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Organizational Learning Implications of Partnering Flexibility in Project-Venture Settings: A Multilevel Framework

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ABSTRACT

Project ventures are an increasingly prevalent organizational form in many industries. The management literature has stressed their flexibility and adaptability advantages. This paper focuses on the learning implications of the source of flexibility most essential to project ventures: The ability to switch partners during project formation and execution. This partnering flexibility creates opportunities to respond to new knowledge about characteristics of project tasks and project partners. Partnering flexibility, however, also creates learning challenges. The short-term nature of relationships between project partners and the disintegration of the project team after project completion challenges the accumulation and transfer of knowledge to future projects. Beyond the introduction of related learning opportunities and challenges, we identify potential contingency factors in the project context that shape when partner flexibility will have beneficial versus harmful effects. On the organizational level, we propose that project-governing permanent organizations can support project-venture learning. On the industry level, we highlight potential learning benefits of standardized partner roles and coordination practices. Thus, our paper introduces a multi-level contingency framework for the evaluation of both learning opportunities and challenges of partnering flexibility in project-venture settings. We formulate testable propositions focused on partner-project fit and project performance.

Keywords: **Project Ventures, Organizational Flexibility, Organizational Learning, Partner Selection, Partner Fit, Project Performance**

Over the last decade, management practice and research have paid increasing attention to flexible organizational forms -- including project ventures (Bakker, 2010; Sydow, Lindkvist & DeFillippi, 2004). Project ventures combine individual participants for the completion of a specific short-term task (Schwab & Miner, 2008). Thus, each project involves the identification of a venture opportunity and the creation of a collaborative venture to exploit it. In this paper, we introduce a multilevel framework that outlines when and how partnering flexibility can create both learning opportunities and learning challenges in project-venture settings. Prior learning research has highlighted potential adaptive advantages of project ventures (DeFillippi, 2001; Lampel, Lant & Shamsie, 2000) compared to long-term collaborations or permanent organizations. Some researchers have gone so far as to label project ventures 'wellsprings of learning and innovation' (Davies & Hobday, 2005).

The core source of potential adaptive advantages of project ventures is the organizational flexibility created by the temporary nature of the relationships between project partners. By definition, the dissolution of these relationships after task completion requires the formation of new project ventures to address any future tasks. Any venture formation represents an opportunity to select partners with the best project fit. For example, product development projects can select manufacturing, marketing, and scientific experts with specialized knowledge relevant for the specific project task (Brown & Eisenhardt, 1995; Miner, Bassoff & Moorman, 2001). In some collaborative organizational research consortia, participating firms can designate team members from their own organizations who join focused projects (Doz, Olk & Smith Ring, 2000). Under certain conditions, the more flexible relationships between project partners can also facilitate switching partners during project execution. The opportunities to switch partners both between projects and during project execution promise higher levels of partner fit and potentially higher project performance for focal outputs (Perretti & Negro, 2007b; Storper, 1989).

Prior research, however, has also noted that common features of temporary organizations, such as deadline pressures, unclear missions or weaker personal ties can interfere with creating, applying, and accumulating knowledge (Lampel, Scarbrough & Macmillan, 2008; Lundin & Söderholm, 1995). In the case of project ventures, the disintegration of the learning entity after task completion creates challenges

to knowledge retention and knowledge transfer to new projects. Consistent with these arguments, recent empirical research has found evidence that learning within and across projects only occurred under specific supportive context conditions (Grabher, 2004; Schwab, 2009; Schwab & Miner, 2008). Our framework outlines for both organization-level and industry-level contingency factors that can moderate learning effects on project-partner fit and project performance. Beyond these project-level learning outcomes, we speculate about their implications for long-term industry-level adaptability in our discussion section.

Our paper addresses calls in the literature to recognize the importance role of embeddedness in organizational and industry contexts for our understanding of learning in project ventures settings (Engwall, 2003). As numerous industries gravitate toward more flexible organizational forms, such as project ventures (Hobday, 2000; Rubery, Earnshaw, Marchington, Cooke & Vincent, 2002; Schilling & Steensma, 2001; Sydow et al., 2004), our investigation of learning implications of project ventures offers important guidance for both researchers and practitioners. In the following sections, we first outline key theoretical constructs and then offer our specific propositions for project-venture learning. We conclude by discussing the broader implications of our multilevel framework and promising framework extensions.

THEORY

Project Ventures

Project ventures are defined as temporary organizational entities that combine several individuals to complete a specific task within a pre-established short-term time frame (Schwab & Miner, 2008). Individual members of a project venture may be called participants, contributors, or partners. Project ventures tend to involve the following three activities: (1) the identification or creation of a venture opportunity (Lumpkin & Bergman Lichtenstein, 2005; Shane, 2000), (2) the creation of temporary organizational structures to exploit this venture opportunity (Lichtenstein, Dooley & Lumpkin, 2006; Lundin & Söderholm, 1995), and (3) the ongoing adjustment to emergent demands during project execution (Hobday, 2000; Jones & Lichtenstein, 2008; Whitley, 2006). These activities represent entrepreneurial behavior focused on opportunity seeking and venture creation (Ferriani, Cattani & Baden-

Fuller, 2009; Mezias & Kuperman, 2001; Ruef, Aldrich & Carter, 2003).

