

Evaluating Early Stakeholder Engagement (ESE) as a Process for Innovation

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Abstract

Neglecting to engage key stakeholders early on is one of the common points of failure in projects. Problems such as reworks, disputes, cost overruns, poor communication, and failure of the supply chain are just some of the common problems that arise from stakeholder conflict during the construction phase. This is due to the fact that different project stakeholders have differing goals and priorities, and it is therefore unlikely that all stakeholder expectations could be met. The early involvement of stakeholders could identify any potential problems early-on and continue providing input throughout the construction phase. Therefore, there is a need to engage the stakeholder in the project as early as possible to determine the need and capture stakeholder inputs in such projects. Innovative procurement tends to increase opportunity for innovation in construction productivity through the integration of the design and construction functions. Higher levels of innovation arise when a more innovative procurement method is chosen. Alliance procurement is one of the innovative procurement methods, introducing organisational innovation through early stakeholder engagement in the project. No major studies have so far been completed that examine in depth how early stakeholder engagement influences the innovation process. This paper therefore aims to evaluate the impact of early stakeholder engagement and how it influences the innovation process in construction projects. The potential of innovation through various procurement methods will be discussed. Then, the relationship to early stakeholder engagement is examined. The findings suggest that promoting early stakeholder engagement, regardless of the procurement system, is vital to avoid rework and unnecessary cost, enhance quality, overcome disputes throughout the construction process and overcome the problem of low productivity. Furthermore, long term procurement relationships, especially in collaborative procurement, need early stakeholder engagement as an effective way of developing trust among stakeholders, thus facilitating innovation.

Keywords: Early stakeholder engagement, Innovation, stakeholders, stakeholder engagement, procurement methods

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1. Introduction

Stakeholders in construction are affected in both positive and negative ways due to the different stages and nature of construction projects from initiation to handover of completed construction (Olander, 2007). Problems such as reworks, disputes, cost overruns, poor communication, and failure of the supply chain are just some of the common problems that arise from stakeholder conflict during the construction phase. Conflicting interests arise because project participants have differing goals and priorities (Barlow, 2000). Such conflicts are often linked with one another and resulting in a knock on effect on the project management process (Olander, 2007). Thus, Mathur et al. (2008) suggest that the construction industry should engage with stakeholders to determine what they need and El-Gohary et al. (2006) state that capturing stakeholder inputs in such projects is crucial. Research by Lee and Chan (2008) portray the evidence in the recent Guangzhou – Shenzhen – Hong Kong Express Rail Link project, where stakeholders failed to reach a consensus during the participation process in the early stages of the project (e.g. planning stage). They further suggested that this could increase the chance of failure, or even lead to confrontation between decision-makers and local citizens, as the project progresses.

Alliance procurement is a form of relational contracting which introduces innovation in stakeholder management through early stakeholder engagement in the project. This results in jointly made decisions, increased commitment to the no-dispute rule and, furthermore, mutual liability waivers among the key participants. Introducing early stakeholder engagement in the construction phase eliminates low productivity, unnecessary risk and rework on the project. Tammer (2009) supported, the presence of key clients and stakeholders during project brief meetings, as the problem-owner can make the project more tangible and accessible by illustrating problems and objectives, and answering questions from parties involved. Sharma (2008) added that engaging the stakeholder early on can help offset any potential misunderstanding. Yang et al. (2009a) stated that different stakeholders have different levels and types of investments and interests in the project in which they are involved. An evaluation based on case studies by Olander and Landin (2005) shows that stakeholder demands and influence should be considered as a necessary and important step in the planning, implementation and completion of any construction project. Many of the industry's performance problems occur from inadequate inter-organisational co-operation (Barlow, 2000) which, in turn, adversely affects productivity, creates an adversarial environment and results in the limited take-up of technological and business process innovations.

Innovation is co-created in a multi-party environment and shaped by the project requirement (Ozorhon, 2012). Innovation not only can be implemented to the process and product but also to the organisation. OECD (2005) describes innovation as being either technical or non-technical. Technical innovation can be either product or process innovation, whereas organisational innovation includes changes to organisational structure, introduction of advanced management techniques and implementation of new corporate strategic orientation. Considering the multi-party environment in construction, innovation analysis should be done at the project level and should take into account the role of project stakeholders and their interrelationships (Ozorhon, 2012) thus, helping to increase

innovation in construction projects. Engagement of stakeholders at an early stage is likely to foster innovation throughout the supply chain and procurement process.

