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THE POTENTIAL OF KNOWLEDGE MANAGEMENT PROCESSES FOR FACILITATING PFI PROJECT

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ABSTRACT

Knowledge management (KM) is one of the strategies that can be used to improve organisational competitiveness and performance. Like the Private Finance Initiative (PFI), KM attempts to improve service performance. Facilities Management (FM) now has an increasingly important role to play in PFI projects. It is therefore important within the PFI-FM context, to manage knowledge for facilities, particularly on its processes, the approaches to dealing with problems, and the management of day-to-day operations. This allows facilities managers to be more effective at both the operational and managerial levels. The aim of this paper is to identify knowledge management's potential and its relevance to the integration of facilities management practice in PFI projects. Reviews on current practice, issues and problems, indicate that it would be beneficial to adapt knowledge management in FM organisation, particularly at the operational level. By adopting KM, it could facilitate the effectiveness of managing services and later overcome the shortfalls in meeting expectations and the desired performance level of FM organisations. A discussion is also included on the future research direction for the development of a conceptual framework to support the integration of facilities management practices with relevant knowledge management principles.

KEYWORDS: knowledge management, operational stage, PFI.

INTRODUCTION

An awareness of the importance of delivering and managing services in PFI projects has been highlighted in various government reports, journals and printed articles. In order to achieve the quality of services and level of performance targeted, there is a need to understand the scope and impact of PFI contracts. Further, this can lead to a better understanding of the facilities management approach particularly in the operation and maintenance stages.

The main function of a facilities management team is to act as a support function to the organisation (Alexander, 1997). However, in the PFI context, its role in the operation and building services and property management are more critical and demanding (Underwood and Alshawi, 2000). The operational and maintenance function in PFI projects such as hospitals clearly involve high operational risk of failure (Chotipanich, 2000) and demanding level of maintenance services activities. Since facilities management deal with long-term operational level and strategic level, there are several challenging operational and management problems that occur on PFI projects.

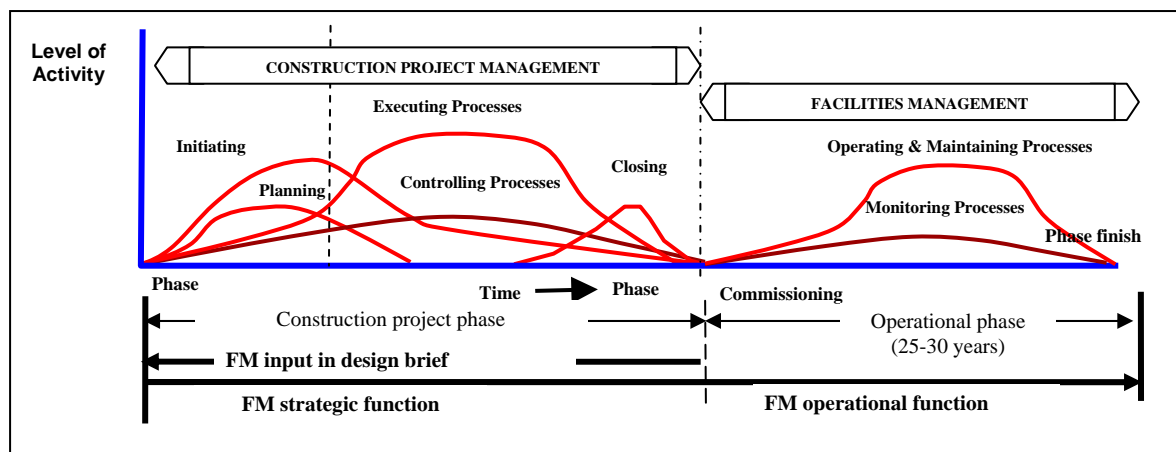
The project organisation especially FM service providers are engaged to deliver and to perform to a level of services required. These are aligned with the nature of PFI contracts which are driven by services performance. Thus, in the PFI-FM context, knowledge of managing facilities, processes and approach for dealing with problems, and management of day-to-day operation help the facilities manager to be effective, both at the operational and managerial level.

OPERATION AND MAINTENANCE IN PFIs PROJECT

The nature of the PFI procurement with project long life span that usually took place for 25 to 30-year, makes the operation and maintenance period pack with high degree of uncertainty (Nutt, 2000). This is why most PFI's stakeholders choose to outsource their facilities services. In contrast, for other types of procurement, the whole life cycle of the project including operation and maintenance period takes up only 2 to 5-years. Thus, PFI shifts the normal practice of existing facilities management approach towards new PFI-FM approach (Payne, 1997; Zhang and Kumaraswamy, 2001). These new approaches are geared to produce a high level of services performance as stipulated in the contract.

Figure 1 illustrates the inclusion of the project management and facilities management functions across PFI projects' life-cycle. Construction project management involves the organisation of the project structure and its implementation towards the completion of a project. Once the facility is completed, facility manager is responsible for operating, maintaining, monitoring and performing the service delivery of the project for the next 25 to 30-years.