Project ventures can take the form of a stand-alone entity, such as an independent software development team (Adler, 2006; Ibert, 2004), an independent movie project (Baker & Faulkner, 1991; DeFillippi & Arthur, 1998), a one-time construction projects (Eccles, 1981; Jones, Hesterly, Fladmoe-Linquist & Borgatti, 1998), a political campaign (Kayden, 1973, 1978), a sport event (McDonald, 1991; Pitsis, Clegg, Marosszeky & Rura-Polley, 2003), or a short-term nonprofit venture (Anderson, Compton & Mason, 2004; Weick, 1993). Stand-alone projects are designed to dissolve upon completion of a focal task. Alternatively, a project ventures can be embedded in a larger organization, such as an internal R&D project (Brown & Eisenhardt, 1995; Miner et al., 2001) or an internal task force (Hansen, 1999). More complex forms of embeddedness occur when project ventures combine individuals from different organizations (Whitley, 2006) – examples include R&D joint ventures or consortia (Doz et al., 2000) or some forms of open-source technology development (O'Mahony & Bechky, 2008). Some large-scale projects, such as aircraft development, can require work being carried out by multiple linked interfirm projects, which may or may not overlap in time (Grabher, 2004; Newell, Goussevskaia, Swan, Bresnen & Obembe, 2008).

Project-Venture Learning

Learning is defined as systematic change in knowledge or behavior based on prior experience (Argote, 1999). Project ventures can change their behavior and knowledge based on experience via several distinct learning processes. A project team can learn from its own direct experiences in order to create, store, and apply knowledge (Enberg, Lindkvist & Tell, 2006; Schwab & Miner, 2008). For example, if a venture fails at a given task, it can devise new coordination methods or develop new shared understandings, a form of trial-and-error learning during the execution of a specific project. However, due to the temporary nature of each project team, inter-project knowledge transfer depends on learning activities at lower or higher levels of analysis (Schwab, 2009). Specifically, knowledge arising from venture experience can reside in participating individuals or organizations that have sponsored the project (Engwall, 2003; Lampel et al., 2008; Schwab & Miner, 2008). Obviously, project participants can retain

knowledge gained during a project and try to apply it during future projects (Arthur, DeFillippi & Jones, 2001). In addition, project-sponsoring organizations can store knowledge discovered during a specific project and apply it to their other projects -- including future projects (Ibert, 2004; Schwab & Miner, 2008). This embedded nature of project learning activities strongly suggests the need for multilevel perspectives. Our investigation adopts a multilevel perspective focused on organization and industry-level factors.

Organizational Flexibility

Project ventures have been generally associated with high levels of organizational flexibility (DeFillippi, 2001; Lundin & Söderholm, 1995; Storper, 1989). Organizational flexibility refers to an organizational entity's ability to change its behavior (Volberda, 1996; Young-Ybarra & Wiersema, 1999). Flexibility is a multi-dimensional construct that combines: (1) operational flexibility, which entails changes within established organizational structures, processes, goals, and long-term plans, (2) structural flexibility, which entails changes of organizational structures and processes, and (3) strategic flexibility, which entails changes of organizational goals and long-term plans (Volberda, 1998). Project ventures can help create high levels of operational, structural and strategic flexibility. The formation of each new project venture creates an opportunity to revise organizational goals (strategic flexibility), to select different partners and structures (structural flexibility), and to shape the emergent project activities (operational flexibility). Our work focuses on one key type of structural flexibility: Partnering flexibility. We define partnering flexibility as the ease with which a project venture can change partners during the formation and execution of a discrete project task. We will refer to the individuals who create and manage the project venture as entrepreneurs. These entrepreneurs can operate within a single organization or group of organizations, as champions or organizers of intra-organizational or inter-organizational projects. Alternatively, these entrepreneurs can create and execute stand-alone ventures, such as independent movie projects (Ferriani et al., 2009) or independent software-development projects (O'Mahony & Bechky, 2008). Our study investigates the implications of partnering flexibility for organizational learning in project venture settings. In the following section, we develop propositions of

specific learning opportunities and learning challenges associated with higher or lower levels of partnering flexibility in project venture settings.

PROPOSITIONS

Partnering Flexibility

The adaptive flexibility potentials of project ventures are directly related to the finite and short-term nature of the collaboration relationships between project participants. The project venture, as an organizational entity, disintegrates after task completion, which implies the frequent termination of collaboration relationships between the project participants. The less stable collaboration relationships facilitate the switching of partners. Specifically, we differentiate between two distinct opportunities for switching partners: (1) during project venture formation and (2) during project venture execution.

Project-venture formation. The formation of any organizational entity involves the selection of venture members. The difference in project-venture settings is that the formation of organizational entities occurs frequently because after task completion, by definition, project ventures disintegrate and the project-based collaboration relationships between the project participants terminate. Thus, if a new task is addressed by a project venture, this implies, by definition, the formation of a project team and thereby represents an opportunity to select different partners. The resulting project team could involve all new members, a re-assembly of prior project team members or some combination. However, not all new tasks are addressed by project ventures. Some may be addressed through more stable organizational entities, such as permanent work teams or departments. In contrast to project ventures, these permanent entities imply automatic continuation of the collaboration between their individual members as the entity addresses future tasks.

Qualitative historical information in the movie industry provides illustrations for the general feasibility of partner changes during project venture formation. For example, an unsuccessful project venture, such as the collaboration of Fred Astaire (lead actor) with Joan Fontaine (lead actress) in 'A Damsel in Distress' (RKO Pictures, 1937), can lead to cast changes for future projects. In this case, Astaire was reunited with a different lead actress, Ginger Rogers, because of their successful prior movie

projects for RKO Pictures (Davis, 1993: 186).

