

The effect of integration on project delivery team effectiveness

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Abstract

This paper investigates the impact that integration can have on teamwork effectiveness within construction project delivery teams. The level of team integration was assessed within selected award-winning delivery teams of completed projects. A similar assessment was made of teamwork effectiveness achieved within the same project teams. The findings of this research reveal that teams with different levels of integration had the same or similar levels of teamwork effectiveness. Thus whilst integration is desirable, it is not the only requirement or condition for improved teamwork within a construction sector context. The findings suggest that the role and value of integration in project teams is unclear relative to other performance enhancing approaches. Further research is recommended to identify the factors and conditions that influence the direct impact of integration on teamwork effectiveness within the project delivery team. © 2010 Elsevier Ltd and IPMA. All rights reserved.

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1. Introduction

Project team integration can be defined as *where different disciplines or organisations with different goals, needs and cultures merge into a single cohesive and mutually supporting unit* (Baiden et al., 2006) *with collaborative alignment of processes and cultures* (Ochieng and Price, 2009; Payne et al., 2003; Strategic Forum for Construction, 2003). In construction, integration often refers to collaborative working practices, methods and behaviours that promote an environment where information is freely exchanged among the various parties. Within an integrated team environment various skills and knowledge are seen as shared, and traditional barriers separating the design process from construction activities are removed or marginalised to improve project delivery (Austin et al., 2002; Baiden et al., 2003). A fully integrated team, as considered within this paper, has a single project focus and objectives; boundaries between individuals are diminished and team

members work towards mutually beneficial outcomes through the free sharing of information. A new team identity is thus formed by the fully integrated team and achievements, failures and successes are collectively shared (see Baiden et al., 2006; Ochieng and Price, 2009; Payne et al., 2003; Smith and Offodile, 2008; Strategic Forum for Construction, 2003; White, 2002).

Integration has been suggested as providing a demonstrable means of improving the effectiveness of teamwork and project delivery team performance (Achieving Excellence in Construction, 2003; Constructing Excellence, 2004b; DBF, 2000; Egan, 2002; Payne et al., 2003; Strategic Forum for Construction, 2003). Empirical evidence linking the two concepts has, however, not received much attention and examples of successful teamwork through integration are limited (Payne et al., 2003; Strategic Forum for Construction, 2003). Quantifiable examples of successful integration of project delivery teams are scarce, although one exception is the Movement for Innovation (M4I) in the UK which attempted to demonstrate the benefits of integration through case examples taken from practice (Constructing Excellence, 2004a). Exemplary project delivery teams within the industry that can be examined to

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explore and better understand the process of project delivery team integration.

This research examines the impact of integration on teamwork effectiveness. It explores effective principles based on a scale of progression towards what is considered as ‘good or promising practice’ in teamwork integration. The effectiveness of teamwork and level of integration within nine award-winning delivery teams of completed projects were assessed. This was aimed at determining whether the integration of the project delivery team members improves teamwork effectiveness within the team, and/or if project objectives can successfully be realised without fully espousing the benefits of team integration.

2. The need for teams

Teams are used in organisations in most sectors and industries due to the recognition that they are able to outperform individuals acting alone, especially when performance requires multiple skills and judgements (Hayes, 2002; Samuel, 1996; Scarnati, 2001). They have become the basic building blocks for many business organisations (Brannick and Prince, 1997; Katzenbach and Smith, 1993; Steward and Barrick, 2000). Teams can also be used to satisfy the basic human needs of affiliation and belonging as outlined in Maslow’s hierarchy of needs theory (Maslow and Frager, 1987).

In response to performance improvement demands on the construction industry, research into teams has significantly increased over recent years (*Achieving Excellence in Construction*, 2003; *Constructing Excellence*, 2004b; Ochieng and Price, 2009; Smith and Offodile, 2008). Many of the studies have adapted factors that influenced improved performance in the manufacturing sector. The results of such research have demonstrated that teams have significant potential for increasing productivity (Hayes, 2002) and frequently result in considerable performance improvement (Janz, 1999; Pagell and LePine, 2002), largely because they can get better results than where individuals operate within defined job roles. Within a team, there tends to be a variety of knowledge and skills, which can be pooled along with information and resources that can be shared (Driskell, 1992). The complex nature and the presence of different skills in construction, means that teams are needed for success in construction (Bower, 2003; Gould, 2002; Harris et al., 2006) because they enable complimentary use of available skills to achieve high productivity, (*Constructing Excellence*, 2004b; Conti and Kleiner, 1997).

3. Concept and process of teamwork

Bringing people together does not ensure that they will work together efficiently and make appropriate decisions, however, teamwork can be said to already be in place when two or more people have to share information and make decisions (Samuel, 1996). The definition of

teamwork alluded to above, also emphasises the need for team members’ efforts to be coordinated in a cooperative manner towards a common objective (Conti and Kleiner, 1997; Dickinson and McIntyre, 1997; Scarnati, 2001).

The existence of teamwork is often taken for granted because it is assumed to be the core concept of team formation (Hayes, 2002; Scarnati, 2001). This attitude has affected the effectiveness of the concept, especially in multi-disciplinary environments such as construction, where activities are performed by people with different skills within and across organisations who must share knowledge for optimum decisions. (Baker and Salas, 1997; Steward and Barrick, 2000). Project teams in construction are also often formed based on competition and less attention is given to compatibility (Tarricone and Luca, 2002). The desire to maximise profit becomes the main focus of individual members of the project team. This often leads to conflicting goals with other members of the project team. The importance of teamwork is consequently overlooked as individual teams pursue their objectives and drive for profitability (Ankrah et al., 2009; Gould, 2002; Hayes, 2002).

The effective application of teamwork helps to improve many aspect of a team such as co-ordination, innovation, horizontal communication and flexibility, however, it is not a not a panacea for solving all coordinating problems and poor application can has many negative consequences. Its effectiveness lies in its proper application for a given context (Nurmi, 1996). Dickinson and McIntyre (1997) identified and defined seven key components of teamwork which are critical to any improvement exercise: communication; team orientation; team leadership; monitoring; feedback; backup behaviour; and co-ordination. These highlight some key challenges for the construction project team.

Communication is central to the efficient performance of any team especially so on construction projects because of the different skill requirements. The challenge is to ensure that the right information gets to the appropriate person at the right time. Other challenges within the construction project team environment include alignment of attitudes which conflict with that of the project team and acceptance rather than compliance from members to share a common vision with leadership, which is often imposed by the terms of the contract, especially at the early stages of the project (Alshawi and Faraj, 2002; Ankrah et al., 2009; Samuel, 1996).

4. Teamwork effectiveness

Teamwork within the construction project environment is challenging when trying to get all project team members to be aware of other members’ contributions. The difficulty is further compounded when one has to ensure that members suggest better ways of undertaking an activity even when there is no direct benefit to the individual member

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