Figure 1. Inclusion of facilities management function in PFI project life-cycle (Adapted from PMBOK Guide, 2004)



In PFI construction projects, the involvement of facility management not only take places in the operation stage, but covers all stages, as early as at the design brief stage. In addition, there is a continuous relationship between FM input and knowledge provided throughout the PFI project life cycle. Positioning the FM function at the earlier stages of the PFI contract arrangement can lead to better information and knowledge flows of the built facilities. It can be done through the influence of facilities design towards its operation and maintenance (El-Haram, 2002)

The operation phase of PFI projects represents the most significant uses of facilities management practice. Therefore, the need of facilities management knowledge in PFI projects is becoming a main concern during the operational and maintenance phase. Processes and practice developed within PFI-FM project organisations generate important knowledge and require FM organisations to manage it. For instance, in considering design for efficient operation for new facilities, FM can provide an input of reliable life-cycle cost data from the design stage through to the operational FM brief (Nutt, 2000). Further, a study by

Moore and Finch (2004) on facilities management in South East Asia provided an interesting insight into the importance of management ability and knowledge of managing facilities. In their study they found the need to have a good understanding of FM is essential in order to cope with challenges and issues of complex projects. Thus it perceives the facility manager must be equipped with knowledge of facilities and management to carry out his integrated support role (Kincaid, 1994).

Studies by Mustapa and Carrillo (2007) on PFI-FM service providers highlighted the crucial phases of information and knowledge used by FM service providers in PFI projects. They identified two main phases that involves substantial amount of facilities management knowledge. First, the facilities managers need to develop the solution and to project the mobilising the services delivery activity at the earlier stage of operational PFI project. At this stage, the facilities manager acts on strategic demands, and develops tactical plans in line with the strategy. Meanwhile, at later stages where it involves operational tasks, facilities managers are required to deal with issues such as defects, changing nature of the project and legislation issues. Hence, the use of FM knowledge is becoming a significant challenges in order to cope with these current demands both for operational and strategic level of FM at this stage.

Problem Identification

An exploratory study done by Mustapa and Carrillo (2007) found that FM service providers face two key challenges in managing and operating PFI facilities. These are on meeting demanding performance requirements and managing stakeholder expectations. The study also found that during the operational stage, FM organisations have little control of managing changes in legislation and requirements imposed by the legislative authority. Along with the problems identified, a report by Partnership UK (2006) on the assessment of performance of FM practice in PFI school projects found that there are differences in interpretation of service levels between service providers and the public sector. This leads to difficulty in FM service providers managing and delivering services according to stakeholders' perspectives. Another concern of FM service providers during the operational phase is on the performance measurement mechanism.

Studies by Akintoye et al, (2003) highlighted some issues that impact PFI contractors' performance during operational phase of their contract. These include difficulty in specifying the quality of services and difficulty in pricing facilities management (FM) services. During the bidding stage, the precise definition of a high quality service may be indefinable, which allows different interpretations and can result in post-contract disputes between client and contractors. In relation of difficulty pricing FM services, this also occurs when less or no information is available in pricing the operational and maintenance aspects at earlier stage of PFI.

Further, the emphasis of long term relationships is also highlighted and considered as an issue during operational stage (HM Treasury, 2000). This indicates that success can be achieved only if the public authority and the contractor approach the project in a spirit of partnership. This can be best done by understanding each other's business, sharing a common vision, good knowledge transfer and trust between the parties. More attention needs during operational phase due to ensure smooth tasks on services and to meet the service performance as outlined in the contract. Further, it leads FM service providers delivering the services at their highest level.

From the problems and issues identified above, there needs to be an improvement in facilities management knowledge processes, predominantly in PFI contract scheme. Any approach to incorporate PFI and FM practice is generally to enhance the effective level of service delivery and performance service level made by FM organisations. The adoption of applicable knowledge management principles can assist facilities managers and their organisation to incorporate and exploit knowledge into PFI-FM practices.

OBJECTIVES AND METHODOLOGY

This research aims to improve FM process in PFI projects through identifying areas of FM knowledge applied especially during the operation and maintenance stage. Information and knowledge flow in PFI-FM practice was reviewed to identify the research problems and research gaps. Subsequently, integrating knowledge management principles in facilities management processes is expected to lead to improvement in service efficiency and performance level.

POTENTIAL OF KM TO FACILITATE FM AT OPERATIONAL PFI PROJECTS

An integration of knowledge management into operational practice allows for connecting knowledge and performance, as knowledge gains economic value when it is used to solve problems, explore opportunities and make decisions that improve production performance (Mohamed, 2006). In relation with value, PFI contract agreement is merely focus on value for money. Thus, by integrating knowledge management practice into PFI-FM practice will improve value for money in its operational stages. Through the process of knowledge management, intangible assets of FM organisations are better recognised and exploited to create value and knowledge both internally and externally for the benefit of the organisation (Davenport and Prusak, 1998)

The nature of facilities management practice present challenges for the integration of knowledge management within the PFI-FM practice context. An understanding of the potential offered by knowledge management and the way in which knowledge management can be used effectively within FM organisation, will become increasingly crucial for the organisations to manage services delivery and performance effectively. Indeed knowledge management in different organisations may serve different organisational purposes. Impact from these studies in this area may be extremely valuable, especially in FM organisations that have distinct knowledge management programme.