In any event, another project venture with the same partners or some of the same partners remains an alternative. Such repeated collaborations might reduce some of the venture formation-related costs, such as partner search and partner integration costs. At the same time, efforts are still needed to extend, renew, and modify any underlying collaboration agreements between the partners in order to perform the new task together. In project-venture settings, repeated collaboration with the same partners may even require extra efforts and supportive conditions, such as control over project participants to influence their future project choices. Thus, continued collaboration is not automatic and cannot be assumed for future projects. This represents a sharp contrast from open-ended collaboration relationships, where typically extra efforts are needed to terminate relationships between partners.

Project-venture execution. The second way that project ventures can switch partners is during venture execution. Switches during task execution, however, have the potential to disrupt and slow down task completion. If a partner is not contributing as expected, replacing this partner nonetheless represents a potential solution -- sometimes, the only solution. Anecdotal evidence illustrates the general feasibility of partner replacement. For example, in the production of the Oscar-winning movie "There Will Be Blood" (Paramount/Miramax, 2007), the director Paul Thomas Anderson replaced the supporting actor playing Eli Sunday with Paul Dano two weeks into the 60-day shoot (Hirschberg, 2007; Lewis, 2007). Such replacement decisions, however, create trade-offs between related benefits and costs. In project settings replacement related cost can be lower compared to more permanent organizational settings, for several reasons. For example, if the integration of new partners occurs frequently this increases the likelihood that partners over time develop capabilities to perform such integration more effectively and efficiently; that they develop and fine tune related practices and routines. Another potential reason is the emergence of industry-level conditions that facilitate partner search and partner integration processes. For example, the industry-wide standardization of specific project tasks can substantially facilitate replacing a partner with a new partner who has experience in performing exactly the same set of tasks (Bechky, 2006; Schilling & Steensma, 2001; Whitley, 2006). The more easily a replacement partner can be found and the

more easily this new partner can be integrated into the project venture, the more feasible replacing partners during project execution becomes.

Multi-Project vs. Single-Project

The degree of partnering flexibility offered by project ventures, however, can differ in important ways across different types of project ventures. If project partners enter into *multi-project* collaboration agreements with the same partners or group of partners, a project venture's partnering flexibility is reduced because such contractual agreements tend to create constraints for switching partners. A general contractor, for example, may agree to collaborate with a plumber in several residential housing projects. We refer to collaborations based on multi-project agreements as multi-project ventures. Alternatively, the general contractor could agree to collaborate with the plumber for only the first housing project. We refer to collaborations based on single-project agreements as single-project ventures (see also, Reichstein, Salter & Gann, 2008). Everything else being equal, multi-project agreements have the potential to reduce both partner-selection and partner-replacement flexibility, which implies higher levels of partnering flexibility for single-project ventures.

It is important to clarify how the construct of partnering flexibility relates to the construct of repeated collaborations, which has been the focus in recent studies that investigated its effects on project performance (Perretti & Negro, 2007a; Soda, Usai & Zaheer, 2004), innovation (Perretti & Negro, 2007b; Skilton & Dooley, 2010; Taylor & Greve, 2006), and the accumulation of knowledge across projects (Grabher, 2004; Jones et al., 1998; Schwab & Miner, 2008). The key difference is that repeated collaboration is not necessarily the result of a multi-project agreement. Instead, it can also be the result of a sequence of single-project agreements with the same partners. Multi-project agreements reduce partnering flexibility, but a sequence of single project ventures does not. Thus, repeated collaboration does not accurately capture lower levels of partnering flexibility.

Collaboration based on only a single-project agreement has important implications for the flexibility related expectations of project participants, which we propose has important effects on learning behavior during project formation and execution. These learning effects of partnering flexibility are the

focus of our investigation. We first compare generic advantages and disadvantages of single project versus multi project ventures, and then consider the impact of higher level contingency factors.

Learning Opportunities of Partnering Flexibility

Every project venture represents an opportunity for an entrepreneur to assemble a good combination of project partners to accomplish the task. This allows entrepreneurs to respond to changes in project characteristics, contributor capabilities, and other relevant factors by selecting different partners for new projects (Schwab & Miner, 2008; Sydow et al., 2004). In addition, ongoing shifts in these features can prompt partner replacement during project execution. Researchers have argued for corresponding adaptability advantages (Davies & Hobday, 2005; Perretti & Negro, 2007b). Real option research has tried to estimate the relative economic value of the organizational flexibility that single-project ventures offer compared to multi-project ventures in highly dynamic environments (Adner & Levinthal, 2004). Based on arguments that project-venture performance depends on the fit between project characteristics and the capabilities of project participants (Whitley, 2006), we consider two important dimensions of industry dynamics that disrupt any discovered fit: (1) changes in project characteristics and (2) changes in participants' capabilities.

Change in project characteristics. Dynamic change in project characteristics over time can result from a variety of change processes, including shifts in consumer preferences, technological innovations or different environmental conditions (Nelson & Winter, 1982; Rogers, 1995). Information about such changes tends to be incomplete and not uniformly distributed across project founders (Alvarez & Busenitz, 2001). Consequently, the discovery of such changes and their implications further contributes to these dynamics. In some instances, dynamics may be solely the result of shifts in recognition, for example, when the opportunities related to a long existing scientific discovery are finally recognized by some entrepreneurs (Shane, 2000). Beyond exogenous environmental changes and their recognition, innovative behavior by entrepreneurs can change project characteristics, when entrepreneurs, for example, actively create and shape new products, markets, and other resources (Alvarez & Barney, 2007; Baker & Nelson, 2005).

