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International Journal of Project Management 34 (2016) 1123–1137

International Journal of Project Management

www.elsevier.com/locate/ijproman

Building absorptive capacity in an alliance: Process improvement through lessons learned

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Received 22 September 2015; received in revised form 16 May 2016; accepted 24 May 2016

Abstract

Lessons learned provide the greatest value when they form part of a continuous learning process and should be: documented, communicated, archived, throughout all stages of a project. This can enable a project to maximize its 'absorptive capacity' (i.e. its ability to value, assimilate and apply new knowledge). With this in mind, the development and implementation of continuous 'lessons learned' process adopted by a program alliance that was able to improve its safety and quality performance is presented. The alliance was able to shift its mindset from single to double loop learning fuelling its absorptive capacity. The paper examines 'how' the lessons learned process was implemented and presents examples of learning that were implemented. The alliance's experiences in enabling the acquisition and transfer of knowledge through their 'lessons learned' initiative provides a learning opportunity for organizations seeking to ameliorate the performance of the projects that they are charged with delivering.

Keywords: Knowledge; Lessons learned; Innovation; Process improvement; Rework; Safety

1. Introduction

> "There's only one thing more painful than learning from experience, and that is not learning from experience." Archibald MacLeish (1892–1982).

Experience is a pivotal part of the learning process for professionals and trades people in the construction industry. This process is referred to as 'experiential learning', which is the process of learning through experience, and is defined as "learning through reflection on doing" (Felicia, 2011, p.1003). Such learning forms an integral part of the improvement process of construction organizations and the projects that they are involved with delivering (Love et al., 2000a). The stimulus for learning is enabled by the acquisition and transfer of knowledge within intra-and-inter organizational members (Love et al., 2000b). Yet the temporal and unique nature of construction often hinders team members from transferring their acquired knowledge from one-project to the next unless processes are developed to embed 'new learnings' that are derived from individuals' experiences and reflections. Capturing and leveraging knowledge from previous projects can significantly contribute to improving the productivity and performance of new projects (Kotnour, 2000; Prencipe and Tell, 2001; Brady et al., 2002; Schindler and Eppler, 2003; Williams, 2008).

The underlying research question that this paper seeks to address is to determine how an alliance is able to maximize its 'absorptive capacity' (i.e. its ability to value, assimilate and apply new knowledge) through instigating a lesson learned. In addressing this question, the experiences of a program alliance

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http://dx.doi.org/10.1016/j.ijproman.2016.05.010
0263-7863/00

that developed a lesson learned initiative to specifically combat safety and quality issues are examined. The lessons learned initiative juxtaposed with an organizational change program facilitated by the alliance to improve its 'absorptive capacity' by shifting from a *single-loop* (i.e. correcting an action to solve or avoid a mistake) to *double-loop* (i.e. correcting the underlying causes behind the problematic action) learning environment. As a result, an array of benefits materialized including a significant reduction in rework, non-conformances (NCRs) and safety incidents being experienced. The implementation of a lesson learned initiative provided a mechanism for enabling collective learning between alliance members and the contractors to occur. It is promulgated that the alliance's experiences in enabling the acquisition and transfer to knowledge through their 'lessons learned' initiative presented in this paper provides a learning opportunity for those organizations that are seeking to ameliorate the performance of the projects that they are charged with delivering.

The paper commences with a review of the lessons learned literature and then examines issues associated with the transfer of knowledge within projects with emphasis being placed on the need to embrace situated learning. An exploratory case study of a program alliance that sought to build its absorptive capacity through engaging process and technological change is examined under the following four emergent themes: (1) implementing change; (2) learning climate; (3) learning from lessons learned; and (4) learning in action. The findings are then used to determine the essential ingredients that were required to enable its absorptive capacity to increase so that knowledge that had been acquired could be used to improve its safety and quality performance. In addressing the need to ensure 'relevance' (i.e. practicality and socially applicable), the experiences that emerged from 'practice' are presented. Thus, the paper does not seek to inform practitioners about 'what to do' but rather provide an avenue for 'what they might do' to improve safety and quality performance through implementing a continuous lessons learned initiative. To the authors' knowledge, this is the first example in construction where organizations have actually used their knowledge recombination capabilities to absorb knowledge and learn to reduce rework while improving safety.

2. Literature review

2.1 Lessons learned

A plethora of research examining the nature of lessons learned practices used by organizations and project-based firms to capture, leverage and disseminate tacit and explicit knowledge has been undertaken (e.g. Zedtwitz, 2002; Schindler and Eppler, 2003; Williams, 2008; Caldas et al., 2009; Milton, 2010; Carrillo et al., 2013; Duffield and Whitty, 2015). While lessons learned practices such as post-project reviews and knowledge repositories may be implemented in construction projects, their effectiveness in disseminating new knowledge to enable process improvement has been questioned (Carrillo et al., 2013).

This is due to the absence of systematic organizational mechanisms that can capture and transfer knowledge within and between construction organizations and their projects (Carrillo, 2005; Kululanga and Kuotcha, 2008; Caldas et al., 2009; Paranagamage et al., 2012; Carrillo et al., 2013; Forcada et al., 2013; Shokri-Ghasabeh and Chileshe, 2014). Williams (2008), for example, revealed that while many organizations conduct lessons learned, they seldom implemented them in future projects due to a lack of clear guidelines for implementation, resources and management support. Table 1 provides a summary of the barriers that have been identified as to inhibiting lessons learned.

A major limitation to implementing lessons learned by employees are time constraints (Table 1). Invariably, team members are under constant pressure to adhere to pre-defined project deliverables that are more often than not overly optimistic. Consequently, they seldom have time to invest in additional activities they do not perceive to be of immediate value (Paranagamage et al., 2012). In fact, Paranagamage et al. (2012) suggests that there is a proclivity for formal lessons learned practices to be too process-driven as they are inherently dependent on completing documents and forms. Yet, processes can be designed to be efficient and not create excessive workload for team members (Love et al., 2015a). For example, recognition and rewards can be given to incentivise individuals and teams in the participation of lessons learned by actively sharing their reflections and experiences with a goal to ensuring project deliverables is met.

Within construction, there has been an absence of a culture that embraces and engenders learning (Love et al., 2000a, 2015a, 2015b). As a result, team members are often reluctant to openly share their experiences and knowledge, as well as seek advice due to issues of blame and internal competition (Carrillo et al., 2013). A climate that engenders mutual learning needs to be founded on trust and open communication (Holt et al., 2000).

According to Davis and Love (2011) and Love et al. (2011), relational contracting such as alliances provides a structure and environment for trust to materialize and incentives to be used to drive behaviour within a project. Research undertaken by Love et al. (2015a) has demonstrated that alliances can provide an environment for providing a mind-set change towards implementing lessons learned processes at the individual and organizational level. For such a change to occur, however, Love et al. (2016) observed that an authentic style of leadership was necessary to gain the trust and support of the project team so that learning could be facilitated through a no-blame culture being in place. Essentially, to enable the transfer and sharing of knowledge, team members need to feel 'safe' to admit mistakes and openly discuss solutions to problems.

2.2 Knowledge transfer

The organizational learning literature is sceptical about the effectiveness of routine knowledge management practices such as project closeout reviews (Williams, 2008). MacMaster (2004, cited in Williams, 2008, p. 248) points out that