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ORGANIZATIONAL AMBIDEXTERITY IN THE CONSTRUCTION INDUSTRY

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Abstract
Organizational ambidexterity refers to an organization's ability to both exploit existing knowledge, assets, and positions for short-term profits and also explore new knowledge, technologies, and markets to enhance long-term development. Ambidexterity research has mostly focused on firm or business unit levels. Studies dealing purely with project or alliance levels in project-based industries are non-existent. The purpose of this conceptual paper is to examine if it is a useful concept for discussing sustainability and competitive advantage in the construction industry, to what degree ambidexterity is present, and how it may be affected by procurement procedures and project governance. Short-term project focus and decentralization inhibits learning from one point in time and space to another, making it more difficult to reap the benefits of exploration than of exploitation. Due to strong path dependence there is an apparent risk that construction industry actors may be trapped in suboptimal stable equilibrium by focusing too heavily on exploitation and too little on exploration. This paper discusses how procurement procedures and project governance can affect the possibilities to achieve ambidexterity in construction projects. Joint specification, partner selection, incentive-based payment, and collaborative tools are important means to affect ambidexterity so that a suitable balance between exploitation and exploration can be obtained in construction projects.

Keywords: ambidexterity, exploration, exploitation, innovation, procurement.

INTRODUCTION

Background

Recently, the focus on trade-off relationships in organizational research has been shifted to paradoxical thinking (Eisenhardt, 2000), which is pinpointed in research about organizational ambidexterity. Although the concept of organizational ambidexterity was first coined by Duncan (1976), most literature on the subject stems from March (1991) and his seminal work on exploration and exploitation in organizational learning. Exploration includes things captured by terms such as search, diversity, adaptability, risk taking, experimentation, flexibility, discovery, innovation, and long-term orientation. Exploitation on the other hand involves refinement, alignment, control, constraints, efficiency, and short-term orientation (March, 1991; Gibson & Birkinshaw, 2004; Andriopoulos & Lewis, 2010). Accordingly, ambidexterity involves the capability to both exploit existing knowledge, assets, and customers/markets for short-term profits and also explore new knowledge, technologies, and customers/markets to enhance long-term development (O´Reilly & Tushman, 2008). Due to exploration's greater uncertainty most organizations focus more on exploitation (Uotila et al., 2009), resulting in short-term success but long-term stagnation and failure (O´Reilly & Tushman, 2008). Achieving an appropriate balance

between exploration and exploitation is therefore critical for sustainable competitive advantage (March, 1991; Gupta et al., 2006).

Earlier ambidexterity research has mostly studied firm level or business unit level (Mom et al., 2007; Raisch & Birkinshaw, 2008). Koza and Levinthal (1998) were first to adopt the exploration/exploitation paradox in an inter-organizational context when investigating strategic alliances. In recent years additional investigations have contributed to this knowledge, suggesting that ambidexterity is a highly relevant concept in external relationships among firms. However, in spite of the emerging interest for ambidexterity in alliances, there is limited understanding of how exploration and exploitation impact alliance performance and how ambidexterity can be facilitated through different organization designs and governance forms (Im & Rai, 2008). Prior investigations that focus on how to achieve ambidexterity at various organizational levels have found that ambidexterity is heavily affected by both formal organizational aspects (e.g hierarchical structures, control mechanisms, formalization, partner selection procedures, forms of payment) (Koza & Lewin, 1998; Jansen et al., 2006; Lavie & Rosenkopf, 2006; Jansen et al., 2008) and informal social aspects (e.g. connectedness, shared vision) (Jansen et al., 2006; Jansen et al., 2008; Tiwana, 2008). However, Tiwana (2008) argues that pure project-level investigations, in which both ambidextrous behaviors and their effects on performance are studied within projects, are very scarce although much of alliances' innovation work is performed within the boundaries of projects. This gap may be due to that ambidexterity studies have not yet investigated project-based industries, such as the construction industry (Eriksson & Westerberg, 2011).

