. 3-16.
- Aubry, M., Hobbs, B., Müller, R., & Blomquist, T. (2010b). Identifying Forces Driving PMOs Changes. *Project Management Journal*, Vol. 41, No. 4, pp. 30-45.
- Aubry, M., Müller, R., Hobbs, R., & Blomquist, T. (2010a). Project management offices in transition. *International Journal of Project Management*, Vol 28, No. 8, pp. 766-778.
- Aubry, M., Hobbs B., & Thuillier D. (2008). Organisational project management: an historical approach to the study of PMOs. *International Journal of Project Management*, Vol. 26, No. 1, pp. 38-43.
- Aubry, M., Müller, R., Hobbs, R., & Blomquist, T. (2010). Project management offices in transition. *International Journal of Project Management*, Vol 28, No. 8, pp. 766-778.
- Bryman, A. (2004). *Social Research Methods*, UK, Oxford University Press.
- Cooper, R. G., Edgett, S. J., & Kleinschmidt, E.J. (1999). New product portfolio management: practices and performance. *Journal of Product Innovation Management*, Vol. 16, No. 4, pp. 333-351.
- Dai, C. X. Y., & 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. 523-532.
- DeLone, W. H., & McLean, E. R. (1992). Information systems success: the quest for the independent variable. *Information Systems Research*, Vol. 3, No. 1, pp. 60-95.
- Desouza, K. C., & Evaristo, J. R. (2006). Project management offices: a case of knowledge-based archetypes. *International Journal of Information Management*, Vol. 26, no. 5, pp.414-423.
- doValle, J. A., & e Silvia, W., Soares, C. A. P. (2008). Project management office (PMO) – principles in practice. *ACEE International Transactions*, PM.07, 1-9.
- Gunn, R., & Williams, W. (2007). Strategic tools: an empirical investigation into strategy in practice in the UK. *Strategic Change*, Vol. 16, No. 5, pp. 201-216.
- He, X., & Mittal, V. (2007). The effect of decision risk and project stage on escalation of commitment. *Organizational Behaviour and Human Decision Processes*, Vol 103, No. 2, pp. 225-237.

Hobbs, B., & Aubry, M. (2007). A multi-phase research program investigating project management offices (PMOs): the results of phase 1. *Project Management Journal*, Vol. 38, No. 1, pp. 74-86.

Hobbs, N., Aubry, M., & Thuillier D. (2008). The project management office as an organisational innovation. *International Journal of Project Management*, Vol. 26, No. 7, pp. 547-555.

Hobbs, B., & Aubry M. (2008). An empirically grounded search for a typology of project management offices. *Project Management Journal*, Vol. 39, No. 6, pp. 569-582.

Hoffman, T. (2003). Value of project management offices questioned. *Computerworld*, Vol. 37, No. 29, pp. 7.

Hurt, M., & Thomas, J. (2009). Building value through sustainable project management offices. *Project Management Journal*, Vol. 40, No. 1, pp. 55-72.

Iacovou, C. L., Benbasat, I., & Dexter, A. S. (1995). Electronic data interchange and small organisations: adoption and impact of technology. *MIS Quarterly*, Vol. 19, No. 4, pp. 465-485.

Janvrin, D., Bierstaker, J., & Lowe D. J. (2009). An investigation of factors influencing the use of computer-related audit procedures. *Journal of Information Systems*, Vol. 23, No. 1, pp. 97-118.

Jarzabkowski, P. (2005). *Strategy as Practice: An Activity Based Approach*. Sage, London.

Johnson, G., Melin, L., Whittington, R. (2003). Micro strategy and strategizing: towards an activity-based view? *Journal of Management Studies*. Vol 40, No. 1, pp. 3-22.

Keil, M., & Robey, D. (1999). Turning around troubled software projects: an exploratory study of the deescalation of commitment to failing courses of action. *Journal of Management Information Systems*, Vol 15, No. 4, pp. 63-87.

Kostova, T., Roth K. (2002). Adoption of an organizational practice by subsidiaries of multinational corporations: institutional and relational effects. *Academy of Management Journal*. Vol 45, No. 1, pp. 215-233.