Partnering flexibility provides project ventures with degrees of freedom to respond to changes in project characteristics by selecting the partners that promise the best project fit. Should a change in project tasks lead an entrepreneur to discover that a different partner is now better qualified to perform this task, multi-project agreements constrain the entrepreneur's opportunities act upon this knowledge by actually switching partners. For example, multi-project agreements tend to contain breach-of-contract penalties. In contrast, entrepreneurs engaged in single-project collaborations are better positioned to respond to changes in project characteristics by switching partners. Thus, we propose that higher levels of partnering flexibility of single-project ventures offers related adaptability advantages with potential positive effects on partner fit and overall project performance.

Proposition 1a: In dynamic settings with high levels of change in project characteristics, single-project ventures will have better partner-project fit compared to multi-project ventures.

Proposition 1b: In dynamic settings with high levels of change in project characteristics, single-project ventures will experience performance advantages compared to multi-project ventures.

Change in participant capabilities. Beyond changes in project characteristics, dynamic changes of participants' capabilities over time can represent an equally important type of change that partnering flexibility can address (Jones, 1996). Again, we have to consider both learning of capabilities by participants and learning about the capabilities of potential participants.

Learning by project participants. Individuals constantly learn and forget (Argote, 1999). An architect, for example, may learn during a project how to exploit a specific building code or how to apply novel building materials. Partnering flexibility can enable future projects to exploit these new skills by selecting this architect. Similarly, projects can respond if a participant unlearns or otherwise loses a capability. For example, a single-project venture in the movie industry can better adjust to poor public-relations management by an actor that ruins her ability to draw audiences -- either by replacing the actor during execution or after project completion. A multi-project venture, such as a TV series, that has hired an actress for a series of projects will have higher switching cost, for example, in the form of compensation for early contract termination.

Learning about project participants. In order for a partner's capabilities to affect partner selection

or retention, they have to be recognized by the entrepreneurs engaged in project-venture formation and execution. Consequently, any learning by entrepreneurs about capabilities and motivations of potential partners is highly relevant. For example, an architect can learn about the reliability of a specific contractor via personal social networks or by interaction with the contractor during a given project. The relevant learning in this case is the discovery of an existing stable behavioral tendency – more precisely, the perception of or belief in such a tendency. The discovery of a partner's inability or lack of motivation to perform certain tasks during a current project can lead to a replacement decision and the avoidance of future collaborations with the same partner. Such discoveries over time are feasible, if not likely, when the initial knowledge about participants' capabilities and motivations is incomplete. Beyond observation during their own projects, entrepreneurs can also observe the projects of others to evaluate participants' capabilities (Schwab & Miner, 2008).

In dynamic settings with high levels of change in the characteristics of potential partners, partnering flexibility promises opportunities to respond to new information about participants' capabilities. This new information, if accurate and reliable, can help in the selection of partners with better project fit and potential positive project performance effects. Both entrepreneurs engaged in single-project or multi-project ventures can gain such knowledge about partner capabilities. The partnering flexibility advantages of single-project ventures, however, will help entrepreneurs to respond more quickly to this new information by switching partners. In contrast, entrepreneurs with multi-project contracts will face either higher switching cost or will have to wait till the last joint project is completed before their collaboration terminates and they can switch partners. Higher levels of dynamic changes in participants' capabilities imply that any knowledge about these capabilities quickly becomes outdated. This challenges any potential advantages for multi-project ventures to accumulate knowledge through their opportunity for repeated observations of participants over a sequence of projects with the same partners. Thus, we expect lower levels of partner-project fit and project performance for multi-project ventures in settings with dynamic change in participants' capabilities. This reasoning leads to the following two propositions:

Proposition 2a: In dynamic settings with high levels of change in participants' capabilities, single-project ventures will have better partner-project fit compared to multi-project ventures.

Proposition 2b: In dynamic settings with high levels of change in participants' capabilities, single-project ventures will experience performance advantages compared to multi-project ventures.

Learning Obstacles of Partnering Flexibility

Proposition 1 and 2 highlight the relative advantages of single-project ventures. The management literature has long acknowledged, however, that organizational flexibility offers not only adaptability opportunities, but can also present serious challenges (Ashby, 1956; Burns & Stalker, 1961). In the project-venture context, studies applying institutional theory and transaction cost economics, for example, have highlighted negative effects related to adverse selection, moral hazard, and opportunistic behavior (Greif, 1993; Jones, Hesterly & Borgatti, 1997; Jones et al., 1998). In the learning literature, challenges related to accumulation of knowledge across projects have received conceptual and empirical attention (Schwab & Miner, 2008; Skilton & Dooley, 2010). Researchers have argued that 'pragmatic boundaries,' such as established practices, investments in knowledge, and power issues can prevent the transfer of valuable knowledge to future projects (Carlile, 2002; Pisano, 2006). Even if knowledge is transferred to future projects, its value often depends on this knowledge fitting the future project's specific context (Cacciatori, 2008; Schwab & Miner, 2008). Relevant context differences include differences in the set of partners (Carlile, 2002; Okhuysen & Eisenhardt, 2002). Our focus on partnering flexibility allows us to hone-in on learning challenges directly related to the ability to switch project partners and explicate specific causal processes that create learning challenges. Thus, we extend prior research that investigated knowledge accumulation challenges without differentiating between underlying causes or focused on other causes.

Partner-specific knowledge. Working with new partners means that any partner-specific knowledge about old partners loses its value (Grabher, 2004; Schwab & Miner, 2008). We define knowledge as partner-specific when its exploitation requires collaboration with the same partner or partners. During long-term interfirm collaborations, participants have the opportunity to develop partner-specific knowledge, for example, in the form of shared routines and coordination practices (Doz, 1996;

Kogut, 1988; Madhock & Tallman, 1998; Ring & Van de Ven, 1994). Anecdotal information illustrates the general relevance of such partner-specific knowledge also in project settings. In the movie industry, for example, a successful director remarked:

> "I had the same gaffer [lighting expert] for eighteen years, and in the end we'd just have to look at each other and we knew what we were going to do. There was no need for words; we were like a lot of dummies all through shooting." (Miller interview by Higham in: Davis, 1993: 239).