This paper aims to evaluate early stakeholder engagement as a process for innovation in construction projects, through a review of available literature. The paper describes the potential for innovation in construction procurement, followed by a discussion of the impact of early stakeholder engagement within the various procurement systems. No major studies have thus far been undertaken that examine in depth how early stakeholder engagement influences the innovation process.

2. Innovation in construction procurement

Innovation can be categorised into product innovation, process innovation, marketing innovation and organisational innovation (Damanpour et al., 2009). A well-known definition by Slaughter (1998) defines innovation as, “the actual use of a non-trivial change that results in an improvement in a process, product or system that is novel to the institution developing the change”. Steiner (2008) explained innovation as a means of coping with change and future development, and not an end in itself. Innovation in construction increases when moving from traditional procurement methods to more collaborative procurement methods. This is due to the fact that the nature of the system becomes more complicated and key member and stakeholder involvement impacts more at an organisational level. OECD (2005) distinguishes between technological and non-technological innovation, the latter of which includes organisational and marketing innovation. Figure 1 plots the potential for innovation against the various types of construction procurement process. The input includes technological and non-technological innovation impact.

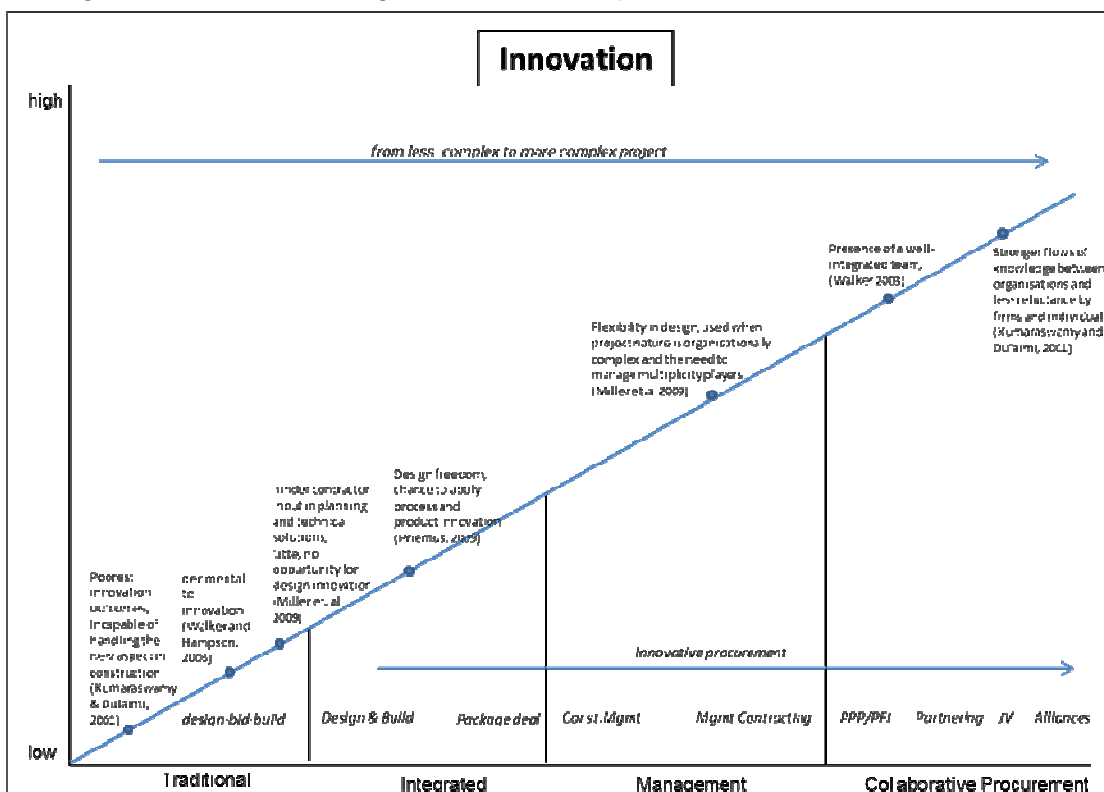


Figure 1: Potential for Innovation process through various procurement method

Traditional procurement (design-bid-build) methods impede the contractors input into innovation planning, technical solutions and buildability of the projects, resulting in little or no opportunity for design innovation (Miller et al., 2009). The traditional procurement approach was found unsuitable to the current need, as projects are becoming more complex which demand greater emphasis on management techniques and engineering skills (Ng and Yusuf, 2006). Kumaraswamy and Dulaimi (2001) describe traditional procurement as the most conservative and detrimental to innovation, resulting in the poorest innovation outcomes (Walker and Hampson, 2003).