Liu, L. L., & Yetton, P. Y. (2007). The contingent effects on project performance of conducting project reviews and deploying project management offices. *IEEE Transactions on Engineering Management*, Vol. 54, No. 4, pp. 789-799.

Manning, S. (2010). The strategic formation of project networks: a relational practice perspective. *Human Relations*. Vol 63, No. 4, pp.551-573.

McAfee, A. (2003). When too much IT knowledge is a dangerous thing. *MIT Sloan Management Review*, Vol. 44, No. 4, pp. 83-89.

Martin, N. L., Pearson, J. M., & Furumo, K. (2007). IS project management: size, practices and the project management Office. *Journal of Computer Information Systems*, Vol. 47, No. 4, pp. 52-60.

Martins, V.A., & Martins, R.M. (2012). Outsourcing operations in project management offices: The reality of Brazilian companies. *Project Management Journal*. Vol 43, No. 2, pp. 68-83.

Montealegre, R. & Keil, M., (2000). De-escalating information technology projects: Lessons from the Denver International Airport. *MIS Quarterly*, Vol 24, No. 3, pp. 417-447.

National Audit Office, (2006). *Delivering Successful IT-enabled Business Change. Report by the Comptroller and Auditor General*, The Stationery Office, London.

Nelson, R. (2005). Project retrospectives: evaluating project success, failure, and everything in between. *MIS Quarterly Executive*, Vol. 4, No. 3, pp. 361-372.

Nelson, R. (2007). IT project management: infamous failures, classic mistakes and best practices. *MIS Quarterly Executive*, Vol. 6, No. 2, pp. 67-78.

Office of Government Commerce (2008). *For Successful Portfolio, Programme and Project Offices: Think P3O*. Stationery Office, London.

O'Leary, T., & Williams, T. (2008). Making a difference? Evaluating and innovative approach to the project management centre of excellence in a UK government department. *International Journal of Project Management*, Vol. 26, No. 5, pp. 556-565.

Orlikowski, W.J. (2002). Knowing in practice: Enacting a collective capability in distributed organizing. *Organization Science*, Vol. 13, No. 3, pp. 249-273.

Pan, S.L., Pan, G.S.C., Newman, M. & Flynn, D. (2006). Escalation and de-escalation of commitment to information systems projects: Insights from a project evaluation model. *European Journal of Operational Research*, Vol 173, No. 3, pp. 1139 – 1160.

Pellegrinelli, A., & Garagna, L. (2009). Towards a conceptualisation of PMOs as agents and subjects of change and renewal. *International Journal of Project Management*, Vol. 27, No. 7, pp. 649-656.

Pemsel, S., & Wiewiora, A. (2012). Project management office a knowledge broker in project-based organisations. *International Journal of Project Management*. online early doi: 10.1016/j.ijproman.2012.03.004

Peppard, J., Ward J. M., & Daniel E. M. (2007). Managing the realization of business benefits from IT investments. *MIS Quarterly Executive*, Vol. 6, No. 1, pp. 1-11.

Project Management Institute (2008). *A Guide to the Project Management Body of Knowledge*. PMI, Newton Square, PA.

Singh, R., Keil, M., & Kasi, V. (2009). Identifying and overcoming the challenges of implementing a project management office. *European Journal of Information Systems*, Vol. 18, No. 5, pp. 409-427.

Spelta, A.G., & Albertin, A.L. (2012). Project management offices in the IT area: A context-discriminant model of their establishment. *Information Systems Management*. Vol 29, No. 1, pp. 40 – 54.

Stanleigh (2006). From Crisis to Control: New standards for project management. *Ivey Business Journal*, (March/April), pp. 1-4.

Tallon, P. P., Kraemer, K. L., & Gurbaxani, V. (2000). Executives' perceptions of the business value of information technology: a process-oriented approach. *Journal of Management Information Systems*, Vol. 16, No. 4, pp. 145-173.

Unger, B.N., Gemunden, H.G., & Aubry, M. (2012). The three roles of project portfolio management offices: Their impact on portfolio management execution and success. *International Journal of Project Management*, Vol 30, No. 5, pp. 608-620.