Conceptually, partner-specific knowledge has been linked to the construct of transactive memory (Argote, 1999; Wegner, 1986). This construct offers an important framework to develop propositions about related project-learning and project-performance effects (Schwab & Miner, 2008).

Transactive memory. The group-level behavioral literature has long studied effects of team formation on group performance including comparisons of groups combining strangers to groups combining individuals, who have worked together before (Chen, 2005; Reagans, Zuckerman & McEvily, 2004). In a laboratory study of group learning, Moreland, Argote and Krishnan (1996) showed how teams that had been trained together, outperformed both teams whose members had been trained individually and teams whose members had learned the task with a set of different team members. The authors argued that training together allowed the development of transactive memory systems, which identify the knowledge and capabilities of specific team members. Transactive memory helps teams to assign sub-tasks to the appropriate member and to coordinate the performance of interdependent sub-tasks (Liang, Moreland & Argote, 1995).

Subsequent empirical field research has generally supported the relevance of transactive memory and its positive performance effect for groups in organizational settings (Austin, 2003; Faraj & Sproull, 2000; Lewis, 2004). Because transactive memory systems represent partner-specific knowledge, its exploitation hinges on continued collaboration with the same partners. Thus, we consider industry case studies that reported the development of partner-specific governance mechanisms in more stable multi-project constellations as consistent with our transactive memory arguments (Jones et al., 1998). For project-venture settings, Schwab and Miner (2008) reported that future collaboration with the same partners was more likely if the task of the future project was similar to the task of the prior project. This

finding indicates that transactive memory is not only partner-specific, but can also be project task-specific.

Taken together, our conceptual arguments and the emerging empirical evidence suggest lower levels of transactive memory in single-project ventures compared to multi-project ventures. A single-project venture offers less time to develop this type of partner-specific knowledge compared to continuous collaboration across a sequence of projects. In addition, the uncertainty about future collaborations with the same partners limits the perceived value of any partner-specific knowledge gained – which suggests a lower motivation to invest time and efforts to develop and retain transactive memory for partners in single-project collaborations. These arguments lead to the following two propositions:

Proposition 3a: Single-project ventures will have less transactive memory compared to multi-project ventures.

Proposition 3b: Single-project ventures will experience transactive memory related performance disadvantages compared to multi-project ventures.

Higher-Level Context Contingency Factors

The general relevance of context factors, in the form of industry conditions, for venture creation and success has received substantial support in the entrepreneurship literature (Eckhardt & Ciuchta, 2008; Engwall, 2003; Mezias & Kuperman, 2001). The 'situated perspective' on organizational learning has long argued that learning processes in general are profoundly contingent on the context in which they occur (Lave & Wegner, 1991; Teece, Pisano & Shuen, 1997). For two reasons, we believe that context factors are especially relevant for whether and how project-level learning processes occur. First, permanent organizations, over time, tend to develop boundaries that reduce their interactions with outside entities and insulate them from external context factors. New and emerging organizational entities, such as project ventures, have weaker organizational boundaries (Engwall, 2003; Lundin & Söderholm, 1995). For example, the organizational members still tend to have strong relationships to individuals from their prior employment. Consequently, we consider it likely that factors in the project environment will affect project-venture behavior -- including project-level learning. Secondly, the disintegration of venture teams creates inherent challenges for the transfer of knowledge to future projects. As noted above, the absence

of a persistent project-level organizational memory means that any knowledge transfer has to involve entities on lower (individual participants) or higher (e.g., project-governing permanent organizations) level of analysis. For these reasons, we consider the following contingency factors of the project-venture environment highly relevant for our understanding of how partnering flexibility affects project-venture learning: (1) project-governing permanent organizations and (2) industry norms for partner roles and coordination practices.

Project-governing organizations. Project ventures are temporary organizational entities, but it is important to recognize that permanent organizations often play a key role in both project formation and execution (Hobday, 2000; Prencipe & Tell, 2001). For example, software-development projects combine individual programmers, but are often governed by one or several software companies (Grabher, 2004). Construction projects are often headed by a lead construction company or architecture firm (Bryman, Bresnen, Beardsworth, Ford & Keil, 1987; Eccles, 1981; Jones et al., 1998). Thus, anecdotal evidence illustrates the potential relevance of project-governing organizations in a variety of project-venture settings.

The disintegration of the primary learning entity, the project venture, after task completion presents obvious challenges for the transfer of knowledge to future projects. Project-governing organizations are in a unique position to support such knowledge transfers. Grabher (2004), for example, described how project-governing organizations retain knowledge and transfer it to other projects in his qualitative industry case study comparing advertisement and software development.

Conceptually, this implies that both 'project-to-organization' and 'organization-to-project' learning can occur (Brady & Davies, 2004; Ibert, 2004). The former represents bottom-up learning where project knowledge is transferred to the organization. Organization-to-project learning represents the application of organizational knowledge to a given project. This can be factual knowledge, such as the capabilities of individual project contributors or procedural knowledge, such as practices how to coordinate task execution. This procedural knowledge can include practices that support knowledge transfers, such as post-mortem project meetings to identify and document best practices and lessons learned during a

specific project.