On the other hand, the main contractor in Design and Build contracts (sometimes referred as design and construct) frequently works closely with a design team, subcontractors and suppliers. Priemus (2009) claimed design and construct can give the contractor plenty of design freedom and that the contractor often gets a chance to apply process and product innovations.

Moving further along the innovative procurement spectrum, Miller et al., (2009) highlighted that management contracting and construction management are suited to large, fast moving projects where early completion is desirable. Such contracts allow room for innovation, as the management contractor is appointed at an early stage and the client has a considerable degree of flexibility on design matters.

Walker et al. (2003) view, from an innovation perspective, the most importance aspect of a procurement system to be the presence of a well-integrated team which they consider as vital in driving innovation. Communication, learning, and innovation are also improved across the supply chain through management by a single entity (Walker et al., 2003). Furthermore, collaborative procurement reduces costs, reduces project times, improves quality, and improves client satisfaction. These benefits also apply to the alliance procurement model, perhaps with greater surety given the existence of commercial drivers to ensure co-operative behaviour under alliances (Bresnen and Marshall, 2000). Ozorhon (2012) claimed that much of innovation is co-developed with other project participants, such as clients, contractors, sub-contractors, suppliers, consultants, and designers, all of which have a different role in the innovation process. A review of the literature shows that the more innovative the procurement system the more stakeholders will engage with the process. Collaborative procurement engages various types of external and internal stakeholders throughout the project phase.

2.1 Impact of stakeholder to the procurement system

Rwelamila (2010) ascertained that there is in fact sufficient time to identify internal and external stakeholder in traditional procurement methods by running the identification process in parallel with the process of preparing project documentation. The project manager, with skill and knowledge, will have a chance to manage the process of identifying project stakeholders. Even so, if stakeholder's goals include contractor collaboration in the design process and client involvement, the traditional procurement method is weak in dealing with these issues. To deal with this, Rwelamila (2010) suggested adjusting the traditional procurement method to a hybrid system or to select a different procurement system (other

than separated and cooperative procurement system) thereby enabling the negative impact on stakeholder management to be accommodated.

In contrast, in the Design and Build procurement system identifying stakeholders is easy because the two central tasks of the project are implemented through a single point of responsibility. The process of assessing the environment around the project in terms of the impact of the project within its locality and beyond is easy to undertake since the two key stakeholders the designer and contractor are working as a team. Design and build in its typical form does not have an appropriate mechanism to deal with stakeholders, other than the construction team, if they have an interest in the management of the project, facilitation of high quality levels and other related issues (Rwelamila, 2010). This type of procurement is likely to be favourable, if project stakeholders expect positive impacts such as appropriate risk sharing, client involvement, time management and close control expenditure for their project.

In package deal contracts the majority of contractors employ their own in-house designers and can thus be categorised as pure design builders and, as such, are expected to perform well in terms of the cost and time criteria. If these two requirements are central to project stakeholder requirements, then smooth stakeholder management could be achieved (Rwelamila, 2010). However, some products of this system lack aesthetic appeal, but this can be avoided as the potential stakeholders are able to see actual examples of the contractor's product before reaching a decision.

Management contracting is based on the appointment of a professional project manager as an equal member of the design team with construction expertise, but the actual construction is carried out by package contractors employed, co-ordinated and administered by the management contractor. This type of organisation promotes teamwork and efficient use of resources through improved planning, but it is important to limit the overlap, in terms of supervision and monitoring, between the management contractor and the designer (Bower, 2003).

Alliance contracting theory is based on the notion of collaboration. In the Alliance model, there is a joint rather than a shared commitment between partners (Walker and Hampson, 2003). Alliance contracts fall under the general umbrella of collaborative contracting and can be described as multi-party contracts which are developed and executed by key project participants.