Unger, B.N., Kock, A., Gemunden, H.G., & Jonas, D. (2012). Enforcing strategic fit of project portfolios by project termination: An empirical study on senior management involvement. *International Journal of Project Management*, online early, doi: 10.1016/j.ijproman.2011.12.002

Whittington, R. (2006). Completing the practice turn in strategy research. *Organization Studies*. Vol 27, No. 5, pp. 613-34.

## **Appendix 1: Relevant Survey Items**

### **Background Information (tick box categories provided)**

What is the size of yearly turnover of your organisation?

What is the size of the annual budget for IS/IT?

In which industrial sector is your organisation?

How would you describe yourself?

- a) IS/IT manager or specialist
- b) business manager or professional
- c) a combination of both

### **Presence of a PMO**

Does your organisation have a project/programme management office (PMO):  
Yes/No?

If 'Yes', to what extent does it play a role in the following activities:

	1. Never	2. Rarely	3. Sometimes	4. Often	5. Always
Identifying & quantifying benefits					
Technology delivery planning					
Business change and benefits planning					
Evaluation & review of post- project TCQ					
Evaluation & review of business changes and benefits					

**Overall assessment of satisfaction with practices**

Overall, what is the current level of satisfaction with the practices?

	1. Completely dissatisfied	2. Rather dissatisfied	3. Neutral	4. Rather satisfied	5. Completely satisfied
Identifying & quantifying benefits					
Technology delivery planning					
Business change and benefits planning					
Evaluation & review of post- project TCQ					
Evaluation & review of business changes and benefits					

**Assessment of overall success and management satisfaction**

Overall, what percentage of your organisations IS/IT investment projects deliver the business benefits expected?

1. Don't know/ no target benefits identified	2. Less than 25%	3. 25%-49%	4. 50%-74%	5. More than 75%

Overall, how satisfied do you think your executive management are with the value your organisation is getting from its IS/IT investments?

1. Completely dissatisfied	2. Rather dissatisfied	3. Neutral	4. Rather satisfied	5. Completely satisfied

## Appendix 2: Comparison of Samples and Descriptive Statistics

Table A1 compares the two samples according to key characteristics: location, sector, size and the presence of a PMO.

**Table A1: Comparison of Surveys**

		Data collection 1 (Number)	Data collection 2 (Number)	Total Sample (Number)	Total Sample (Percent)	Chi-square test
Total Sample						
Location	UK	32	20	52	33%	
	Mainland Europe	70	24	94	60%	
	ROW	0	11	11	7%	
	Total	102	55	157	100%	p < 0.05
Total Sample						
Sector	Manufacturing	43	12	55	35%	
	Public Sector	18	19	37	24%	
	Services	41	24	65	41%	
	Total	102	55	157	100%	p < 0.05
Total Sample						
Size (Revenue)	> 1000m euros	52	23	75	48%	
	> 100m euros	34	22	56	36%	
	< 100m euros	16	10	26	16%	
	Total	102	55	157	100%	p > 0.05
Total Sample						
PMO or not	Has PMO	69	40	109	69%	
Total	No PMO	33	15	48	31%	
	Total	102	55	157	100%	p > 0.05
With a PMO	UK	23	15	38	35%	



By Location	Mainland Europe	46	18	64	59%	
	ROW	0	7	7	6%	
	Total	69	40	109	100%	p < 0.05
With a PMO	> 1000m Euros	41	20	61	56%	
By size	>100m Euros	21	14	35	32%	
	<100m Euros	7	6	13	12%	
	Total	69	40	109	100%	p > 0.05
With a PMO	Manufacturing	25	6	31	28%	
By sector	Public Sector	11	16	27	25%	
	Services	33	18	51	47%	
	Total	69	40	109	100%	p < 0.05

When considering the full samples from the two surveys, no significant difference was found between the two samples on the basis the size of the organisations or the presence of a PMO based on a Chi-square test with a threshold for significance of p-value < 0.05. The samples were different on the basis that sample 2 had data included from outside the UK and Mainland Europe and sample 1 had proportionally less organisations from the public sector and more from the manufacturing sector. When only organisations with a PMO were considered, a similar pattern was found. Given the study seeks to cover a range of organisation types and locations, this difference between the samples is viewed as a benefit and hence the two samples were combined for the subsequent analysis.