Some permanent organizations engaged in project-based professional service work, such as management consulting, legal counseling, or investment banking, have developed elaborate ways to systematically capture knowledge of past projects and make it available to future projects (Adler, 2006; Carlile, 2002; Davenport & Prusak, 1998; Hansen & Haas, 2001). Newell et al. (2006), for example, studied numerous projects at thirteen different firms and reported how firms stimulated cross-project knowledge transfer using post-project reviews, internal social networks and knowledge management systems.

Such organizational practices, however, themselves face challenges when confronted with tacit knowledge. The difficulty of articulating tacit knowledge constrains attempts to identify, capture, and transfer this knowledge. Project-governing permanent organizations are in a unique position to discover project participants or sets of participants who possess valuable tacit knowledge. By assigning the same participants with identified tacit knowledge to future projects, a permanent organization can in effect retain and transfer discovered tacit knowledge. Thus, a permanent organization's power and control over projects and their participants may be a crucial contingency for initiating systematic knowledge transfers across projects (Contu & Willmott, 2003; Schwab & Miner, 2008). Schwab and Miner (2008) showed how Hollywood studios during the 1930s used prior project performance to inform their decisions to select the same project participants for a future project. They argued that these studios combined the knowledge about valuable combinations of project participants with control over project participants. This combination of knowledge and power enabled performance-outcome learning. In studios that did not control participants' future project assignments, such learning did not occur. Such control may also be constrained in project ventures that combine participants from different permanent organizations.

In summary, project management systems of permanent project-governing organizations can support the development and diffusion of valuable project practices as well as the discovery and codification of knowledge about specific project participants (Argote & Ingram, 2000; Briscoe, 2007). Based on these considerations, we propose that a single-project venture that is governed by a powerful

permanent organization will be less disadvantaged when it comes to the accumulation of knowledge across projects and to the use of such knowledge to inform partner-selection decisions. The value of this impact is higher for a single-project venture than for multi-project ventures because in a sequence ofjoint projects knowledge can be transferred though other processes, such as shared venture team memory.

Proposition 4: A powerful permanent project-governing organization will reduce the knowledge accumulation disadvantages of single-project ventures compared to multi-project ventures.

Industry norms. In some industries, formal and informal norms have created 'communities of practices', which can affect individual behavior through the construction and deployment of roles and identities (Bechky, 2006; Lave & Wegner, 1991: 53; Lindkvist, 2005). This can represent a form of industry-level collective learning (Miner & Anderson, 1999). In the movie industry, for example, the roles and responsibilities of different types of project participants (e.g., director, actors, and camera person) are clearly defined (Bechky, 2006; Jones, 1996). In addition, standardized practices, such as the use of movie scripts and story boards, help coordinate task execution by project participants. Some of the related norms are codified in union and guild contracts, which specify specific job duties (Ross, 1941). Substantial portion of the norms are informal (Bechky, 2006; Schwab, 2009). Formal and informal norms are reinforced and diffused by on-the-job training, institutionalized education, social media, and many other forms of communication among community members.

Industry norms for partner roles. Widely accepted role definitions on the industry level can support partnering flexibility in two ways. First, they can substantially increase the efficiency of partner searches by structuring an otherwise more amorphous job market. When a director searches for a 'sound boom operator', this search can focus on a corresponding clearly defined sub-segment of the overall labor market in the movie industry. Second, these roles assign specific sub-tasks to specific project partners, which can facilitate the integration or replacement of partners during project execution (Bechky, 2006).. As discussed earlier, sub-task assignments to specific partners represent one key contribution of transactive memory to project execution. The development of such transactive memory represents more of a challenge for single-project ventures (see Proposition 3a and 3b). Consequently, we expect that

industry-wide standardized participant roles reduce the need for project ventures to develop corresponding transactive memory. Thus, industry norms for partner roles will be especially beneficial to single-project ventures because these norms compensate for the ventures' lower levels of transactive memory. Indeed, a certain level of role standardization may be a necessary condition for partnering flexibility.

In summary, industry norms defining partner roles promise to facilitate the search for new partners and the integration of these partners during project execution. These conditions are especially valuable for single-project ventures that attempt to exploit their higher levels of partnering flexibility compared to multi-project ventures. Formally, we propose:

Proposition 5: Industry-wide standardized participants' roles will strengthen partnering flexibility related learning advantages of single-project ventures compared to multi-project ventures.

Industry norms for coordination practices. As mentioned earlier, transactive memory systems can also contain valuable information on how partners can coordinate their interdependent tasks. If related knowledge is retained as tacit knowledge, its transfer requires using the same partner or partners in future projects. However, if this knowledge can be codified this creates opportunities to transfer it to future projects with different partners (Prencipe & Tell, 2001; Zollo, Reuer & Singh, 2002). One way of codification is the development of industry norms for project coordination practices.

In recent research of professional service work covering project-based production in medicine, law, and architecture (Abbott, 1988; Briscoe, 2007), the role of common knowledge domains as vehicles to create and diffuse coordination practice across projects has received increasing attention (Briscoe, 2007; Cacciatori, 2008; Enberg et al., 2006; Lampel et al., 2008). We argue that codified coordination practices can be valuable in three ways (see also, Zollo et al., 2002). First, projects can use these norms as templates, which reduces the time and cost involved in developing coordination practices during task execution. Second, if project participants are already familiar with these coordination practices, the participants do not have to learn the practice during project execution. Third, partners can use a current project to further deepen their understanding of a codified coordination practice during project execution.

We argue that the expectation of future projects applying the same coordination practices provides additional motivation for participants to engage in related learning activities.