Although sometimes challenged, the conventional view is that the construction industry lacks innovation (Widén & Hansson, 2007), but the suggested improvement agenda fails to address the specificities of innovating within the project-based context (Dubois & Gadde, 2002; Harty, 2008). In prior construction management literature the need to break down barriers to innovation and the need to resolve conflicts between project actors are generally revealed as conclusions rather than starting points (Harty, 2008). Hence, it is vital to develop a more detailed understanding of how a balance between exploration/exploitation can be achieved in inter-organizational projects and how it affects project performance. In construction projects both formal and informal aspects are affected by procurement procedures and project governance, which determine responsibilities and authorities in the entire construction process, affecting the degree of integration and cooperation among project participants (Eriksson & Westerberg, 2011). Formal and informal mechanisms related to procurement procedures and project governance are therefore relevant to investigate in order to increase our understanding of how they may affect the achievement of organizational ambidexterity.

Purpose of the paper

This paper addresses the abovementioned gap in the ambidexterity literature by conceptually investigating ambidexterity in inter-organizational projects in the project-based construction industry. When investigating this subject for the first time in the construction context, it seems pertinent to examine if it is a useful concept for discussing sustainability and competitive advantage in this industry, to what degree ambidexterity is present, and how it may be affected by procurement procedures and project governance.

This paper thereby aims to address and conceptually discuss three research questions:

1) Is organizational ambidexterity a useful concept that can enhance sustainable project performance in the construction industry?
2) To what degree is organizational ambidexterity apparent in construction projects?
3) How can organizational ambidexterity be facilitated through procurement procedures or other related mechanisms?

THEORY

Three types of ambidexterity

In early research, authors have typically viewed ambidexterity in 1) *structural* terms by separating exploitation and exploration activities in different business units (Duncan, 1976; Tushman & O´Reilly, 1996; O´Reilly & Tushman, 2004) or parallel structures involving task partitioning within a single business unit (e.g. project team or quality circle) (Goldstein, 1985; Adler et al., 1999) or 2) *sequential* terms by temporal separation (i.e. punctuated equilibrium) through focusing on first one type of activity and then the other one (Duncan, 1976; Adler et al., 1999; Gupta et al., 2006). True paradoxical thinking is however obtained only when 3) *contextual* ambidexterity is adopted, that is, when there is a capacity to simultaneously and synchronously pursuit exploitation and exploration within a business unit or work group (Gibson & Birkinshaw, 2004; Gupta et al., 2006). Most scholars focus on one or another of these different types of ambidexterity but recent research has found that in reality a combination of different types may be most practical (Raisch et al., 2009; Andriopoulos & Lewis, 2010).

Ambidextrous performance

There is a lack of studies that explicitly address the paradox of ambidextrous performance, including both exploitative results (i.e. alignment with project objectives) and explorative results (i.e. adaptation to changes in the environment) (Tiwana, 2008). Projects are inherently bounded in time and space, making it natural to address and focus on short-term exploitative performance. However, since project objectives can evolve during development in synchrony with new information, unanticipated shifts in underlying technologies, and emerging market requirements, exploration may be equally important (Tiwana, 2008).

In the construction industry, project performance is measured through the short-sighted iron triangle of cost, time, and quality (Chua et al., 1997; Swan & Khalfan, 2007). For industrial actors with concern for sustainability, the exploitation focused “iron triangle” is too limited. Also more long-term and explorative elements, such as lifecycle costs, environmental impact, and innovation, need to be addressed in order to obtain a more sustainable perspective on project performance (Eriksson & Westerberg, 2011). Furthermore, most construction projects are characterized by high complexity (making it hard to estimate an accurate cost of the finished project) and uncertainty (increasing the risk for changes in scope and content) (Palaneeswaran et al., 2003; Eriksson, 2010b), making explorative adaptations required. This paper therefore discusses ambidextrous performance in order to achieve a more sustainable perspective on project performance than the iron triangle obtains.