3. Early stakeholder engagement as an innovation process

PMI (2008) defined project stakeholders as individuals and organisations that are actively involved in a project or whose interests may be affected as a result of project execution or completion. It is important to gauge stakeholder opinion and concerns to better facilitate the development of a project that will meet the needs of those stakeholders. Olander (2007) categorised stakeholders as either internal, those who are actively involved in project execution, or external, those who are affected by the project. The process involved in stakeholder management includes identifying, negotiating and achieving objectives, such as

social, environmental or economic, through active stakeholder participation in the project phase (Pajunen, 2006).

Ozorhon (2012) stated that long term procurement relationships, collaborative working and early engagement in projects are effective ways of developing trust among parties and thereby facilitating innovation. Robichaud and Anantatmula (2011) highlighted the need for several modifications in traditional project management practice to deliver innovative and sustainable construction solutions. They suggest integration should be achieved through early involvement of all stakeholders to ensure that project objectives are understood and met in every phase of the project life cycle. In principle, the construction procurement system determines the overall framework of responsibilities and authorities for participants within the construction process, and is a key factor contributing to project success and, hence, stakeholder satisfaction (Rwelamila, 2010). Engaging stakeholders at an early stage of the project can offer a constructive discussion and sense of ownership that may lead to positive interest, increasing credibility, more transparency and the early identification of constraints (Tammer, 2009). Successful innovation often requires effective cooperation, coordination and working relationships between the different parties in construction projects (Ozorhon, 2012).

3.1 Stakeholder engagement in construction

Stakeholder engagement was recently identified by Rodriguez-Melo and Mansouri (2011) as the defining factor increasing managers' awareness, helping legislation to be effectively implemented and making sustainability highly appealing to clients. Greenwood (2007) defined stakeholder engagement as practices that the organisation undertakes to involve stakeholders in a positive manner in organisational activities. Atkin and Skitmore (2008) observed that enhanced stakeholder involvement can help with managing their needs, decreasing unanticipated risk and reducing unconstructive actions or reactions that have a possible impact on the project success.

The stakeholder involvement programme should not be overlooked. It is one which determines stakeholder concerns and integrates them into the design of a project to achieve collaborative integrated project development (El-Gohary et al., 2006). For instance, in Public Private Partnership (PPP) project planning, positive involvement with stakeholders can be a decisive factor that can 'make or break' a project. It is important to determine different stakeholder concerns, opinion and interest to better facilitate the development of a project and resolving conflicts in reaching a consensus at the early stage of the project (Li et al., 2012). Understanding of the concepts that underlie stakeholder involvement is an essential step towards creating a strong involvement programme, for example in infrastructure projects, will help project proponents and stakeholders to communicate effectively (El-Gohary et al, 2006).

3.2 The importance of early stakeholder engagement to the project

Construction projects involve production of unique projects on site by a variety of teams brought together temporarily. Blayse and Manley (2004) claimed that difficulties in

monitoring the different activities carried out by different parties in each stage of the construction project impedes the innovation process. Alliance procurement introduces innovation in organisational activity through early stakeholder engagement to the project. Jointly made decisions increase commitment to the no-dispute rule and furthermore, to mutual liability waivers among the key participants. Expectations can be managed, hidden agendas can be brought to the surface and project priorities can be established (Yang et al., 2009b). Many problems can be overcome, such as a lack of effective early stakeholder dialogue, misunderstanding of project objectives, conflicts, cost issues etc., if stakeholders are actively included at the early stage of front end planning and integrated into the project team (Tammer, 2009).

Brian and Martin (2008) and other scholars studying the construction sector have realized that stakeholder involvement has undeniable impacts on project outcomes. Lahdenpera (2012) elaborates on the idea of continuous workshoping throughout the project process derived from project partnering where it was initially needed to create and maintain trustful relationships between relatively independent organisations. Early involvement of the key parties and intensified early planning make the parties members of the same team, eliminating the need to put emphasis on *ad hoc* activities. For instance, tools like a partnering charter and decision ladder are important elements of the early project partnering approach, improving cooperation and minimising the possibility of misunderstanding. In contrast, project alliance practice evolved from the need to improve the implementation of demanding and risky investment projects. In project alliances, most organisations also engage a coach to help them through the team development process (Morwood et al., 2008).

Early involvement of key stakeholders is intensified by exploiting the means offered by advanced information and communication tools (ICT). Amongst client, project team, and contractors the building information model (BIM) is an example ICT solution that multiple parties can utilize. Heravitorbati et al., (2011) stated that to meet the differing demands of the various stakeholders, project managers have to involve these stakeholders in order to increase effectiveness and efficiency of decisions in the construction project lifecycle (Saghatforoush et al., 2010).