Anecdotal evidence illustrates the presence of powerful industry coordination norms at least in some project-venture settings. Simple examples include industry-wide standardized employment contracts, for example in the movie industry (Litwak, 1994). These contracts can reduce the cost of working with a new partner and therefore support partnering flexibility. In the construction industry, architectural drawings represent a powerful standardized instrument to coordinate partner activities. These drawings provide comprehensive information to a variety of different project contributors in a generally known format and form. In the entertainment industry, the standardized structure of movie scripts and story boards serves similar purposes to coordinate the activities of project participants.

Similar to our arguments related to industry norms for participant roles, we expect that industry norms for coordination practices are especially valuable for single-project venture because these norms can compensate for their low levels of coordination practices provided by transactive memory (Propositions 3a and 3b). Consequently, industry-wide coordination practices promise to reduce related learning challenges of single-project ventures relative to multi-project ventures.

Proposition 6: Industry-wide standardized partner coordination practices will substitute for transactive memory systems and strengthen partnering flexibility related learning advantages of single-project ventures compared to multi-project ventures.

Joint effects of industry norms for partner roles and coordination practices. Finally, we propose a positive synergistic effect for the industry-wide standardization of both partner roles and partner-coordination practices. Our arguments build on very fundamental theories about effective division of labor (Becker & Murphy, 1992; Smith, 1776). Without standardization of partner roles, partner-coordination practices will require more adjustments during project execution to partner-specific capabilities and responsibilities. At the same time, the standardization of partner-coordination practices can support the development of standardized partner roles. These considerations not only suggest co-evolutionary processes, but also a positive joint effect of standardization of partner roles and partner-coordination practices.

Proposition 7: *Industry-wide standardization of both participants' roles and partner-coordination practices will have a stronger positive joint effect on partnering flexibility related learning advantages for single-project ventures compared to multi-project ventures.*

DISCUSSION

We introduce a framework that explores learning implications of different degrees and types of partnering flexibility in project venture settings. Our learning framework of partnering flexibility makes two main theory contributions.

First, the framework outlines how partnering flexibility creates both learning opportunities and learning challenges. Our more balanced perspective contrasts with prior research that tends to emphasize only learning advantages of short-term collaborations, such as project ventures. Specifically, we review how partnering flexibility provides opportunities to adjust quickly to new knowledge about task characteristics and partner capabilities. We argue that single-project ventures offer maximum adaptive flexibility in terms of constructing new combinations of partners for future project ventures because as a default the project team members disband after their current project. Such higher levels of partnering flexibility, however, can also create learning challenges related to the development of partner-specific knowledge, such as transactive memory. Our framework provides a starting point for the systematic and balanced investigation of these partnering-flexibility implications. For example, the benefits of selecting new partners because of the fit of their unique skills for the current project task have to be weighed against the costs of developing coordination practices with these new partners. Our propositions outline both learning opportunities and challenges of partnering flexibility. Consequently, we argue that partnering flexibility implies intricate trade-offs. These trade-offs can result in positive, neutral, or negative overall learning outcomes.

Our second contribution is the identification of contingency factors on the organization and the industry level of analysis that we consider likely to affect whether and how partnering flexibility creates learning opportunities and challenges. For example, we argue that permanent project-governing organizations can support inter-project knowledge transfers in ways that reduce learning disadvantages of single-project ventures. Similarly, industry-level norms that define either different partner roles or project

coordination practices also promise to compensate for lower levels of transactive memories due to higher levels of partnering-flexibility in single-project ventures. The proposed organizational and industry-level factors suggest the need for a multi-level perspective for the investigation of learning implications of partnering-flexibility in project-venture settings.

The framework introduced in this paper moves beyond earlier research in the project venture literature that has focused on studying specific learning opportunities or challenges in isolation without considering organization-level and industry-level contingency factors. In addition, our multi-level contingency framework of the learning implications of partnering flexibility contradicts some notions of unconditional flexibility advantages of flexible organizational forms, such as single-project ventures that have dominated parts of the management literature (Davies & Hobday, 2005; Ilinitch, D'Aveni & Lewin, 1996; Piore & Sabel, 1984). Instead, this paper integrates the findings of emerging studies that have called attention to potential learning challenges for flexibility-driven settings and their context dependence (Grabher, 2004; Jones & Lichtenstein, 2008; Schwab & Miner, 2008). The next step is future empirical research to test the causal relationships proposed by our theory-based framework.

Framework Extensions

Beyond pointing to important empirical studies to test proposed causal effects, the framework introduced here also provides a basis for further useful model extensions. Below we introduce three extensions that we consider especially promising directions: (a) different types of partnering flexibility, (b) additional sources of venture flexibility, and (c) informal partner relationships.

Types of partnering flexibility. Project-venture research has paid most attention to the selection of project participants during venture formation. We chose a broader and more comprehensive conceptualization of partnering flexibility. In our framework, partnering flexibility represents both the opportunity to select different partners during venture formation and the opportunity to replace, add, or drop partners during project execution. Anecdotal data show that project ventures in some settings, for example open-source software projects, are capable of completing their tasks in spite of high levels of participant turnover during project execution. Thus, open-source projects indicate that the disruption

challenges of partner turnover can be addressed -- assuming that many of these projects succeed. In other settings, participant turnover seems to create more substantial disruption challenges. Movie project that replace actors, for example, often have to re-shoot prior scenes. We encourage more fine-grained future investigations that further differentiate between partnering flexibility during the formation and the execution of project ventures. Such research promises to reveal the relative importance of either flexibility type for the overall partnering flexibility effects our framework proposes. In addition, this future research may discover additional contingency factors unique to either of the two types of flexibility.

