

AicQoL 2013 Langkawi
AMER International Conference on Quality of Life
Holiday Villa Beach Resort & Spa, Langkawi, Malaysia, 6-8 April 2013
"Quality of Life in the Built and Natural Environment"

Delivering Best Value for Design and Build (D&B) Projects through Integrated Process Improvements Solution

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Abstract

In the Design and Build (D&B) projects, there is an urge to implement an *'integrated management approach'* as a solution to contractors' poor service performances. Integration is the merging of different disciplines with different goals into a cohesive and mutually supporting concept. The objectives of this paper are: to investigate the concept of integration for D&B projects; and to establish the integrated elements (social and technical) for D&B projects. Empirical research was undertaken based on six case studies to public and private projects in Malaysia. The findings suggest that *value management* and *constructability* are viable to be implemented technically whilst, *partnering* promotes quality of life among the D&B project participants. Finally, a conceptual framework of an integrated process improvement solution is proposed to deliver the best value for D&B projects in Malaysia.

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Selection and/or peer-review under responsibility of the Association of Malaysian Environment-Behavior Researchers, AMER (ABRA malaysia).

Keywords: Constructability; design and build (d&b); partnering; Value Management (VM)

1. Introduction

The construction industry in many countries faced criticism for the inefficiencies of project outcomes such as time and cost overrun, low productivity, poor quality that leads to customer's dissatisfaction (Chan et al. 2003). Construction industry in Malaysia is of no exception. For instance, in 2005, about 17.3% of 417 governments' projects in Malaysia were reported to be delayed for more than 3 months (Sambasivan and Soon, 2007). Meanwhile, a survey conducted by Abdul-Rahman et al. (2006) reckons

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that many projects in Malaysia suffer from time and cost overrun, in particular during the construction project phase.

Among the delivery procurements used in the development of construction projects is the design and build (D&B) procurement method. In D&B, the client will enter into a single contract with D&B contractor to perform the full service of designing and constructing (Ling and Chong, 2005). The contractor and client are in a close contact throughout the project phases (i.e., design, procurement, construction and completion). Nevertheless, some clients are still claimed that the D&B procurement method are subjected to poor quality of project services (Preece and Tarawnah, 1997). A survey conducted by Ling and Chong (2005) reported that contractor's service performance is still lacking in D&B project. They recommended that in order to succeed, the D&B contractor should be capable to tackle the practical aspects of design and construction; build up the design management expertise and project management capability; achieve a high level of cooperation; share common project goals; and develop an ability to resolve conflicts among project team.

Based on these recommendations, there is an urge to implement an '*integrated management approach*' as a solution to contractor's poor service performances. The selection of core integrated elements in D&B project could provide a holistic approach to reviewing and solving construction projects issues through a more structured method. Integration according to Baiden et al. (2006), are the merging of different disciplines or organisations with different goals, needs and cultures into a cohesive and mutually supporting unit. Through the integration process, the aim and objectives of the project could be well delivered effectively to client satisfaction.

Undoubtedly, the integrated approach provides numerous advantages for both technical and social aspects such as improvements to the construction solution, better communication, achieve the best value and enhancement, and transfer of expertise between all the parties (Vrijhoef and Voordijk, 2003). In fact, previous studies by Egan (2002) have challenged the industry to move away from its traditional modus operandi towards a more collaborative and integrated approaches. Hence, the objectives of this paper are two folds: to investigate the concept of integration for D&B projects; and to establish the integrated elements (social and technical) to be embedded in the D&B projects.

2. Literature review

Integration can be considered as a network of different organisations, linked upstream and downstream in a chain, aiming to produce quality and value in the services and products for the consumers (Khalfan et al. 2004). Integration is for the purpose of improvements to the construction industry. For instance, the supply chain integration is focusing on innovation and expertise rather than the cost. They believed that by continuous investing in new skills in the supply chain integration, the project costs could indirectly minimise.

Baiden et al. (2006) affirm that integration can be considered as the merging of different disciplines with different goals, needs and cultures into a cohesive and mutually supporting unit. Meanwhile, Bygstad et al. (2010) indicate that integration is a combination and coordination of separate and diverse elements into a more harmonious entity. In the information system (IS) project management, integration aiming to enroll and adapt stakeholders and technology to stabilise the behavior of the network. Integration in a socio-technical sense addresses the relationship between technology and organisations. They believed that in order to ensure the systems are useful, the IS project manager are able to work together with respective stakeholders in a complex and changing environment. This means to say that integration addresses the relationship between technology and organisations.

Given the above, it could be deduced that the integration approach had been used in a variety of field and had brought remarkable success due to its implementation. In order to achieve the optimised level of

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