Improved coordination and communication in PFI-FM practice can be achieved through an approach of knowledge management. The adoption on this knowledge management processes can assist facilities managers and their organisation to incorporate and exploit knowledge into PFI-FM practices. In relation with the operational phase in construction projects where the facilities management function take place, a number of academics and practitioners have been expressing an interest in its relationship with knowledge management. Several researchers (Wong and Aspinwall, 2006; Gray, 2001; and Liao, 2002) have described the importance of having knowledge management in facilities management practice. They considered knowledge management is one of the strategies that can be used to improve organisational competitiveness and performance.

Since most project-related problems, solutions, experiences and know-how knowledge are in the heads of personnel and organisations during the construction and operational phases, capturing them and reusing in future projects can create advantages for an organisation. In the PFI-FM context, the FM service providers are responsible for day-to-day managing of information on their operational tasks and functions based on output specifications and contract documents. Thus, knowledge of the contract documents and output specifications are those categorised as implicit knowledge in PFI-FM contractual context that have to be managed. By referring the contract document, it helps both the operational team and management team to draw clear understanding of the content and awareness of their business scope. The contract document also communicates the required services to deliver, the number of operational staff required for each task, tasks to be done and level of services performance needed.

Thus, during the operational and maintenance stages of PFI projects, FM service providers are responsible for communicating the required services to deliver to their staff at operational level. It then helps both the operational team and management team to draw a clear understanding of the content and awareness of their business scope. Failure to understand and comply with the stipulated contract specification will result in contractual defects and performance penalties. With regard to the transfer and channelling of information from the document and output specification stated, Craig and Sommerville (2006) view that inter and intra-discipline communication between the distinctive parties and professionals is often problematic. Faniran et al. (2001) added that the lack of integration and co-ordination between the industry's distinct professions can be perceived as a major contributory factor to poor project performance.

In a view of PFI projects, information overload is a major problem for many facilities managers, who find they spend all their time attending to basic operational problems (Barret and Baldry, 2003). A further way to ease the information overload is to ensure that all of the facilities team, both in-house and contractors know exactly what is expected of them. Ali (2004) added that during the operational stage of a construction project, it involves plenty of information and requires some stages of decision making. It also demands an efficient level of communication. Thus, sharing information may help to solve the problem of incompatible communication and also help in establishing integration where information is freely exchanged in a disciplined manner amongst the project parties.

Process of knowledge creation and transfer in knowledge management processes are seen to be relevant in facilities management practice. Hence, it can be seen that the importance of adapting the knowledge management principles into the PFI contract practices acts as a medium to practice knowledge sharing and efficient knowledge dissemination throughout the contract duration.

DISCUSSION AND FUTURE RESEARCH DIRECTION

From the literature undertaken, it was deduced that facilities management knowledge is about supporting the business of an organisation and using its essential requirements as a driver for facilities improvement. In managing the services over a long time period, there are inevitable challenges in facilities management practice. Apart from the issues and challenges outlined, FM's knowledge facilitates the effectiveness of managing services with regards to the better understanding and integrated approach from both operational and managerial strategy. Effective communication helps organisation to understand each other's requirements and

working practices, which can lead to fewer misunderstanding. By applying that, it facilitates the effectiveness of managing services.

In the next stage of research, it plans to investigate knowledge management adoption and innovative work practice in situations where FM service providers deal with highly demanding performance of day-to-day operational task as stipulated in PFI contract arrangements. Thus, the research seeks to understand actual practices and characteristic of knowledge embedded in personnel and organisation at operational stage of PFI projects. This can be done through assessing and establishing effective communication requirements, knowledge management tools and as well as examining the structure of organisation.

This research can be done through a form of qualitative research method based on detailed surveys and case studies involving PFI construction sectors. This method would involve surveying project groups and finding out their knowledge management practices, the nature of knowledge used or required, the tools and models used for sharing knowledge and the gaps existing in current practices with a view to introducing better alternatives. As such, the method is 'problem driven' in response to practitioners' perception of where knowledge flows exist and shares throughout the facilities management practice. From this approach, it then provides a gap and opportunity to draw a conceptual framework that can enhance the facilities management knowledge processes, predominantly in PFI contract scheme.

CONCLUSIONS

A review on existing literature indicates, that is has been beneficial to adopt knowledge management in the construction environment. Having highlighted the challenges and issues facilities management (FM) organisations face in the course of managing facilities and delivering services, the adoption of knowledge management is seen as beneficial and a potential solution to the problem. Facilities management knowledge facilitates the effectiveness of managing services with regards to the better understanding and integrated approach from both operational and managerial strategy. Knowledge transfer through effective coordination and communication helps organisation to understand each other's requirements and working practices. This could subsequently lead to fewer misunderstandings in the contract and improved interaction between personnel. By doing so, it facilitates the effectiveness of managing services and overcome the shortcomings in meeting expectations and levels of performance needed by FM organisations.

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