AMBIDEXTERITY IN DIFFERENT ENVIRONMENTS

Prior research indicates that ambidexterity is applicable in several different environments. 1) Even if empirical findings have identified some differences in how to manage ambidexterity they suggest that ambidexterity is relevant and applicable across different industries in both high-tech (Brown & Eisenhardt, 1997; Beckman, 2006; Lavie & Rosenkopf, 2006; Mom et al., 2007) and low-tech manufacturing industries (He & Wong, 2004; Sidhu et al., 2004). 2) Other empirical investigations concur that exploration is particularly important in a changing environment, whereas it becomes less critical in slow moving environments (Mom et al., 2007; Uotila et al., 2009). Exploitation may thereby be efficient also in a somewhat longer time perspective when slow technological change do not make current knowledge obsolete (Uotila et al., 2009). However, O´Reilly and Tushman (2008) mean that low rates of change do not make ambidexterity pointless; it merely makes it possible to divide exploration and exploitation into different sequences instead of performing them simultaneously. Another study have investigated the uncertainty dimension of dynamic environments and found that ambidexterity is especially vital in contexts with high environmental uncertainty, in terms of fluctuating revenues (i.e. volatile net sales) due to economic booms and downturns (Lin et al., 2007). 3) Another environmental aspect is the degree of competition, reflected in the number of competitors and the number of areas in which there are competition. Through a large scale survey Jansen et al. (2006) found that exploitative innovations improve financial performance in highly competitive environments. In order to tackle tough price competition, exploitation then serves to improve existing products and increase cost efficiency without the substantial risks and costs associated with exploratory innovations (Jansen et al., 2006).

Due to the broad applicability of the ambidexterity concept it is difficult to see why it should not be relevant in the construction industry. 1) Although construction often is labeled as a low-tech industry this notion is not theoretically grounded and is increasingly questioned as new and advanced tools and technologies are utilized to a growing extent (Harty, 2008). 2) In terms of change rate, the construction industry is often said to be characterized by a slow technological change, but Gann and Salter (2000) mean that construction firms operate within a dynamic environment in which rapid economical and societal changes create demands for new types of buildings and infrastructures. In addition, the construction industry is very sensitive to economic booms and downturns, thereby facing an economically volatile and uncertain situation that supports the argument for ambidexterity. 3) In the construction industry the degree of competition is varying in different countries, in different types of projects and at different points of time. In a quantitative study performed by Reichstein et al. (2005) it was found that the competitive forces requiring construction firms to innovate were weak in the UK. In Sweden, there are only a few large contractor firms that compete for major infrastructure contracts, whereas the number of competitors is significantly higher for smaller projects, especially in housing. The competitive environment also fluctuates heavily with economic booms and downturns. In economic downturns there are many companies that compete with low prices to win a project to keep their staff busy. In addition, competitive tendering based on lowest price is the most common way to select a partner (Eriksson, 2008b), indicating tough price competition. All in all, there are some inherent characteristics that suggest that exploitative behaviors may be somewhat more beneficial than exploration but a pure focus on exploitation or exploration is probably not as beneficial as a mix, indicating that ambidexterity is suitable.

Proposition 1: Ambidextrous behaviors among project actors enhance ambidextrous construction project performance.

DEGREE OF AMBIDEXTERITY IN CONSTRUCTION PROJECTS

Divorce of design and construction

For subsystems (e.g. business units or projects) with scarce resources sequential ambidexterity is more practical than structural solutions (Beckman, 2006; Gupta et al., 2006). Sequential ambidexterity is also more suitable in slowly changing environments, whereas exploration and exploitation must be performed simultaneously by structural ambidexterity in fast changing environments (O´Reilly & Tushman, 2008). Sequential ambidexterity can be achieved by focusing more on exploration in the early stages of a project and on exploitation in the end of the project during production/implementation (Raisch et al., 2009; Andriopoulos & Lewis, 2010). Prior ambidexterity research has found that formalization, which acts as a frame of reference that reduces variance and deviation from existing knowledge, is an important factor that enhances exploitative innovation (Jansen et al., 2006). A related finding was made by Mom et al. (2007) in a quantitative investigation of 104 managers in a US company. They found that top-down communication and knowledge inflow enhance a manager's exploitation activities (Mom et al., 2007).

As construction projects are often characterized by scarce resources and a slow or moderate technological change, sequential ambidexterity may be viable. However, ambidexterity is often achieved through a combination of structural and sequential strategies by letting consultants/architects first explore different types of technical solutions during the design phase and then letting contractors exploit their existing knowledge to efficiently build the specified product. The traditional way of procuring construction contractors based on detailed and fixed design specification entails formalization and top-down knowledge inflow from the contractors' perspective. This structural and sequential divorce between design and construction results in a prolonged project duration (Pietroforte, 1997) and poor buildability (Eriksson, 2010a). The divorce also hampers innovation and implementation of explorative solutions during the construction stage due to lack of joint problem-solving (Korczynski, 1996). Hence, the traditional sequential and structural approach enhances more exploitation than exploration and is not reaping the benefits of ambidexterity.