3.3 Impact of early stakeholder engagement on time, cost and quality.

Quality management is an important aspect in construction and building projects. In order to increase the quality of the ultimate project and to reduce rework, revision and waste, and failure costs in the entire project life cycle, the importance of quality has to be understood by the key project team members (Heravitorbati, et al., 2011). The project team, therefore, have to develop high-quality relationships with key stakeholders, in particular the main customers for the project, in order to understand the perception of quality systematically (Tam & Le, 2007). Effective relationships among key stakeholders (Wang and Huang, 2006) and stakeholder involvement in quality decisions of the project (Heravitorbati et al., 2011) are helpful in improving the final quality of a construction project.

Lahdenpera (2012) added that early involvement cannot be based on price and various qualitative selection criteria. This has resulted in an approach-oriented participant selection. The identification of the cost related risks, underlying drivers and impediments for effective management must be assessed in the context of three key stakeholders, namely clients, contractors and consultants. It has been emphasised that if a project's stakeholders are not satisfied with the quality of the project management or the final project, the project team will be required adjust scope, time and cost to meet stakeholder requirements and expectations on quality issues (Heravitorbati et al., 2011).

4. Discussion

It is believed that early stakeholder engagement could contribute to the process of innovation in construction. Based on a review of the literature there is evidence that long term procurement relationships, especially in collaborative procurement, need early stakeholder engagement as an effective way of developing trust among stakeholders, thus facilitating innovation. As the innovation process take place, promoting early stakeholder engagement through various procurement systems is vital to avoid rework and unnecessary cost, enhance quality, overcome dispute throughout the construction process and overcome the problem of low productivity. The stakeholders' commitment, interest and power should be fully assessed so that project managers can tackle the key problems in the stakeholder management process. It is believed that effective engagement at an early stage could bring together viewpoints and identify potential concerns and interests from the point of inception. Early stakeholder engagement aims to minimize risks and expose opportunities available by ensuring the issues within the project can be identified earlier. Productivity Partnership (2012) reported that being involved in the early stages allows the stakeholder to understand the initial scope and future of the programme to ensure that the technical foundations for the project are appropriate in the longer, as well as shorter term. Project managers, with regards to any procurement system, should take into consideration the stakeholder existence at an early stage of the project. If the proposed procurement model is not innovative enough for dealing with the stakeholders, for example the traditional procurement system, steps to dealing with the issue include moving from a traditional procurement system to a hybrid system.

Relational contracting has been offered as a solution to the challenge of demanding and risky projects by promoting integration and joint risk management (Pishdad and Beliveau, 2010). The more innovative the procurement method, the more stakeholders are collaborative, committed and co-ordinated. The quality of the end product is guaranteed to be superior as the early stakeholder engagement, through its jointly made decisions, increases commitment to the no-dispute rule and mutual liability waiver among the key participants. Any expectations can be managed, hidden agenda can be brought to the surface and project priorities can be established. Clients and project managers should involve key stakeholders in the quality decisions of a project to get the desired level of quality and meet the expectation of key stakeholders as well as the end-user (Heravitorbati et al., 2011). Stakeholders' participation satisfaction shows that stakeholder engagement is key in making a project successful (Shenhar et al., 2001). Dealing with early stakeholder

engagement will embrace innovation in organisational activity as a non-technical innovation process. This idea could be implemented in any of the other procurement systems.

5. Conclusion

This paper gauges early stakeholder engagement in a project as a process for innovation. The insight of the paper highlighted the need for early stakeholder involvement from the inception phase to avoid redundancy of work, reduce unnecessary cost and to increase the productivity of the project to meet the expected in time, within cost and high quality goals. Stakeholder involvement in different procurement systems should be understood, so that stakeholders know their roles and responsibilities well in the project.

6. Future Research

This preliminary study is part of the conceptual framework of a doctoral research project to further explore the significance of innovation at the process, product and organisational level with respect to different procurement methods. For the next step of the research, a quantitative and qualitative approach will be conducted through questionnaire and interview, respectively. The questionnaire will be designed to support the proposed innovation framework and categorise the indicator (project, process, product or organisation) and procurement system.

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