As might be expected, Table A1 also shows that the larger organisations are more likely to have established a PMO than smaller ones, due to the larger number of projects they are likely to be undertaking.

**Table 1: Activities commonly undertaken by PMOs**  
(after Desouza and Evaristo, 2006)

Level of Influence	Activities
<b>Strategic</b>	<ul style="list-style-type: none"> <li>• Ensure projects are aligned with long-term objectives of the organisation and contribute to the strategic growth of the organisation</li> <li>• Efficient and effective knowledge management to improve the policies, practices and methodologies of project management in the organisation</li> </ul>
<b>Tactical</b>	<ul style="list-style-type: none"> <li>• Ensures close integration between ongoing projects</li> <li>• Ensures consistent quality of products and services generated by projects</li> <li>• Knowledge sharing across ongoing projects</li> </ul>
<b>Operational</b>	<ul style="list-style-type: none"> <li>• Providing regular status reports to decision-makers and coordinating communication about projects</li> <li>• Ensuring information is available to inform specific project decisions</li> <li>• Acting as a central source of knowledge on project management including best practices and standardised methodologies</li> <li>• Conducting routine project evaluations</li> </ul>

**Table 2: Correlation matrix of the presence of a PMO with overall project success and management satisfaction**

	Has PMO	Success	Satisfaction
Has PMO	1.000		
Success	.022	1.000	
Satisfaction	-.212***	.379***	1.000

\*\*\* Correlation is significant at the 0.01 level (2-tailed).  
N=157



**Table 3: Correlation of involvement in practices with overall success and satisfaction**

	Involvement in identifying & quantifying benefits	Involvement in planning the technology implementation	Involvement in planning the business changes & benefit delivery	Involvement in post implementation review of TCQ	Involvement in post imp'tation review of business changes & benefits	Success	Satisfaction
Involvement in identifying and quantifying benefits	1.000						
Involvement in planning the technology implementation	.388***	1.000					
Involvement in planning the business changes & benefit delivery	.491***	.540***	1.000				
Involvement in post implementation review of TCQ	.354***	.242**	.377***	1.000			
Involvement in post imp'tation review of business changes & benefits	.439***	.293***	.575***	.618***	1.000		
Success	.189**	-.029	.161	.150	.278***	1.000	
Satisfaction	.202**	-.091	.007	.123	.183**	.425***	1.000

\*\* Correlation is significant at the 0.05 level (2-tailed).

\*\*\* Correlation is significant at the 0.01 level (2-tailed).

(Note: only organisations with a PMO included, N=109)

**Table 4: Correlation matrix of PMO involvement in key project practices and satisfaction with practices**

	Involvement in identifying & quantifying benefits	Involvement in planning technology implementation	Involvement in planning the business changes & benefit delivery	Involvement in post implementation review of TCQ	Involvement in post implementation review of business changes & benefits	Satisfaction with identifying benefits	Satisfaction with technology delivery planning	Satisfaction with organisational change & benefit planning	Satisfaction with TCQ review	Satisfaction with evaluation and review of changes & benefits
Involvement in Identifying & quantifying benefits	1.000									
Involvement in planning technology implementation	.383***	1.000								
Involvement in planning the business changes & benefit delivery	.491***	.540***	1.000							
Involvement in post implementation review of TCQ	.354***	.242**	.377***	1.000						
Involvement in post implementation review of business changes & benefits	.439***	.293***	.575***	.618***	1.000					
Satisfaction with identifying benefits	.080	-.028	<b>.184**</b>	.115	<b>.279***</b>	1.000				
Satisfaction with technology delivery planning	.022	.018	.028	.119	<b>.255***</b>	.251***	1.000			
Satisfaction with organisational change & benefit planning	.059	-.080	.109	.098	<b>.226**</b>	.375***	.242**	1.000		
Satisfaction with TCQ review	.111	-.121	.073	.151	<b>.215**</b>	.347***	.346***	.418***	1.000	
Satisfaction with evaluation & review of changes and benefits	-.034	-.177	.098	.105	<b>.219**</b>	.461**	.285***	.443***	.503***	1.000

\*\* Correlation is significant at the 0.05 level (2-tailed).

\*\*\* Correlation is significant at the 0.01 level (2-tailed).

(Note: only organisations with a PMO included, N=109)