Partner selection based on competitive tendering

Prior research has found that purposeful staffing of subunits and groups is important for ambidexterity (O´Reilly & Tushman, 2008). Diversity is important for creativity and ground-breaking advancement, while cohesiveness nurture mutual understanding and smooth group work and thereby efficiency (Beckman, 2006; Andriopoulos & Lewis, 2010). When partners are familiar with each other, they can rely on prior experience and existing arrangements to enhance the predictability and reliability of the collaboration (Lavie & Rosenkopf, 2006). Exploitation is thereby facilitated by establishing teams of members who have previously worked together, whereas exploration is enhanced by heterogeneous teams in which individuals have different prior experiences and affiliations (Beckman, 2006; Lavie & Rosenkopf, 2006; Andriopoulos &

Lewis, 2010). In addition, Koza and Lewin (1998) argue that output control is most suitable in exploitative alliances. Output control, defined as the degree to which the focal firm monitors the results or outcomes produced by the partner (Aulakh et al., 1996), is closely related to the price mechanism (Hennart, 1993). In line with this reasoning, rigid client constraints (e.g. financial and technical) have been found to turn the focus to exploitation and inhibit exploration (Andriopoulos & Lewis, 2010), whereas slack in human and monetary resources enhance exploration, as they condition information search, experimentation and risk-taking (Sidhu et al., 2004).

These related aspects are relevant in a construction industry context. In a survey study, Eriksson (2008b) found that the most important factor influencing construction clients' choices of governance forms and procurement procedures was the client's project constraints, in terms of budget and time schedule. As a consequence, the most dominant partner selection routine involves competitive tendering with multiple bidders evaluated chiefly on lowest price, entailing a focus on output control (Eriksson & Laan, 2007). Although the open bid procedure enhance the establishment of a heterogeneous team, the short-term focus on time and money in every single construction project results in scarce resources, indicating a propensity for exploitation rather than exploration.

Fixed price payment

A payment system rewarding the supplier for his output (e.g. a fixed price for a product delivered) indicates output control (Gencturk & Aulakh, 1995), which is appropriate in exploitative alliances (Koza & Lewin, 1998). When uncertainty is high, output control through fixed prices may lead to inflexibility since the supplier may resist adapting to changed circumstances (Aulakh & Gencturk, 2000).

In the construction industry fixed price payment is most common although it may generate many problems (Eriksson & Laan, 2007). It shifts all the risk to the contractor who will therefore focus on short-term efficiency and the use of known technological solutions. Since uncertainties in construction are high and derived from many different sources, the design is often changed because of changes in the client's preferences (Kadefors, 2004). The traditional output-based payment that enhances exploitation may therefore be inappropriate.

Exploitation focus

Firms may get stuck in suboptimal stable equilibrium for a long time since path dependence in terms of earlier experiences affects managers' choices more than the suitability of the various alternatives (March, 1991; Lavie & Rosenkopf, 2006). Indication of such path dependence hindering ambidexterity was found in a large cross-industry survey, finding that 67% of the studied firms relied on a single organizational structure (cross-functional teams) for all their development processes, although the results showed that firms tailoring the structure to fit the purpose (incremental vs radical new product development) were more successful (de Visser et al., 2010).

In the construction industry, path dependence seems to heavily influence clients' decisions related to project governance and procurement (Laedre et al., 2006). In fact, the third most important factor influencing construction clients' choices of governance forms and procurement

procedures is the client's earlier experience of the procedure (Eriksson, 2008b). Furthermore, studies of barriers to change in the construction industry have found that the conservative construction industry culture is the single most important barrier to change (Vennström & Eriksson, 2010). To conclude this discussion, it seems that there is an apparent risk that construction industry actors may be trapped in suboptimal stable equilibrium by focusing too heavily on exploitation and too little on exploration.

Proposition 2: Construction project actors rely much more on exploitative behaviors than on explorative behaviors.

