Available online at www.sciencedirect.com

ScienceDirect

International Journal of Project Management 33 (2015) 1170 – 1179

International Journal of Project Management

www.elsevier.com/locate/ijproman

Overcoming resistance to change in engineering and construction: Change management factors for owner organizations

Brian C. Lines [a,*], Kenneth T. Sullivan [b], Jake B. Smithwick [b], Josh Mischung [b]

[a] University of Kansas, 1530 W. 15th Street, 2135B Learned Hall, Lawrence, KS 66045, United States
[b] Arizona State University, P.O. Box 873005, Tempe, AZ 85287, United States

Received 18 August 2014; received in revised form 7 January 2015; accepted 12 January 2015
Available online 27 January 2015

Abstract

For owner organizations in the architecture, engineering, and construction industry, successful implementation of new processes for procuring, contracting, and managing requires a concerted change management effort. The objective of this study was to empirically measure the impact of individual change management factors on minimizing resistance from organizational members during implementation, which is often cited as a major reason for organizational change failure. Project team resistance to the implementation of a new project delivery system was tracked across sixteen owner organizations. Findings include identification of six change management factors that contribute to minimizing resistance to change, including certain aspects of project scope, size and duration, organizational expectations of change implementation speed, the establishment of formal change agents, and the level of change agent involvement with implementation activities. Implications for change leaders and practitioners are discussed to recommend strategies for reducing resistance to change.

Keywords: Engineering and construction; Change management; Alternative procurement methods; Project management; Resistance to change

1. Introduction

Owner organizations that frequently purchase services from the architecture, engineering, and construction (AEC) industry have continually sought to improve project performance by enhancing their standard sourcing and project management practices (CERF, 2000; Rahman, 2014). Typical owner goals are to improve internal process efficiency in the face of increasing resource constraints as well as to improve performance and consistency in their management of hired external AEC firms (Sullivan, 2011). These goals are often accomplished by implementing changes in major areas of AEC project delivery. One major area is alternative procurement methods, which include different evaluation practices aimed at minimizing the owner's risk of procuring low-performing AEC firms (Chan and Kumaraswamy, 1997; Iyer and Jha, 2005; Wardani et al., 2006). Innovative approaches to risk transfer are another major area, where unconventional contracting methods are intended to improve the identification, mitigation, and transfer of potential project risk factors (Lines et al., 2014a; Witt and Liias, 2011). Third, new project management processes are intended to enhance project control such that owner organizations are better able to measure project performance and increase accountability of hired AEC firms to deliver expected levels of quality (Perrenoud et al., 2013; Rahman and Kumaraswamy, 2004).

Implementation of new practices in the procurement, contracting, and management of AEC projects requires a concerted change management effort to assist organizational members who must learn new approaches while simultaneously

* Corresponding author. Tel.: +1 785 864 6503.
E-mail address: brianlines@ku.edu (B.C. Lines).

http://dx.doi.org/10.1016/j.ijproman.2015.01.008
0263-7863/00/

disengaging from traditional practices, which often have been built up over decades of operation (Migliaccio et al., 2008). The change management literature emphasizes the difficult and complex nature of change implementation and often cites high failure rates (Ahn et al., 2004; Balogun, 2005). One major cause of change effort failure is resistance from organizational members (Foote, 2001), where resistance to change is defined as any dissenting actions that slow, oppose, or obstruct a change management effort (Armenakis and Harris, 2009; Giangreco and Peccei, 2005). Previous research has noted resistance from organizational members as a barrier to change implementation (Mabin et al., 2001; Piderit, 2000), yet little empirical data has been recorded for the AEC industry specifically.

2. Literature review

2.1. Resistance to change

The concept of resistance to change is rooted in Lewin's (1947) unfreezing, moving, and freezing model of organizational change, which stated that there are driving forces that seek to either bring about or resist change. Research in the areas of resistance to change often describes it on the individual level as three dimensions: cognitive, affective, and behavioral (Erwin and Garman, 2010; Isabella, 1990). The cognitive dimension refers to how employees think about the change, including their perceived capability to be effective in new work roles (Giangreco and Peccei, 2005). The affective dimension is defined as the emotional and psychological reactions employees experience in how they feel about the change (Denhardt et al., 2009). The behavioral dimension examines resistance in terms of employee action responses, and whereas the first two dimensions are often accepted as the sources or reasons causing resistance, the behavioral dimension is the actual manifestation of resistance in the form of observable conduct, deeds, and events (Fiedler, 2010; Giangreco and Peccei, 2005; Lines et al., 2014b). This study focuses exclusively on behavioral resistance to change due to the fact that it is the only directly observable dimension. Twelve specific types of resistive behaviors, shown in Table 1, were observed in this study based upon definitions from the literature (Bovey and Hede, 2001a,b; Emiliani and Stec, 2004; Fiedler, 2010; Giangreco and Peccei, 2005; Hultman, 2006; Mishra and Spreitzer, 1998; Van de Ven and Poole, 1995).

Table 1
Resistive behavior types.

Type of resistive behavior	Definition of the resistive behavior
Reluctant compliance	Doing the minimum required, lack of enthusiasm, guarded and doubtful
Delaying	Agreeing verbally but not following through, stalling, procrastinating
Lack of transparency	Hiding or withholding useful information during implementation
Restricting education	Avoiding or restricting the spread of the change message
Arguing & open criticism	Verbally opposing and/or finding fault with the change implementation
Obstructing & subverting	Openly sabotaging, blocking, undermining the change implementation
Spreading the negative word	Spreading negative opinions and rumors, appealing to fear in resistance
Termination	Voluntary or involuntary removal from the project or organization
Reversion	Changing back to traditional practices during the implementation
Misguided application	Changing the implementation beyond the stated process, goals, methods
Forcing the change	Striving for perfection at expense of implementation effort
External influence	Behavior in response to negative feedback from external sources

2.2. Change management factors

The AEC industry presents unique challenges for change practitioners; for example, its project-based nature necessitates that change be implemented on the level of individual projects. Since individual projects can be viewed as "temporary organizations" (Gareis, 2010; PMI, 2009), specific factors within the project and associated project team are important to consider from a change management perspective (Whelan-Berry and Alexander, 2007). Critical factors include the project scope, size, and duration (Cooke and Williams, 2004; Loosemore et al., 2006) as well as personnel hierarchical position and experience levels (Smollan, 2011; Yun et al., 2011).

The organization's approach to change implementation is also important to consider. Unrealistic expectations that underestimate the amount of time and effort required to accomplish the change may lead to resistance (Ankrah et al., 2008; Armenakis et al., 1999; Sullivan, 2011). Previous research has also reported a directly proportional relationship with change message delivery (in the form of change-related education and training received by organizational members) and change management success (Alvesson, 2002; Schneider et al., 1994). The formal designation and involvement of change agents to lead change implementation is another critical factor, and many organizational change researchers have specifically called for the establishment of a "transition team" to guide the change (Hunsucker and Loos, 1989; Kanter, 1983; Kotter, 1995). These factors, along with the project and personnel factors previously discussed, were measured within this study and are summarized in Table 2.

3. Main research questions and hypotheses

Although the literature reveals a considerable amount of work done in the area of resistance to change, the existing research covers a wide range of industry sectors (e.g. manufacturing, technology, business services) as well as a variety of change efforts (e.g. planned change, continuous improvement, mergers and acquisitions, restructuring, response to emergency, technology integration). Little research is specific to the implementation of planned change within the architecture, engineering, and construction industry on the level of sourcing, contracting, and project management operations. In response to this research gap, the research question