Learning in project-based organizations: The role of project teams' social capital for overcoming barriers to learning

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Abstract

It is a major challenge for project-based organizations to learn across project boundaries by making project-level knowledge available to the organization as a whole. This study argues that project teams' social capital is conducive to overcoming barriers to learning in project-based organizations. Based on a large-scale analysis of engineering projects in Germany, the study shows that project teams' social capital, i.e. the intra-organizational social ties of project teams with their colleagues outside the project, compensates for project teams' lack of opportunity, motivation, and ability to make project-learnings available to the organization as a whole. By contributing to overcoming barriers to learning in project-based organizations, social capital represents an important driver of organizational learning about market conditions, products and technologies as well as project management.

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1. Introduction

Organizations increasingly rely on projects to carry out their business activities (Midler, 1995; Whittington et al., 1999). If most or all business activities of an organization are undertaken in the form of projects, these organizations are referred to as project-based organizations (Hobday, 2000). Project-based organizations are the prevalent mode of organization in a variety of industries, including engineering (Shenhar and Dvir, 1996), advertising (Grabher, 2002), construction (Winch, 1989), and film (Bechky, 2006).

Whereas early literature mainly focused on the achievement of project goals and accordingly studied techniques and tools that increase the efficiency and effectiveness of individual projects (White and Fortune, 2002), more recent research has emphasized organizational learning as a key performance driver in project-based organizations (Blindenbach-Driessen and van den Ende, 2006; Brady and Davies, 2004; Söderlund, 2004). Organizational

learning in project-based organizations most commonly refers to the process of making newly created project-level knowledge available to the organization as a whole by sharing, transferring, retaining, and using it (Argote and Ophir, 2005; Prencipe and Tell, 2001). Organizational learning is regarded as a key performance driver in project-based organizations because prior projects offer potentially valuable experiences that can be applied in similar projects in the future or generate new knowledge about the organization's technology and market base that could lead to new business offerings (Brady and Davies, 2004).

While projects are widely recognized as being wellsprings of learning and innovation (Davies and Hobday, 2005), organizational learning from projects however faces substantial challenges (DeFillippi and Arthur, 1998; Edmondson and Nembhard, 2009; Keegan and Turner, 2001; Lundin and Söderholm, 1995; Scarbrough et al., 2004). These difficulties arise due to the unique and discontinuous nature of project-based work which creates intra-firm boundaries that hinder the transfer and use of valuable knowledge gained within particular projects by subsequent projects and/or the project-based organization as a whole (Gann and Salter, 2000; Prencipe and Tell, 2001).

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It thus seems important to understand how project-based organizations can overcome impediments to learning from their projects (Lindner and Wald, 2011). Empirical research has provided evidence that organizational learning in project-based organizations is supported by specific context conditions. A number of studies examined technical and structural remedies for overcoming barriers to organizational learning, for example, knowledge management systems (Cooper et al., 2002; Koskinen, 2004; Williams, 2004), IT-infrastructure (Laurikkala et al., 2002), memory objects (Cacciatori, 2008), or post-project reviews (Koners and Goffin, 2007). Yet learning foremost is a social process in which individuals and groups augment their knowledge. Therefore, it seems appropriate also to consider how the social context may enhance learning in project-based organizations. However, only few studies have illuminated this aspect highlighting the roles of communities of practice (Ruuska and Vartiainen, 2005; Wenger, 2000), partnering flexibility (Schwab and Miner, 2011), culture and leadership (Lindner and Wald, 2011), and knowledge sharing networks (Bresnen et al., 2003; Kratzer et al., 2010; Maurer et al., 2011). Despite these important contributions, our understanding of how social context conditions facilitate learning across project boundaries is still incomplete and requires additional research (Bresnen et al., 2005). In particular, we need to further unpack which specific social context conditions lead to different organization-level learning outcomes and why (Bakker, 2010).

Heeding this call, the present study extends prior research on organizational learning in project-based organizations by spelling out how project teams' internal social capital affects three organization-level learning outcomes that are crucial for organizational performance. Drawing on the social capital literature (Adler, 2002), we argue that project teams' intra-organizational social capital, i.e. the structure and quality of project team members' social ties with their intra-organizational colleagues in the project-based organization, facilitates organizational learning because it affects their opportunities, motivation and ability to share knowledge across project boundaries, thus alleviating barriers to organizational learning. On the basis of a large sample of project-based organizations in the German engineering industry, the study shows that project members' intra-organizational social capital enhances organization-level learning in three knowledge domains that are crucial for organizational performance: knowledge about market conditions, products and technologies, as well as project management.

This study makes two main contributions to emerging research on how social context conditions affect organizational learning in project-based organizations (Bakker et al., 2011; Bresnen et al., 2003). First, it introduces theory and related evidence that advance understanding about how and why project teams' intra-organizational social capital facilitates organization-level learning in project-based organizations. It thus extends the discussion of how barriers to organizational learning in project-based organizations can be overcome (Ajmal and Koskinen, 2008; Brady and Davies, 2004; Söderlund, 2004). Second, this study contributes to earlier research on learning outcomes in project-based organizations (Bakker et al., 2011; Kasvi et al., 2003) by unpacking how project teams' intra-organizational social capital affects organization-level learning outcomes in three distinct knowledge domains that are crucial for organizational performance.

2. Theory and hypotheses

2.1. Organizational learning

Organizational learning is a multi-faceted phenomenon that has attracted researchers for more than five decades. Yet to date no accepted theory of organizational learning has emerged (Crossan et al., 2011). Rather, organizational learning has been studied from different theoretical perspectives. Easterby-Smith and Araujo (1999), for example, differentiate between a technical and social view of organizational learning. Whereas the technical view focuses on the processing of and response to information, the social view acknowledges learning as the result of social interaction that helps people make sense of their work experiences. Relatedly, DeFillippi and Ornstein (2004) distinguish an information processing, behavioral, social construction, and action learning perspective on organizational learning.

Despite different theoretical assumptions, research foci and cognitive interests, literature on organizational learning most generally agrees that organizational learning involves processes through which organization-level knowledge is enhanced (Argyris and Schön, 1978; Easterby-Smith and Lyles, 2003). While research has suggested different conceptualizations of learning processes (e.g. Argote and Miron-Spektor, 2011; Crossan et al., 1999; Huber, 1991), organizational learning is often seen to comprise the creation of knowledge, its transfer within the organization, its retention, and use (Argote and Ophir, 2005; Schulz, 2005). Creating knowledge involves the production or emergence of new knowledge (Nonaka et al., 2006). Knowledge transfer refers to the dissemination of created knowledge from one organizational actor – individual, team or organizational unit – to another (van Wijk et al., 2008). Knowledge retention denotes where in organizations knowledge is stored and retrieved (Levitt and March, 1988). Knowledge can be embedded in individual organization members (Starbuck, 1992) and/or knowledge repositories such as organizational routines, formal rules, and transactive memory systems (Cyert and March, 1963; Lewis and Herndon, 2011). Organizational learning manifests itself in changes in organizational actors' knowledge repositories and/or their actions that are informed by the modified knowledge base (Argote and Ophir, 2005). As Huber (1991: 89) puts it: "An entity learns if, through its processing of information, the range of its potential behaviors is changed." Application and use of newly acquired knowledge thus is the ultimate process indicating organizational learning.

2.2. Organizational learning in project-based organizations

As organizational learning is a multi-level phenomenon involving individual, group, organizational and, at times,