Additional sources of project-venture flexibility. Our framework focuses exclusively on partnering flexibility as a source of organizational flexibility for project ventures. In addition or alternatively, project ventures may increase their flexibility by employing more organic internal structures or by drawing on improvisational capabilities (Baker, Miner & Eesley, 2003; Miner et al., 2001; Moorman & Miner, 1998). If other sources of flexibility beyond partnering flexibility are relevant, this raises interesting questions not only about their respective independent effects on project outcomes, but also about their potential joint effects with partnering flexibility. Our framework for learning implications of partnering flexibility represents a valuable first step toward the discussion and investigation of such potential interaction effects.

Informal partner relationships. This paper focuses primarily on formal agreements between project participants concerning partner relationships. Formal relationships, however, are often embedded in informal and social relationships (Beckman, Burton & O'Reilly, 2007; Jones, 1996; Jones & Lichtenstein, 2008; Soda et al., 2004). Informal relationships can both enhance and constrain partnering flexibility. For example, loose networks of heterogeneous weak ties can support partnering flexibility as they connect an entrepreneur to a larger and more diverse set of potential partners and projects (Blau, 1977; Granovetter, 1973). However, strong informal ties between project partners, such as family relationships, can also substitute for otherwise low levels of formal commitments between partners (Ruef et al., 2003). In this case, these stable social bonds can reduce any flexibility of formal collaboration

agreements. These considerations indicate that in settings where social embeddedness plays a significant role, its effects need to be taken into account when evaluating partnering flexibility and its learning implications.

Long-Term Adaptability Implications

Some researchers have interpreted the dominance of single-project ventures in dynamic industries, such as movie production after the studio era, as indirect evidence for their general flexibility-related adaptive advantages (e.g., Storper, 1989). However, neo-institutional research offers strong evidence that both the diffusion and dominance of organizational forms can be driven by legitimacy considerations rather than performance advantages (Fligstein, 1985; Tolbert & Zucker, 1983). In addition, the temporary dominance of a specific organizational form may in itself represent a long-term adaptability disadvantage due to the reduced variety of organizational forms in a population. Consequently, the dominance of project ventures in some dynamic industries is not sufficient evidence for their general adaptability and long-term performance advantages.

Consistent with the bulk of the prior research, this paper focuses on immediate performance implications on the project level. However, the outlined learning implications of partnering flexibility are likely to also affect long-term adaptability and performance patterns in project-venture settings. Due to the short-term nature of each individual project, any evaluations of long-term implications require looking at sets of project ventures over time. Such a perspective suggests ecological models (March, 1999; Nelson & Winter, 1982) in which the failure of some projects is compensated by the success of others (Grabher, 2004; Schwab & Miner, 2008) and knowledge transfer to future ventures can occur (Agarwal, Audretsch & Sarkar, 2007). Such a perspective also implies the possibility for positive effects of project failure, if lessons from failed projects teach future projects what actions to avoid (Hoetker & Agarwal, 2007; Kim & Miner, 2007). Finally, an ecological perspective is suited to investigate drivers behind changes in the pool of available project partners over time. The characteristics of the pool of partners represent another set of key contingency factors for partnering flexibility implications. For example, low levels of heterogeneity in the pool of potential partners constrain any potential benefits of partnering flexibility.

A focus on long-term adaptability implications of partnering flexibility also allows the deeper investigation of some potentially ambiguous effects of the industry norms for partner roles and coordination practices. Industry-wide norms imply reduced variability related to the standardized features with potentially negative effects on long-term industry adaptability (Arthur, 1989; Liebowitz & Margolis, 1990). Such potential inertial tendencies of industry norms have received some support (Abrahamson & Fombrun, 1994; David, 1986); but if they simultaneously enable certain forms of flexibility, such as partnering flexibility with potentially positive impact on project-level learning (Bechky, 2006; Briscoe, 2007), then their overall long-term impact on industry adaptability becomes an interesting and important question (Miner & Anderson, 1999; Miner & Haunschild, 1995).

Recent research further suggests that related long-term adaptability effects may not only depend on whether industry-wide norms are present, but also on *how* they are institutionalized. If institutionalization involves the explicit articulation and codification of knowledge and routines (e.g., laws or union guidelines) their explicit codification can facilitate their adjustment through deliberate individual or collective action (Zollo & Winter, 2003). In contrast, if institutionalization is based on tacit taken-for-granted knowledge and routines, deliberate adjustment efforts can be difficult. In addition, the speed of their diffusion may affect the long-term adaptability implications of industry norms. An incomplete and slower diffusion of institutionalized norms has been associated with a higher variability of practices that may help to prevent premature and complete industry-wide lock-ins (Anderson, 1999).

The process of how such industry norms emerge represents another interesting and important research question. Project-governing permanent organizations can play an important role for the development of communities of practice and industry-level knowledge domains. We outlined earlier, how some project-governing permanent organizations use knowledge management systems to help participants to reflect on their experience and to capture gained knowledge (Carlile, 2002; Osterlund, 2004). Thus, permanent organizations or groups of such organizations may play important roles in the discovery and codification of knowledge, which eventually may lead to industry norms. Again, these considerations identify an important area for future research.

CONCLUSIONS

Project ventures represent an increasingly prevalent and important organizational form that deserves conceptual and empirical research attention. This paper outlines learning and adaptability implications of partnering flexibility in project ventures settings. The introduced framework specifies both potential learning opportunities and challenges. It further identifies factors on the organization level and industry level that moderate partnering flexibility effects on project learning. The outlined propositions offer encouragement and guidance for future empirical research to unpack the specific factors that determine under what conditions certain types of project ventures can offer adaptability advantages. From a broader perspective, our work contributes to efforts towards a theory of organizational learning by temporary organizational forms.

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