HOW TO ACHIEVE AMBIDEXTERITY IN CONSTRUCTION PROJECTS

A viable option for subsystems with scarce resources is contextual ambidexterity (Beckman, 2006), which is less expensive than structural ambidexterity because the costs of coordinating, controlling, and supervising employees are much reduced (Gibson & Birkinshaw, 2004). Contextual ambidexterity is achieved by building a set of processes or systems that enable, encourage and reward individuals or sub-systems to make their own judgments about how to divide their time between conflicting demands for exploration and exploitation (Gibson & Birkinshaw, 2004). The balance between exploration and exploitation is thereby affected by the ways in which targets are set and changed, by recruitment and selection, by incentive systems, by organizational culture, and by risk preferences (March, 1991; Gibson & Birkinshaw, 2004; O´Reilly & Tushman, 2004). Since structural and sequential solutions alone may not be suitable in the construction industry, it seems pertinent to investigate how procurement procedures and governance forms can affect the achievement of contextual ambidexterity in construction projects.

Joint specification

Previous research has found that diverse and complementary assets and knowledge, along with integration and knowledge transfer are important mechanisms for enhancing ambidexterity (Beckman, 2006; O´Reilly & Tushman, 2008; Andriopoulos & Lewis, 2010). A related finding was made by Mom et al. (2007), who found that horizontal and bottom-up communication and knowledge inflow enhance a manager's exploration activities. Furthermore, high levels of uncertainty trigger substantial task interdependence among the involved project members, making participative coordination structures such as cross-functional teams necessary (de Visser et al., 2010). In line with these arguments the involvement of suppliers in design activities has successfully enhanced ambidexterity in the Toyota Production System (Adler et al., 1999).

Construction projects are mostly characterized by high uncertainty (Palaneeswaran et al., 2003; Eriksson, 2010b), due to lack of information concerning ground conditions, weather forecasts, and client requirements. This results in difficulties to forecast all future contingencies and outcomes, making integration among project actors an important means to enhance flexibility and coordination. As such, the integration of design and construction actors may be a viable alternative to the aforementioned combination of structural and sequential arrangements that

results in a divorce between design and construction. Early involvement of contractors and integrated design and construction (i.e. concurrent engineering) has shown to facilitate cost saving and shortened project duration (i.e. exploitation) due to increased buildability (Rahman & Kumaraswamy, 2004; Song et al., 2009) but also innovation (Ling, 2003) due to joint problem-solving and knowledge transfer among design and construction actors. Hence, such joint specification may be a suitable strategy to enhance contextual ambidexterity.

Partner selection based on multiple criteria

In order to enhance a balance between utilization of earlier experience and knowledge of related technologies and generation of fresh ideas and inputs, new product development teams should be constituted by both new and old members (Brown & Eisenhardt, 1997). Furthermore, ambidexterity research has found that during selection and hiring of staff it is important to assess both passion related attributes (exploration) and discipline related attributes (exploitation) in order to find people with ambidextrous identity (Andriopoulos & Lewis, 2010). Koza and Lewin (1998) argue that process (behavior) control is best suited for explorative alliances. Process control, referring to the focal firm's monitoring of the partners' behaviour or the input used to achieve the desired ends (Aulakh et al., 1996), can be accomplished during partner selection when inputs in terms of resources and capabilities are assessed.

When selecting partners for construction projects, process control entails bid evaluation based on multiple criteria (Eriksson & Laan, 2007). In order to enhance ambidexterity, it seems plausible to achieve a balance between direct negotiations with a long-term partner (enhancing exploitation) and more open bid invitations (enhancing exploration) by inviting a few new and old contractors/suppliers to bid and select the most suitable partner based on multiple criteria.

Incentive-based payment

Payment systems that reimburse the supplier for the time worked and the costs of input material (reimbursement payment) entails process control (Gencturk & Aulakh, 1995), which is most appropriate in explorative alliances (Koza & Lewin, 1998). Other studies have however shown that it is important to implement management systems that encourage and reward individuals and/or sub-systems to find a suitable balance between exploration and exploitation (Gibson & Birkinshaw, 2004). Ambidexterity is therefore enhanced by incentive-based payment (contingency rewards) that motivates actors to avoid sub-optimizations and to focus on the overall performance (O´Reilly & Tushman, 2004; Jansen et al., 2008; O´Reilly & Tushman, 2008).

In the construction industry, fixed price payment is common practice, while cost reimbursement and incentive-based payment are not very common (Eriksson, 2008b). Cost reimbursement means that the contractor gets paid for all costs that arise for which reason explorative and long-term development activities can be performed if the client so whishes. However, reimbursement payment may deter the implementation of new approaches and innovative solutions if these reduce contractors' time input and thereby their remuneration (Barlow, 2000). Reimbursement may therefore be coupled with incentive-based payment (e.g. gain/pain share agreement) in order to jointly reward cooperating actors for profits or other benefits resulting from innovative design solutions and effective adaptations (Barlow, 2000; Bajari & Tadelis, 2001). Eriksson and

Westerberg (2011) argue that incentive-based payment can enhance both short-term cost efficiency and long-term innovation, and thereby ambidexterity.

Collaborative tools

Although prior ambidexterity research has focused on formal hierarchical structures, also informal socialization issues and collaborative tools are important from an ambidexterity perspective (Jansen et al., 2006). Socialization, recognition and teambuilding activities improve the actors' connectedness (Jansen et al., 2006) and their generation of mutual tacit knowledge (Kristal et al., 2010). It helps individuals to think and act ambidextrously (Ghoshal & Bartlett, 1997) for which reason connectedness improves both exploratory and exploitative innovation (Jansen et al., 2006). Prior ambidexterity research has studied several collaborative tools. The use of joint IT systems facilitates ambidexterity (Gibson & Birkinshaw, 2004) since they can be used for exploitation purposes (e.g. automated billing and inventory management), explicitly focusing on enhancing efficiency, and for exploration purposes by enhancing collaboration in terms of gathering and exchanging information and new ideas across business units (Kristal et al., 2010). Furthermore, an overarching shared vision is an important integrating mechanism that facilitates ambidexterity by creating a common identity and motivating separate actors and groups to collaborate for the long-term prosperity of the overall system rather than to suboptimize small parts (Gibson & Birkinshaw, 2004; O´Reilly & Tushman, 2004; Jansen et al., 2008; O´Reilly & Tushman, 2008; Andriopoulos & Lewis, 2010). In order to enhance ambidexterity it is important that visions have a future oriented long-term oriented component (exploration), as well as an aspiration of the exploitation of current technologies and capabilities (Sidhu et al., 2004; O´Reilly & Tushman, 2008). A shared physical work space (i.e. joint office) enhance contextual ambidexterity by nurturing both cross-disciplinary work (diversity) and mutual understanding (cohesiveness) (Andriopoulos & Lewis, 2010).

Examples of collaborative tools utilized in construction projects are: developing joint objectives is vital in order to obtain a win-win situation (Crespin-Mazet & Ghauri, 2007; Swan & Khalfan, 2007), performing teambuilding activities is useful in terms of the socialization of partners (Bayliss et al., 2004; Crespin-Mazet & Ghauri, 2007), joint IT-tools enhance exploratory innovation (Gann & Salter, 2000) by facilitating communication and information sharing (Eriksson, 2008a; Woksepp & Olofsson, 2008), joint risk management is a useful way to deal with risks that are unforeseen or unquantifiable during the planning stage (Rahman & Kumaraswamy, 2004), and a joint project office on site in which all partners are located enhance communication through face-to-face encounters (Olsen et al., 2005). Although the use of these collaborative tools is low in traditional construction projects (Eriksson, 2008b), they should be an essential part of collaborative governance forms in which ambidextrous behaviors are demanded.

Proposition 3: Cooperative procurement procedures, including joint specification, partner selection based on multiple criteria, incentive-based payment, and collaborative tools, enhance ambidextrous project performance.

CONCLUDING DISCUSSION

In this paper organizational ambidexterity in the construction industry has been elaborated and discussed in terms of the exploration/exploitation paradox. Due to the project-based nature of the construction industry structural ambidexterity on firm and business unit level may not achieve desired ends. Hence, contextual ambidexterity at the project-level may be required in order to reap the benefits of an appropriate balance between exploration and exploitation. Earlier innovation studies within the field of construction management have highlighted the importance of inter-organizational cooperation in order to enhance innovation (Barlow, 2000; Dubois & Gadde, 2002; Widén & Hansson, 2007; Harty, 2008). Few earlier studies have discussed in more detail specific mechanisms that may enhance innovation. In this paper a procurement perspective has been adopted in order to discuss how cooperative procurement procedures may serve as mechanisms to achieve contextual ambidexterity in construction projects. This paper merely serves as a starting point for discussing organizational ambidexterity in the construction industry. Empirical investigations should be encouraged both in order to study if, when and why organizational ambidexterity is suitable in the construction industry and if so, how it may be achieved in real project settings.

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